

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HW-1L (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.45</b>	<b>0.45</b>		
ORP	mV	-	<b>-57</b>	<b>-232</b>		
pH	SU	9.0-10.0	<b>8.4</b>	<b>8.38</b>		
Specific Conductance	uS/cm	-	<b>240</b>	<b>361</b>		
Temperature	C	-	<b>8.2</b>	<b>7.5</b>		
Turbidity	NTU	-	<b>6.5</b>	<b>29.4</b>		
Water Elevation	ft MSL	-	<b>1461.31</b>	<b>1465.85</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	1134	<b>700</b>	<b>670</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	23	< 50	< 50	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	11	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	117	<b>82</b>	<b>84</b>	-	-
Alkalinity, Carbonate	mg/L	14	< 2.0	< 2.0	-	-
Chloride	mg/L	52	<b>50</b>	<b>46</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.04	< .025	< .025	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	24	<b>24</b>	<b>25</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.2	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	35	<b>25</b>	<b>26</b>	-	-
Magnesium	mg/L	17	<b>11</b>	<b>11</b>	-	-
Potassium	mg/L	11	<b>1.8</b>	<b>2.1</b>	-	-
Sodium	mg/L	27	<b>25</b>	<b>25</b>	-	-
<b>General</b>						
Hardness	mg/L	157	<b>110</b>	<b>114</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HW-1U LLA (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.68</b>	<b>1.05</b>		
ORP	mV	-	<b>-68</b>	<b>-143</b>		
pH	SU	8.6-9.6	<b>8.4</b>	<b>8.82</b>		
Specific Conductance	uS/cm	-	<b>280</b>	<b>4.69</b>		
Temperature	C	-	<b>8.4</b>	<b>7.03</b>		
Turbidity	NTU	-	<b>534</b>	<b>978</b>		
Water Elevation	ft MSL	-	<b>1490.03</b>	<b>1489.96</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5	<b>11</b>	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	<b>7.1</b>	-	-
Iron	ug/L	800 (p)	<b>470</b>	<b>35000</b>	-	-
Lead	ug/L	12 (p)	< 3.0	<b>110</b>	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	200 (p)	< 50	<b>490</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	<b>9.8</b>	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	<b>35</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	125	<b>120</b>	<b>170</b>	-	-
Alkalinity, Carbonate	mg/L	66	<b>6.2</b>	< 2.0	-	-
Chloride	mg/L	40 (p)	<b>27</b>	<b>44</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.1 (p)	<b>0.19</b>	<b>0.32</b>	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	<b>0.24</b>	< 0.10	-	-
Sulfate	mg/L	58	<b>76</b>	<b>130</b>	-	-
Sulfide	mg/L	0.36	< 0.20	< 2.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	29	<b>10</b>	<b>61</b>	-	-
Magnesium	mg/L	15	<b>3.7</b>	<b>24</b>	-	-
Potassium	mg/L	50	<b>0.57</b>	<b>4.1</b>	-	-
Sodium	mg/L	33	<b>79</b>	<b>130</b>	-	-
<b>General</b>						
Hardness	mg/L	132	<b>70</b>	<b>130</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HW-1U UFB (Monitoring)**  
**Humboldt Mill**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.90</b>	<b>0.59</b>		
ORP	mV	-	<b>-119</b>	<b>-234</b>		
pH	SU	8.4-9.4	<b>8.7</b>	<b>8.83</b>		
Specific Conductance	uS/cm	-	<b>147</b>	<b>210</b>		
Temperature	C	-	<b>7.6</b>	<b>5.81</b>		
Turbidity	NTU	-	<b>3.6</b>	<b>3.5</b>		
Water Elevation	ft MSL	-	<b>1530.83</b>	<b>1530.25</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	11	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	800 (p)	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	75.3	< 50	< 50	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	127.11	<b>94</b>	<b>88</b>	-	-
Alkalinity, Carbonate	mg/L	13.76	<b>10</b>	<b>6.2</b>	-	-
Chloride	mg/L	120.74	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12 (p)	< .025	< .025	-	-
Nitrogen, Nitrate	mg/L	0.67	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	76.15	<b>7.4</b>	<b>5.6</b>	-	-
Sulfide	mg/L	1.31	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	45.61	<b>19</b>	<b>15</b>	-	-
Magnesium	mg/L	17.38	<b>6.1</b>	<b>6</b>	-	-
Potassium	mg/L	21.78	<b>4.7</b>	<b>5.2</b>	-	-
Sodium	mg/L	90.93	<b>19</b>	<b>17</b>	-	-
<b>General</b>						
Hardness	mg/L	188.88	<b>70</b>	<b>68</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HW-2 (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.39</b>	<b>0.3</b>		
ORP	mV	-	<b>-147</b>	<b>-181</b>		
pH	SU	7.7-8.7	<b>8.3</b>	<b>7.74</b>		
Specific Conductance	uS/cm	-	<b>431</b>	<b>644</b>		
Temperature	C	-	<b>9.3</b>	<b>9</b>		
Turbidity	NTU	-	<b>38</b>	<b>39</b>		
Water Elevation	ft MSL	-	<b>1530.44</b>	<b>1530.24</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	3401.08	<b>590</b>	<b>1400</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	323.84	<b>170</b>	<b>320</b>	-	-
Mercury	ng/L	1.31	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	145.02	<b>120</b>	<b>110</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	25.13	<b>27</b>	<b>28</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.047	<b>0.087</b>	<b>0.073</b>	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	134.73	<b>160</b>	<b>150</b>	-	-
Sulfide	mg/L	0.47	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	72.1	<b>60</b>	<b>59</b>	-	-
Magnesium	mg/L	27.74	<b>25</b>	<b>25</b>	-	-
Potassium	mg/L	7.08	<b>4.7</b>	<b>5.1</b>	-	-
Sodium	mg/L	15.47	<b>26</b>	<b>27</b>	-	-
<b>General</b>						
Hardness	mg/L	277.43	<b>256</b>	<b>254</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HW-8U (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.8</b>	<b>0.81</b>		
ORP	mV	-	<b>-95</b>	<b>-120</b>		
pH	SU	6.4-7.4	<b>6.9</b>	<b>7.16</b>		
Specific Conductance	uS/cm	-	<b>246</b>	<b>268</b>		
Temperature	C	-	<b>8.1</b>	<b>7.52</b>		
Turbidity	NTU	-	<b>1.7</b>	<b>1.9</b>		
Water Elevation	ft MSL	-	<b>1532.12</b>	<b>1531.57</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	<b>8.9</b>	<b>7.3</b>	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	27124.65	<b>10000</b>	<b>8300</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	5498	<b>5400</b>	<b>4900</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	25.72	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	237.47	<b>160</b>	<b>140</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	<b>13</b>	<b>13</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.04	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.1	< .1	< .1	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< .1	< .1	-	-
Sulfate	mg/L	2.64	<b>9</b>	<b>8.9</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	53.48	<b>39</b>	<b>33</b>	-	-
Magnesium	mg/L	22.17	<b>13</b>	<b>11</b>	-	-
Potassium	mg/L	4.07	<b>3.5</b>	<b>2.9</b>	-	-
Sodium	mg/L	4.43	<b>4.1</b>	<b>3.3</b>	-	-
<b>General</b>						
Hardness	mg/L	224.05	<b>162</b>	<b>148</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**HYG-1 (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.82</b>	<b>0.34</b>		
ORP	mV	-	<b>65</b>	<b>33</b>		
pH	SU	6.25-7.25	<b>7.0</b>	<b>6.64</b>		
Specific Conductance	uS/cm	-	<b>372</b>	<b>865</b>		
Temperature	C	-	<b>9.0</b>	<b>8</b>		
Turbidity	NTU	-	<b>1.0</b>	<b>1.1</b>		
Water Elevation	ft MSL	-	<b>1532.21</b>	<b>1530.72</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	4.4	< 4.0	<b>4.2</b>	-	-
Iron	ug/L	800(p)	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	286	<b>340</b>	<b>440</b>	-	-
Mercury	ng/L	6.2	<b>17.1</b>	<b>26.3</b>	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	19	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	157	<b>210</b>	<b>370</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	12	<b>18</b>	<b>11</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.38	<b>0.49</b>	<b>0.34</b>	-	-
Nitrogen, Nitrate	mg/L	0.26	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	98	<b>53</b>	<b>100</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	52	<b>38</b>	<b>61</b>	-	-
Magnesium	mg/L	28	<b>20</b>	<b>31</b>	-	-
Potassium	mg/L	8.4	<b>8.3</b>	<b>13</b>	-	-
Sodium	mg/L	14	<b>39</b>	<b>78</b>	-	-
<b>General</b>						
Hardness	mg/L	230	<b>186</b>	<b>300</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**KMW-5R (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>4.4</b>	NM		
ORP	mV	-	<b>28</b>	NM		
pH	SU	6.7-7.7	<b>7.0</b>	NM		
Specific Conductance	uS/cm	-	<b>590</b>	NM		
Temperature	C	-	<b>5.5</b>	NM		
Turbidity	NTU	-	<b>89</b>	NM		
Water Elevation	ft MSL	-	<b>1558.63</b>	<b>1557.2</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	6	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	14.6	< 4.0	<b>8</b>	-	-
Iron	ug/L	33432	< 200	<b>13000</b>	-	-
Lead	ug/L	4.8	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	2815	<b>1900</b>	<b>2100</b>	-	-
Mercury	ng/L	2.1	< 1.0	<b>7.42</b>	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	19.05	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	486.4	<b>380</b>	<b>380</b>	-	-
Alkalinity, Carbonate	mg/L	3.31	< 2.0	< 2.0	-	-
Chloride	mg/L	139.4	<b>23</b>	<b>17</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.76	<b>0.038</b>	<b>0.03</b>	-	-
Nitrogen, Nitrate	mg/L	0.11	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.06	< 0.10	< 0.10	-	-
Sulfate	mg/L	123.12	<b>130</b>	<b>120</b>	-	-
Sulfide	mg/L	3.88	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	168.98	<b>120</b>	<b>130</b>	-	-
Magnesium	mg/L	66.57	<b>46</b>	<b>51</b>	-	-
Potassium	mg/L	9.05	<b>7.1</b>	<b>7.6</b>	-	-
Sodium	mg/L	50.02	<b>5.3</b>	<b>5.8</b>	-	-
<b>General</b>						
Hardness	mg/L	800	<b>520</b>	<b>504</b>	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>8.9</b>	<b>5.06</b>		
ORP	mV	-	<b>158</b>	<b>182</b>		
pH	SU	5.8-6.8	<b>5.1</b>	<b>5.9</b>		
Specific Conductance	uS/cm	-	<b>79</b>	<b>143</b>		
Temperature	C	-	<b>8.3</b>	<b>6.6</b>		
Turbidity	NTU	-	<b>0.92</b>	<b>2.2</b>		
Water Elevation	ft MSL	-	<b>1530.32</b>	<b>1530.36</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	458.54	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	4800.88	< 50	< 50	-	-
Mercury	ng/L	11.19	< 1.0	<b>1.2</b>	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	189.4	<b>32</b>	<b>41</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	18.59	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.39	< .03	< .03	-	-
Nitrogen, Nitrate	mg/L	3.1	<b>0.56</b>	<b>0.94</b>	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	109.52	<b>17</b>	<b>19</b>	-	-
Sulfide	mg/L	0.22	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	57.31	<b>8.5</b>	<b>10</b>	-	-
Magnesium	mg/L	26.33	<b>3.9</b>	<b>4.7</b>	-	-
Potassium	mg/L	9.18	<b>2.8</b>	<b>3</b>	-	-
Sodium	mg/L	14.29	<b>6.3</b>	<b>6.6</b>	-	-
<b>General</b>						
Hardness	mg/L	271.75	<b>36</b>	<b>48</b>	-	-



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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.61</b>	<b>0.09</b>		
ORP	mV	-	<b>-102</b>	<b>-216</b>		
pH	SU	7.2-8.2	<b>7.0</b>	<b>7.34</b>		
Specific Conductance	uS/cm	-	<b>248</b>	<b>394</b>		
Temperature	C	-	<b>7.2</b>	<b>7.5</b>		
Turbidity	NTU	-	<b>19</b>	<b>49</b>		
Water Elevation	ft MSL	-	<b>1530.93</b>	<b>1530.55</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	30.27	< 4.0	< 4.0	-	-
Iron	ug/L	27404.89	<b>17000</b>	<b>18000</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	6881.06	<b>2200</b>	<b>2200</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	26.48	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	171.66	<b>150</b>	<b>150</b>	-	-
Alkalinity, Carbonate	mg/L	18.42	< 2.0	< 2.0	-	-
Chloride	mg/L	43.13	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	1.6	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	80.45	<b>21</b>	<b>16</b>	-	-
Sulfide	mg/L	1.7	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	40.07	<b>34</b>	<b>32</b>	-	-
Magnesium	mg/L	16.19	<b>15</b>	<b>14</b>	-	-
Potassium	mg/L	12.53	<b>3</b>	<b>3</b>	-	-
Sodium	mg/L	55.79	<b>4.8</b>	<b>4.6</b>	-	-
<b>General</b>						
Hardness	mg/L	163.45	<b>156</b>	<b>152</b>	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	1.5	1.05		
ORP	mV	-	53	123		
pH	SU	9.8-10.8	8.7	6.88		
Specific Conductance	uS/cm	-	285	488		
Temperature	C	-	6.8	7		
Turbidity	NTU	-	3.5	30.8		
Water Elevation	ft MSL	-	1529.92	1529.76		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	7.52	< 5.0	< 5.0	-	-
Barium	ug/L	154.72	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	386.05	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	717.08	97	91	-	-
Mercury	ng/L	4.0 (p)	< 1.0	1.34	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	193.52	130	130	-	-
Alkalinity, Carbonate	mg/L	53.68	< 2.0	< 2.0	-	-
Chloride	mg/L	12.47	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.03	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	1.8	0.63	0.52	-	-
Nitrogen, Nitrite	mg/L	0.12	< 0.10	< 0.10	-	-
Sulfate	mg/L	148.08	86	84	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	99.4	36	34	-	-
Magnesium	mg/L	17.29	10	9.7	-	-
Potassium	mg/L	36.44	4.8	4.7	-	-
Sodium	mg/L	42.19	41	41	-	-
<b>General</b>						
Hardness	mg/L	285.53	134	124	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>1.9</b>	<b>5.83</b>		
ORP	mV	-	<b>137</b>	<b>-72</b>		
pH	SU	8.5-9.5	<b>6.8</b>	<b>8.13</b>		
Specific Conductance	uS/cm	-	<b>157</b>	<b>118</b>		
Temperature	C	-	<b>6.4</b>	<b>5.6</b>		
Turbidity	NTU	-	<b>3</b>	<b>8.1</b>		
Water Elevation	ft MSL	-	<b>1526.19</b>	<b>1533.03</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	2484	<b>630</b>	<b>650</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	126	<b>78</b>	<b>79</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	66	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	125	<b>94</b>	<b>94</b>	-	-
Alkalinity, Carbonate	mg/L	15	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12 (p)	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	36	<b>33</b>	<b>34</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	49	<b>29</b>	<b>31</b>	-	-
Magnesium	mg/L	14	<b>9.5</b>	<b>10</b>	-	-
Potassium	mg/L	22	<b>3.2</b>	<b>3.4</b>	-	-
Sodium	mg/L	8	<b>3.2</b>	<b>3.4</b>	-	-
<b>General</b>						
Hardness	mg/L	160	<b>116</b>	<b>112</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-703 DBA (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.34</b>	<b>0.92</b>		
ORP	mV	-	<b>-213</b>	<b>-255</b>		
pH	SU	8.7-9.7	<b>8.9</b>	<b>9.42</b>		
Specific Conductance	uS/cm	-	<b>160</b>	<b>252</b>		
Temperature	C	-	<b>6.0</b>	<b>5.1</b>		
Turbidity	NTU	-	<b>0.9</b>	<b>2.31</b>		
Water Elevation	ft MSL	-	<b>1531.77</b>	<b>1530.61</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	2738	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	17	-	-	-	-
Manganese	ug/L	60	< 50	< 50	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	22	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	74	<b>79</b>	<b>58</b>	-	-
Alkalinity, Carbonate	mg/L	27	<b>10</b>	<b>25</b>	-	-
Chloride	mg/L	20	<b>18</b>	<b>16</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12	<b>0.05</b>	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.11	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	91	<b>17</b>	<b>16</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	<b>0.78</b>	-	-
<b>Major Cations</b>						
Calcium	mg/L	29	<b>19</b>	<b>11</b>	-	-
Magnesium	mg/L	17	<b>13</b>	<b>9.4</b>	-	-
Potassium	mg/L	15	<b>11</b>	<b>21</b>	-	-
Sodium	mg/L	14	<b>8.2</b>	<b>11</b>	-	-
<b>General</b>						
Hardness	mg/L	137	<b>98</b>	<b>68</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-703 LLA (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.36</b>	<b>0.26</b>		
ORP	mV	-	<b>-136</b>	<b>-271</b>		
pH	SU	8.2-9.2	<b>8.0</b>	<b>8.39</b>		
Specific Conductance	uS/cm	-	<b>162</b>	<b>270</b>		
Temperature	C	-	<b>5.8</b>	<b>6.28</b>		
Turbidity	NTU	-	<b>1.9</b>	<b>6.1</b>		
Water Elevation	ft MSL	-	<b>1532.11</b>	<b>1531.33</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	2965.88	<b>750</b>	<b>560</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	30.13	-	-	-	-
Manganese	ug/L	100.53	<b>79</b>	<b>73</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40+	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	83.95	<b>86</b>	<b>83</b>	-	-
Alkalinity, Carbonate	mg/L	3.97	< 2.0	< 2.0	-	-
Chloride	mg/L	124.08	<b>12</b>	<b>11</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.08	<b>0.038</b>	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	43.63	<b>32</b>	<b>32</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	38.89	<b>26</b>	<b>26</b>	-	-
Magnesium	mg/L	13.27	<b>11</b>	<b>11</b>	-	-
Potassium	mg/L	9.67	<b>3.6</b>	<b>3.8</b>	-	-
Sodium	mg/L	66.85	<b>6.5</b>	<b>8.3</b>	-	-
<b>General</b>						
Hardness	mg/L	137.58	<b>112</b>	<b>108</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-703 QAL (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>7.6</b>	<b>6.62</b>		
ORP	mV	-	<b>84</b>	<b>104</b>		
pH	SU	7.2-8.2	<b>5.9</b>	<b>6.33</b>		
Specific Conductance	uS/cm	-	<b>97</b>	<b>260</b>		
Temperature	C	-	<b>6.5</b>	<b>6.4</b>		
Turbidity	NTU	-	<b>2.4</b>	<b>1.75</b>		
Water Elevation	ft MSL	-	<b>1534.58</b>	<b>1532.86</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	255.36	< 200	< 200	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	105.05	< 50	< 50	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	40 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	99.57	<b>58</b>	<b>56</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	131.24	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12 (p)	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.22	<b>1.1</b>	<b>1.3</b>	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	49.72	<b>13</b>	<b>14</b>	-	-
Sulfide	mg/L	0.3	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	39.66	<b>16</b>	<b>15</b>	-	-
Magnesium	mg/L	10.72	<b>6.7</b>	<b>6</b>	-	-
Potassium	mg/L	3.13	<b>1.5</b>	<b>1.4</b>	-	-
Sodium	mg/L	10.48	<b>2.6</b>	<b>2.3</b>	-	-
<b>General</b>						
Hardness	mg/L	135.72	<b>66</b>	<b>70</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-703 UFB (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.90</b>	<b>1.53</b>		
ORP	mV	-	<b>50</b>	<b>3.5</b>		
pH	SU	8.3-9.3	<b>7.4</b>	<b>8.44</b>		
Specific Conductance	uS/cm	-	<b>170</b>	<b>156</b>		
Temperature	C	-	<b>6.7</b>	<b>6.2</b>		
Turbidity	NTU	-	<b>4.7</b>	<b>8.55</b>		
Water Elevation	ft MSL	-	<b>1532.19</b>	<b>1531.45</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	2440.99	<b>1500</b>	<b>640</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	193.95	<b>170</b>	<b>160</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	13.75	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	127.42	<b>81</b>	<b>83</b>	-	-
Alkalinity, Carbonate	mg/L	28.25	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.47	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.4 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.4 (p)	< 0.05	< 0.10	-	-
Sulfate	mg/L	52.89	<b>45</b>	<b>46</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	53.06	<b>31</b>	<b>31</b>	-	-
Magnesium	mg/L	16.52	<b>11</b>	<b>11</b>	-	-
Potassium	mg/L	5.87	<b>2.4</b>	<b>2.4</b>	-	-
Sodium	mg/L	35.15	<b>3.1</b>	<b>2.9</b>	-	-
<b>General</b>						
Hardness	mg/L	193.1	<b>124</b>	<b>124</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-704 DBA (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.7</b>	<b>0.51</b>		
ORP	mV	-	<b>-116</b>	<b>-324</b>		
pH	SU	8.6-9.6	<b>8.0</b>	<b>8.71</b>		
Specific Conductance	uS/cm	-	<b>158.0</b>	<b>218</b>		
Temperature	C	-	<b>6.2</b>	<b>8.08</b>		
Turbidity	NTU	-	<b>0.74</b>	<b>3.5</b>		
Water Elevation	ft MSL	-	<b>1531.97</b>	<b>1531.08</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1480	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	9645	<b>600</b>	<b>650</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	58	<b>51</b>	< 50	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	11	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	129	<b>130</b>	<b>130</b>	-	-
Alkalinity, Carbonate	mg/L	32	<b>4.1</b>	<b>2.1</b>	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.04	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	6	< 1.0	< 1.0	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	27	<b>22</b>	<b>20</b>	-	-
Magnesium	mg/L	14	<b>12</b>	<b>10</b>	-	-
Potassium	mg/L	4	<b>2.8</b>	<b>2.4</b>	-	-
Sodium	mg/L	14	<b>11</b>	<b>10</b>	-	-
<b>General</b>						
Hardness	mg/L	111	<b>108</b>	<b>100</b>	-	-



**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-704 LLA (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.32</b>	<b>0.72</b>		
ORP	mV	-	<b>-185</b>	<b>-180</b>		
pH	SU	8.2-9.2	<b>8.3</b>	<b>8.03</b>		
Specific Conductance	uS/cm	-	<b>157</b>	<b>296</b>		
Temperature	C	-	<b>7.7</b>	<b>4.19</b>		
Turbidity	NTU	-	<b>3.1</b>	<b>10.05</b>		
Water Elevation	ft MSL	-	<b>1531.75</b>	<b>1530.88</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	4974	<b>650</b>	<b>870</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	90	<b>50</b>	<b>84</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	11	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	132	<b>120</b>	<b>150</b>	-	-
Alkalinity, Carbonate	mg/L	10	<b>4.1</b>	< 2.0	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12 (p)	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	23	<b>5.7</b>	<b>9.1</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	33	<b>19</b>	<b>31</b>	-	-
Magnesium	mg/L	17	<b>12</b>	<b>14</b>	-	-
Potassium	mg/L	5	<b>8.1</b>	<b>4.5</b>	-	-
Sodium	mg/L	5	<b>5.1</b>	<b>3.8</b>	-	-
<b>General</b>						
Hardness	mg/L	149	<b>98</b>	<b>140</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-704 QAL (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.87</b>	<b>0.11</b>		
ORP	mV	-	<b>1.7</b>	<b>55</b>		
pH	SU	5.5-6.5	<b>5.7</b>	<b>5.9</b>		
Specific Conductance	uS/cm	-	<b>265</b>	<b>451</b>		
Temperature	C	-	<b>8.1</b>	<b>7.3</b>		
Turbidity	NTU	-	<b>0.51</b>	<b>2</b>		
Water Elevation	ft MSL	-	<b>1531.48</b>	<b>1530.39</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	24	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	37038	<b>2200</b>	<b>6900</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	7914	<b>3900</b>	<b>7000</b>	-	-
Mercury	ng/L	5.95	<b>9.69</b>	<b>18</b>	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	44 (p)	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	241	<b>140</b>	<b>160</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	18	<b>16</b>	<b>16</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.04	<b>0.089</b>	<b>0.1</b>	-	-
Nitrogen, Nitrate	mg/L	0.17	<b>0.74</b>	<b>0.47</b>	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	23	<b>38</b>	<b>32</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	51	<b>40</b>	<b>38</b>	-	-
Magnesium	mg/L	9	<b>11</b>	<b>10</b>	-	-
Potassium	mg/L	3.11	<b>3.2</b>	<b>2.7</b>	-	-
Sodium	mg/L	27	<b>21</b>	<b>22</b>	-	-
<b>General</b>						
Hardness	mg/L	185	<b>156</b>	<b>160</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-704 UFB (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.44</b>	<b>0.09</b>		
ORP	mV	-	<b>-108</b>	<b>-150</b>		
pH	SU	6.4-7.4	<b>6.8</b>	<b>6.97</b>		
Specific Conductance	uS/cm	-	<b>345</b>	<b>506</b>		
Temperature	C	-	<b>8.3</b>	<b>7.6</b>		
Turbidity	NTU	-	<b>4.7</b>	<b>149</b>		
Water Elevation	ft MSL	-	<b>1531.63</b>	<b>1530.75</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	5	< 4.0	< 4.0	-	-
Iron	ug/L	23040	<b>28000</b>	<b>14000</b>	-	-
Lead	ug/L	4	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	618	<b>1000</b>	<b>1000</b>	-	-
Mercury	ng/L	2	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	15	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	181	<b>160</b>	<b>170</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	18	<b>19</b>	<b>15</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.27	<b>0.031</b>	<b>0.026</b>	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.14	< 0.10	< 0.10	-	-
Sulfate	mg/L	38	<b>47</b>	<b>31</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	38	<b>56</b>	<b>50</b>	-	-
Magnesium	mg/L	7	<b>11</b>	<b>9.8</b>	-	-
Potassium	mg/L	4	<b>4.1</b>	<b>3.8</b>	-	-
Sodium	mg/L	65	<b>7.6</b>	<b>6.4</b>	-	-
<b>General</b>						
Hardness	mg/L	106	<b>198</b>	<b>186</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-705 QAL (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.59</b>	<b>0.48</b>		
ORP	mV	-	<b>-17</b>	<b>-54</b>		
pH	SU	5.6-6.6	<b>6.1</b>	<b>6.29</b>		
Specific Conductance	uS/cm	-	<b>169</b>	<b>345</b>		
Temperature	C	-	<b>8.5</b>	<b>6.3</b>		
Turbidity	NTU	-	<b>1.3</b>	<b>1.6</b>		
Water Elevation	ft MSL	-	<b>1534.12</b>	<b>1533.45</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	14081	<b>8700</b>	<b>10000</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	1674	<b>750</b>	< 1200	-	-
Mercury	ng/L	1	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	174	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	94	<b>61</b>	<b>78</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	66	<b>32</b>	<b>25</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.096	<b>0.11</b>	<b>0.083</b>	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	6	<b>5</b>	<b>11</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	27	<b>15</b>	<b>16</b>	-	-
Magnesium	mg/L	13	<b>6.7</b>	<b>7.1</b>	-	-
Potassium	mg/L	3	<b>2.7</b>	<b>2.5</b>	-	-
Sodium	mg/L	17	<b>13</b>	<b>13</b>	-	-
<b>General</b>						
Hardness	mg/L	115	<b>70</b>	<b>74</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-705 UFB (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.77</b>	<b>1</b>		
ORP	mV	-	<b>-68</b>	<b>-106</b>		
pH	SU	6.7-7.7	<b>7.0</b>	<b>6.89</b>		
Specific Conductance	uS/cm	-	<b>188</b>	<b>38</b>		
Temperature	C	-	<b>8.1</b>	<b>7.3</b>		
Turbidity	NTU	-	<b>3.8</b>	<b>24.7</b>		
Water Elevation	ft MSL	-	<b>1534.16</b>	<b>1533.16</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	11214	<b>9700</b>	<b>10000</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	866	<b>710</b>	<b>900</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	17	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	103	<b>86</b>	<b>84</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	<b>24</b>	<b>25</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.12 (p)	< 0.03	< 0.03	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	15	<b>4.7</b>	<b>2.7</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	26	<b>23</b>	<b>23</b>	-	-
Magnesium	mg/L	12	<b>12</b>	<b>12</b>	-	-
Potassium	mg/L	4	<b>3.9</b>	<b>4.1</b>	-	-
Sodium	mg/L	3	<b>3</b>	<b>3.1</b>	-	-
<b>General</b>						
Hardness	mg/L	111	<b>110</b>	<b>114</b>	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.56</b>	<b>0.3</b>		
ORP	mV	-	<b>37</b>	<b>38.6</b>		
pH	SU	6.2-7.2	<b>5.8</b>	<b>6</b>		
Specific Conductance	uS/cm	-	<b>670</b>	<b>1021</b>		
Temperature	C	-	<b>7.7</b>	<b>7.8</b>		
Turbidity	NTU	-	<b>7.7</b>	<b>20.1</b>		
Water Elevation	ft MSL	-	<b>1560.54</b>	<b>1558.91</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	16	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	10846	<b>4300</b>	<b>4700</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	27225	<b>18000</b>	<b>18000</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.0	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	<b>26</b>	<b>25</b>	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	55	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	153	<b>75</b>	<b>78</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	105	<b>150</b>	<b>150</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	1.4	<b>0.43</b>	<b>0.45</b>	-	-
Nitrogen, Nitrate	mg/L	0.4 (p)	< 0.10	<b>0.44</b>	-	-
Nitrogen, Nitrite	mg/L	0.4 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	479	<b>200</b>	<b>210</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	183	<b>88</b>	<b>88</b>	-	-
Magnesium	mg/L	56	<b>34</b>	<b>35</b>	-	-
Potassium	mg/L	6	<b>4.5</b>	<b>4.7</b>	-	-
Sodium	mg/L	234	<b>29</b>	<b>37</b>	-	-
<b>General</b>						
Hardness	mg/L	609	<b>6</b>	<b>80</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-707 QAL (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>0.39</b>	<b>0.5</b>		
ORP	mV	-	<b>-59</b>	<b>-150</b>		
pH	SU	6.3-7.3	<b>6.7</b>	<b>7.11</b>		
Specific Conductance	uS/cm	-	<b>219</b>	<b>402</b>		
Temperature	C	-	<b>8.4</b>	<b>7.3</b>		
Turbidity	NTU	-	<b>0.96</b>	<b>1.3</b>		
Water Elevation	ft MSL	-	<b>1582.02</b>	<b>1582.3</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	20 (p)	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	16 (p)	< 4.0	< 4.0	-	-
Iron	ug/L	7493	<b>4900</b>	<b>5200</b>	-	-
Lead	ug/L	12 (p)	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	1189	<b>810</b>	<b>1000</b>	-	-
Mercury	ng/L	4.0 (p)	< 1.0	< 1.00	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	< 20	< 20	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	19	< 10	< 10	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	150	<b>160</b>	<b>160</b>	-	-
Alkalinity, Carbonate	mg/L	8.0 (p)	< 2.0	< 2.0	-	-
Chloride	mg/L	40 (p)	< 10	< 10	-	-
Fluoride	mg/L	4.0 (p)	< 1.0	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.34	<b>0.23</b>	<b>0.26</b>	-	-
Nitrogen, Nitrate	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Nitrogen, Nitrite	mg/L	0.40 (p)	< 0.10	< 0.10	-	-
Sulfate	mg/L	8	<b>5.2</b>	<b>5.3</b>	-	-
Sulfide	mg/L	0.80 (p)	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	51	<b>41</b>	<b>42</b>	-	-
Magnesium	mg/L	15	<b>12</b>	<b>12</b>	-	-
Potassium	mg/L	3	<b>2.5</b>	<b>2.6</b>	-	-
Sodium	mg/L	4	<b>2.9</b>	<b>2.8</b>	-	-
<b>General</b>						
Hardness	mg/L	149	<b>156</b>	<b>154</b>	-	-

**2017**  
**Mine Permit Groundwater Quality Monitoring Data**  
**MW-9R (Monitoring)**

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>3.60</b>	<b>4</b>		
ORP	mV	-	<b>108</b>	<b>199</b>		
pH	SU	5.4-6.4	<b>5.6</b>	<b>5.94</b>		
Specific Conductance	uS/cm	-	<b>427</b>	<b>736</b>		
Temperature	C	-	<b>12</b>	<b>9</b>		
Turbidity	NTU	-	<b>2.6</b>	<b>1.8</b>		
Water Elevation	ft MSL	-	<b>1595.52</b>	<b>1596.87</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	8.0 (p)	-	-	-	-
Arsenic	ug/L	25	< 5.0	< 5.0	-	-
Barium	ug/L	400 (p)	-	-	-	-
Beryllium	ug/L	4.0 (p)	-	-	-	-
Boron	ug/L	1200 (p)	-	-	-	-
Cadmium	ug/L	4.0 (p)	-	-	-	-
Chromium	ug/L	40 (p)	-	-	-	-
Cobalt	ug/L	80 (p)	-	-	-	-
Copper	ug/L	5	< 4.0	< 4.0	-	-
Iron	ug/L	25558	< 200	< 200	-	-
Lead	ug/L	0.038	< 3.0	< 3.0	-	-
Lithium	ug/L	40 (p)	-	-	-	-
Manganese	ug/L	1694	<b>66</b>	<b>63</b>	-	-
Mercury	ng/L	1	<b>1.93</b>	< 1.00	-	-
Molybdenum	ug/L	200 (p)	-	-	-	-
Nickel	ug/L	80 (p)	<b>25</b>	<b>28</b>	-	-
Selenium	ug/L	20 (p)	-	-	-	-
Silver	ug/L	0.8 (p)	-	-	-	-
Thallium	ug/L	8.0 (p)	-	-	-	-
Vanadium	ug/L	16 (p)	-	-	-	-
Zinc	ug/L	25	<b>15</b>	<b>16</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	137	<b>50</b>	<b>30</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2	< 2.0	-	-
Chloride	mg/L	711	<b>14</b>	<b>77</b>	-	-
Fluoride	mg/L	4.0 (p)	< 1	< 1.0	-	-
Nitrogen, Ammonia	mg/L	0.36	< .025	< .025	-	-
Nitrogen, Nitrate	mg/L	1	<b>2.2</b>	<b>2.7</b>	-	-
Nitrogen, Nitrite	mg/L	0.07	< .1	< .1	-	-
Sulfate	mg/L	343	<b>200</b>	<b>180</b>	-	-
Sulfide	mg/L	1	< 0.20	< 0.20	-	-
<b>Major Cations</b>						
Calcium	mg/L	123	<b>62</b>	<b>78</b>	-	-
Magnesium	mg/L	48	<b>25</b>	<b>30</b>	-	-
Potassium	mg/L	8	<b>3.5</b>	<b>3.6</b>	-	-
Sodium	mg/L	289	<b>15</b>	<b>15</b>	-	-
<b>General</b>						
Hardness	mg/L	510	<b>256</b>	<b>300</b>	-	-



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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>11</b>	<b>11.7</b>		
ORP	mV	-	<b>113</b>	<b>97.1</b>		
pH	SU	6.1-7.1	<b>5.4</b>	<b>6.65</b>		
Specific Conductance	uS/cm	-	<b>35</b>	<b>37.8</b>		
Temperature	C	-	<b>1.6</b>	<b>0.41</b>		
Turbidity	NTU	-	<b>4.3</b>	<b>7.3</b>		
Flow	cfs	-	NM	NM		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.73	-	-	-	-
Arsenic	ug/L	3.4	< 1.0	< 1.0	-	-
Barium	ug/L	12	-	-	-	-
Beryllium	ug/L	0.73	-	-	-	-
Boron	ug/L	14.8	-	-	-	-
Cadmium	ug/L	0.1	-	-	-	-
Chromium	ug/L	1.2	-	-	-	-
Cobalt	ug/L	0.42	-	-	-	-
Copper	ug/L	0.86	<b>0.54</b>	<b>0.55</b>	-	-
Iron	ug/L	3255	<b>1100</b>	<b>1700</b>	-	-
Lead	ug/L	0.351	<b>0.155</b>	<b>0.174</b>	-	-
Lithium	ug/L	5.7	-	-	-	-
Manganese	ug/L	226	<b>55</b>	<b>130</b>	-	-
Mercury	ng/L	8.5	<b>4.18</b>	<b>4.48</b>	-	-
Molybdenum	ug/L	1	-	-	-	-
Nickel	ug/L	1	<b>0.46</b>	<b>0.62</b>	-	-
Selenium	ug/L	0.19	-	-	-	-
Silver	ug/L	0.12	-	-	-	-
Thallium	ug/L	0.75	-	-	-	-
Vanadium	ug/L	1.5	-	-	-	-
Zinc	ug/L	2.6	<b>18.1</b>	<b>2.38</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	50	<b>16</b>	<b>21</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	13	<b>7.8</b>	<b>4.2</b>	-	-
Fluoride	mg/L	0.19	< 0.10	< 0.10	-	-
Nitrogen, Ammonia	mg/L	2.0 (P)	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.34	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.36	< 0.50	< 0.50	-	-
Sulfate	mg/L	10	< 1.0	< 1.0	-	-
Sulfide	mg/L	3.2	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	15	<b>5.9</b>	<b>6.6</b>	-	-
Magnesium	mg/L	4.1	<b>1.9</b>	<b>2</b>	-	-
Potassium	mg/L	1	<b>0.95</b>	<b>0.68</b>	-	-
Sodium	mg/L	6.9	<b>3.8</b>	<b>2.5</b>	-	-
<b>General</b>						
Hardness	mg/L	56	<b>22</b>	<b>36</b>	-	-
Total Dissolved Solids	mg/L	111	<b>140</b>	<b>82</b>	-	-
Total Suspended Solids	mg/L	4	< 3.3	-	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>12</b>	<b>11.3</b>		
ORP	mV	-	<b>125</b>	<b>38.4</b>		
pH	SU	6.0-7.0	<b>5.4</b>	<b>7.11</b>		
Specific Conductance	uS/cm	-	<b>30</b>	<b>56.7</b>		
Temperature	C	-	<b>1.6</b>	<b>0.29</b>		
Turbidity	NTU	-	<b>5.4</b>	<b>8.28</b>		
Flow	cfs	-	<b>103</b>	55		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.72	-	-	-	-
Arsenic	ug/L	5.1	<b>1.1</b>	<b>1.4</b>	-	-
Barium	ug/L	20	-	-	-	-
Beryllium	ug/L	0.73	-	-	-	-
Boron	ug/L	13.5	-	-	-	-
Cadmium	ug/L	0.09	-	-	-	-
Chromium	ug/L	1.2	-	-	-	-
Cobalt	ug/L	0.65	-	-	-	-
Copper	ug/L	0.9	<b>0.5</b>	<b>0.49</b>	-	-
Iron	ug/L	6440	<b>1600</b>	<b>2400</b>	-	-
Lead	ug/L	0.374	<b>0.154</b>	<b>0.146</b>	-	-
Lithium	ug/L	5.7	-	-	-	-
Manganese	ug/L	560	<b>90</b>	<b>180</b>	-	-
Mercury	ng/L	7.5	<b>3.99</b>	<b>3.96</b>	-	-
Molybdenum	ug/L	0.729	-	-	-	-
Nickel	ug/L	1.2	<b>0.57</b>	<b>0.95</b>	-	-
Selenium	ug/L	0.19	-	-	-	-
Silver	ug/L	0.12	-	-	-	-
Thallium	ug/L	0.73	-	-	-	-
Vanadium	ug/L	3	-	-	-	-
Zinc	ug/L	3	<b>2.17</b>	<b>1.97</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	53	<b>15</b>	<b>24</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	16	<b>6.8</b>	<b>7.2</b>	-	-
Fluoride	mg/L	0.19	< 0.10	< 0.10	-	-
Nitrogen, Ammonia	mg/L	2.0 (P)	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.404	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.365	< 0.50	< 0.50	-	-
Sulfate	mg/L	13.9	< 1.0	<b>7.9</b>	-	-
Sulfide	mg/L	3.2	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	18	<b>6.5</b>	<b>9</b>	-	-
Magnesium	mg/L	4.9	<b>2</b>	<b>2.7</b>	-	-
Potassium	mg/L	1.2	<b>1</b>	<b>0.95</b>	-	-
Sodium	mg/L	9.4	<b>3.7</b>	<b>4.4</b>	-	-
<b>General</b>						
Hardness	mg/L	67	<b>24</b>	<b>36</b>	-	-
Total Dissolved Solids	mg/L	125	<b>90</b>	<b>60</b>	-	-
Total Suspended Solids	mg/L	12	< 3.3	-	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>13</b>	<b>11.4</b>		
ORP	mV	-	<b>124</b>	<b>37.9</b>		
pH	SU	6.0-7.0	<b>5.6</b>	<b>7.23</b>		
Specific Conductance	uS/cm	-	<b>47</b>	<b>58.8</b>		
Temperature	C	-	<b>1.7</b>	<b>0.28</b>		
Turbidity	NTU	-	<b>7.7</b>	<b>9.8</b>		
Flow	cfs	-	<b>NM</b>	<b>NM</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.7	-	-	-	-
Arsenic	ug/L	3.3	<b>2.1</b>	<b>1.5</b>	-	-
Barium	ug/L	15	-	-	-	-
Beryllium	ug/L	0.73	-	-	-	-
Boron	ug/L	15	-	-	-	-
Cadmium	ug/L	0.09	-	-	-	-
Chromium	ug/L	0.85	-	-	-	-
Cobalt	ug/L	0.65	-	-	-	-
Copper	ug/L	0.92	<b>0.51</b>	<b>0.51</b>	-	-
Iron	ug/L	4268	<b>2900</b>	<b>2500</b>	-	-
Lead	ug/L	0.35	<b>0.198</b>	<b>0.163</b>	-	-
Lithium	ug/L	5.69	-	-	-	-
Manganese	ug/L	280	<b>140</b>	<b>200</b>	-	-
Mercury	ng/L	7.6	<b>6.22</b>	<b>4.02</b>	-	-
Molybdenum	ug/L	0.8	-	-	-	-
Nickel	ug/L	1.3	<b>0.68</b>	<b>1.21</b>	-	-
Selenium	ug/L	0.2	-	-	-	-
Silver	ug/L	0.12	-	-	-	-
Thallium	ug/L	0.7	-	-	-	-
Vanadium	ug/L	1.2	-	-	-	-
Zinc	ug/L	2.9	<b>2.72</b>	<b>2.16</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	56	<b>19</b>	<b>25</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	19	<b>8.6</b>	<b>8.1</b>	-	-
Fluoride	mg/L	0.29	< 0.10	< 0.10	-	-
Nitrogen, Ammonia	mg/L	2.0 (P)	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.343	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.365	< 0.50	< 0.50	-	-
Sulfate	mg/L	16	< 1	<b>9.1</b>	-	-
Sulfide	mg/L	3.2	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	19	<b>7.2</b>	<b>9</b>	-	-
Magnesium	mg/L	5.3	<b>2.3</b>	<b>2.8</b>	-	-
Potassium	mg/L	1.4	<b>1.2</b>	<b>1</b>	-	-
Sodium	mg/L	11	<b>4.9</b>	<b>4.8</b>	-	-
<b>General</b>						
Hardness	mg/L	71	<b>28</b>	<b>36</b>	-	-
Total Dissolved Solids	mg/L	141	<b>100</b>	<b>68</b>	-	-
Total Suspended Solids	mg/L	3.1	<b>12.3</b>	-	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>11</b>	<b>9.66</b>		
ORP	mV	-	<b>96</b>	<b>195.7</b>		
pH	SU	5.0-6.0	<b>5.0</b>	<b>5.27</b>		
Specific Conductance	uS/cm	-	<b>45</b>	<b>35</b>		
Temperature	C	-	<b>1.6</b>	<b>0.12</b>		
Turbidity	NTU	-	<b>2.4</b>	<b>4.16</b>		
Flow	cfs	-	NM	<b>0.169</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.7	-	-	-	-
Arsenic	ug/L	8.7	< 1.0	<b>1.1</b>	-	-
Barium	ug/L	26	-	-	-	-
Beryllium	ug/L	0.73	-	-	-	-
Boron	ug/L	12.7	-	-	-	-
Cadmium	ug/L	0.059	-	-	-	-
Chromium	ug/L	2.7	-	-	-	-
Cobalt	ug/L	0.85	-	-	-	-
Copper	ug/L	1	<b>0.53</b>	<b>0.77</b>	-	-
Iron	ug/L	11056	<b>1400</b>	<b>1300</b>	-	-
Lead	ug/L	1.8	<b>0.779</b>	<b>0.797</b>	-	-
Lithium	ug/L	8.6	-	-	-	-
Manganese	ug/L	641	<b>65</b>	<b>97</b>	-	-
Mercury	ng/L	17	<b>7.72</b>	<b>8.33</b>	-	-
Molybdenum	ug/L	8.1	-	-	-	-
Nickel	ug/L	1.9	<b>0.68</b>	<b>0.71</b>	-	-
Selenium	ug/L	0.325	-	-	-	-
Silver	ug/L	0.122	-	-	-	-
Thallium	ug/L	0.7	-	-	-	-
Vanadium	ug/L	4.2	-	-	-	-
Zinc	ug/L	9.2	<b>5.39</b>	<b>5.48</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	15	<b>3</b>	<b>5.1</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	24	<b>16</b>	<b>10</b>	-	-
Fluoride	mg/L	0.26	< 0.10	< 0.10	-	-
Nitrogen, Ammonia	mg/L	0.78	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.342	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.365	< 0.50	< 0.50	-	-
Sulfate	mg/L	9.3	< 1.0	< 1.0	-	-
Sulfide	mg/L	3.2	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	8.3	<b>3.9</b>	<b>3.5</b>	-	-
Magnesium	mg/L	3.3	<b>1.7</b>	<b>1.4</b>	-	-
Potassium	mg/L	2.6	<b>1.1</b>	<b>0.91</b>	-	-
Sodium	mg/L	11	<b>7.1</b>	<b>4.7</b>	-	-
<b>General</b>						
Hardness	mg/L	38	<b>20</b>	<b>16</b>	-	-
Total Dissolved Solids	mg/L	204	<b>105</b>	<b>60</b>	-	-
Total Suspended Solids	mg/L	34	< 3.3	-	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>11</b>	<b>1.6</b>		
ORP	mV	-	<b>73</b>	<b>116.4</b>		
pH	SU	6.3-7.3	<b>6.0</b>	<b>6.2</b>		
Specific Conductance	uS/cm	-	<b>106</b>	<b>141.2</b>		
Temperature	C	-	<b>2.2</b>	<b>1.34</b>		
Turbidity	NTU	-	<b>26</b>	<b>22.2</b>		
Flow	cfs	-	NM	<b>NM</b>		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.72	-	-	-	-
Arsenic	ug/L	10	<b>2.3</b>	<b>3.5</b>	-	-
Barium	ug/L	19	-	-	-	-
Beryllium	ug/L	0.73	-	-	-	-
Boron	ug/L	18	-	-	-	-
Cadmium	ug/L	0.09	-	-	-	-
Chromium	ug/L	10	-	-	-	-
Cobalt	ug/L	0.8	-	-	-	-
Copper	ug/L	1.34	<b>1.26</b>	<b>1.18</b>	-	-
Iron	ug/L	15593	<b>3300</b>	<b>7300</b>	-	-
Lead	ug/L	0.252	<b>0.314</b>	<b>0.293</b>	-	-
Lithium	ug/L	5.6	-	-	-	-
Manganese	ug/L	1295	<b>120</b>	<b>890</b>	-	-
Mercury	ng/L	4.3	<b>2.22</b>	<b>2.68</b>	-	-
Molybdenum	ug/L	2.8	-	-	-	-
Nickel	ug/L	1.9	<b>1.95</b>	<b>2.67</b>	-	-
Selenium	ug/L	0.176	-	-	-	-
Silver	ug/L	0.122	-	-	-	-
Thallium	ug/L	0.72	-	-	-	-
Vanadium	ug/L	0.83	-	-	-	-
Zinc	ug/L	4.5	<b>2.94</b>	<b>2.86</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	41	<b>19</b>	<b>98</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	56	<b>41</b>	<b>48</b>	-	-
Fluoride	mg/L	0.31	< 0.10	< 0.10	-	-
Nitrogen, Ammonia	mg/L	0.61	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.36	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.365	< 0.50	< 0.50	-	-
Sulfate	mg/L	10.1	< 1.0	< 1.0	-	-
Sulfide	mg/L	3.2	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	13	<b>7.7</b>	<b>10</b>	-	-
Magnesium	mg/L	5.8	<b>3.8</b>	<b>4.9</b>	-	-
Potassium	mg/L	2.7	<b>1.7</b>	<b>1.9</b>	-	-
Sodium	mg/L	28	<b>22</b>	<b>24</b>	-	-
<b>General</b>						
Hardness	mg/L	56	<b>32</b>	<b>40</b>	-	-
Total Dissolved Solids	mg/L	182	<b>76</b>	<b>126</b>	-	-
Total Suspended Solids	mg/L	9.8	<b>4.7</b>	-	-	-

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

Parameter	Unit	Recommended Benchmark 2014	Q4 2016	Q1 2017	Q2 2017	Q3 2017
<b>Field</b>						
D.O.	ppm	-	<b>8.6</b>	<b>5.13</b>		
ORP	mV	-	<b>70</b>	<b>21.5</b>		
pH	SU	6.1-7.1	<b>5.6</b>	<b>6.68</b>		
Specific Conductance	uS/m	-	<b>67</b>	<b>101.8</b>		
Temperature	C	-	<b>0.8</b>	<b>0.18</b>		
Turbidity	NTU	-	<b>16</b>	<b>18.8</b>		
Flow	cfs	-	NM	NM		
<b>Metals</b>						
Aluminum	ug/L	200 (p)	-	-	-	-
Antimony	ug/L	0.7	-	-	-	-
Arsenic	ug/L	4.4	<b>1.3</b>	<b>2.8</b>	-	-
Barium	ug/L	19	-	-	-	-
Beryllium	ug/L	0.7	-	-	-	-
Boron	ug/L	19.1	-	-	-	-
Cadmium	ug/L	0.09	-	-	-	-
Chromium	ug/L	0.74	-	-	-	-
Cobalt	ug/L	1.2	-	-	-	-
Copper	ug/L	1	<b>0.25</b>	<b>0.54</b>	-	-
Iron	ug/L	11315	<b>2600</b>	<b>9300</b>	-	-
Lead	ug/L	0.44	<b>0.121</b>	<b>0.169</b>	-	-
Lithium	ug/L	5.53	-	-	-	-
Manganese	ug/L	2101	<b>60</b>	<b>790</b>	-	-
Mercury	ng/L	6	<b>1.91</b>	<b>2.76</b>	-	-
Molybdenum	ug/L	1.9	-	-	-	-
Nickel	ug/L	1.8	<b>0.59</b>	<b>1.36</b>	-	-
Selenium	ug/L	0.19	-	-	-	-
Silver	ug/L	0.12	-	-	-	-
Thallium	ug/L	0.72	-	-	-	-
Vanadium	ug/L	0.82	-	-	-	-
Zinc	ug/L	10	<b>2.15</b>	<b>3.28</b>	-	-
<b>Major Anions</b>						
Alkalinity, Bicarbonate	mg/L	56	<b>16</b>	<b>28</b>	-	-
Alkalinity, Carbonate	mg/L	2	< 2.0	< 2.0	-	-
Chloride	mg/L	43	<b>23</b>	<b>31</b>	-	-
Fluoride	mg/L	0.34	<b>0.1</b>	< 0.10	-	-
Nitrogen, Ammonia	mg/L	2.0 (P)	< 0.50	< 0.50	-	-
Nitrogen, Nitrate	mg/L	0.303	< 0.50	< 0.50	-	-
Nitrogen, Nitrite	mg/L	0.365	< 0.50	< 0.50	-	-
Sulfate	mg/L	13.8	< 1.0	< 1.0	-	-
Sulfide	mg/L	3.17	< 5.0	< 5.0	-	-
<b>Major Cations</b>						
Calcium	mg/L	16	<b>7</b>	<b>9</b>	-	-
Magnesium	mg/L	6.6	<b>3.5</b>	<b>4.1</b>	-	-
Potassium	mg/L	2	<b>1.8</b>	<b>1.9</b>	-	-
Sodium	mg/L	21	<b>15</b>	<b>15</b>	-	-
<b>General</b>						
Hardness	mg/L	69	<b>30</b>	<b>40</b>	-	-
Total Dissolved Solids	mg/L	184	<b>85</b>	<b>144</b>	-	-
Total Suspended Solids	mg/L	15.4	< 3.3	-	-	-

Not sampled - No water present

Not sampled - No water present



**2017**  
**Mine Permit Groundwater Quality Monitoring Data Abbreviations & Data Qualifiers**  
**Humboldt Mill**

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

*Abbreviations & Data Qualifiers*

<b>Notes:</b>
Benchmarks are calculated based on guidance from Eagles Mine's Development of Site Specific Benchmarks for Mine Permit Water Quality Monitoring.
Results in <b>bold</b> text indicate that the parameter was detected at a level greater than the laboratory reporting limit.
Highlighted Cell = Value is equal to or above site-specific benchmark. An exceedance occurs if there are 2 consecutive sampling events with a value equal to or greater than the benchmark at a compliance monitoring location.
(p) = Due to less than two detections in baseline dataset, benchmark defaulted to four times the reporting limit.
--Denotes no benchmark required or parameter was not required to be collected during the sampling quarter.
NM = Not measured during the sampling event.