



3440 South 700 West  
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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Lenora Sullivan  
Utah Division of Water Quality  
PO Box 144870  
SLC, UT 84114  
TEL: (801) 538-6329

RE: Gold King Mine - San Juan River Sampling

Dear Lenora Sullivan:

Lab Set ID: 1508160

American West Analytical Laboratories received sample(s) on 8/10/2015 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: \_\_\_\_\_  
Laboratory Director or designee



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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-001  
**Client Sample ID:** San Juan R @ Mexican Hat US163 Xing (4953000)  
**Collection Date:** 8/8/2015 1740h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1951h	E200.7	0.237	1.00	<b>63.4</b>	<sup>2</sup>
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000366	0.00200	0.00131	J <sup>B</sup>
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000920	0.00200	<b>0.0163</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000538	0.00200	<b>1.54</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000288	0.00200	<b>0.00723</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000193	0.000500	<b>0.00150</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 1951h	E200.7	0.401	10.0	<b>167</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.00154	0.00200	<b>0.0294</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000434	0.00400	<b>0.0415</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000692	0.00200	<b>0.103</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1908h	E200.7	0.0767	0.100	<b>51.9</b>	<sup>2</sup>
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000264	0.00200	<b>0.0867</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1908h	E200.7	0.0294	1.00	<b>30.6</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/11/2015 933h	E200.8	0.00764	0.0100	<b>2.80</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 928h	E245.1	0.00000892	0.000150	<b>0.000180</b>	
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000206	0.00200	0.00130	J <sup>1</sup>
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000754	0.00200	<b>0.0478</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1908h	E200.7	0.247	1.00	<b>14.4</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000634	0.00200	0.00143	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000244	0.00200	0.000560	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1951h	E200.7	0.330	10.0	<b>63.9</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.0000242	0.00200	0.000838	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.000438	0.00440	<b>0.0705</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1946h	E200.8	0.00476	0.00500	<b>0.261</b>	

<sup>1</sup> - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

<sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

B - This analyte was also detected in the method blank below the PQL.

J - Estimated value between the MDL and the reporting limit (PQL).



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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-002  
**Client Sample ID:** San Juan R @ Sand Island (4953250)  
**Collection Date:** 8/8/2015 1619h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1919h	E200.7	0.0237	0.100	<b>55.7</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000366	0.00200	0.000436	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000920	0.00200	<b>0.0159</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000538	0.00200	<b>1.09</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000288	0.00200	<b>0.00521</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000193	0.000500	<b>0.00199</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 1957h	E200.7	0.401	10.0	<b>252</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.00154	0.00200	<b>0.0324</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000434	0.00400	<b>0.0343</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000692	0.00200	<b>0.0808</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1919h	E200.7	0.0767	0.100	<b>47.8</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000264	0.00200	<b>0.0747</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1919h	E200.7	0.0294	1.00	<b>33.8</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.00153	0.00200	<b>1.70</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 919h	E245.1	0.00000892	0.000150	<b>0.000158</b>	
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000206	0.00200	0.00175	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000754	0.00200	<b>0.0658</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1919h	E200.7	0.247	1.00	<b>13.3</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000634	0.00200	<b>0.00214</b>	
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000244	0.00200	0.000633	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1919h	E200.7	0.0330	1.00	<b>58.8</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.0000242	0.00200	0.00129	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.000438	0.00440	<b>0.0647</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2003h	E200.8	0.00476	0.00500	<b>0.242</b>	

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*



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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-003  
**Client Sample ID:** San Juan R @ Town of Montezuma (4953990)  
**Collection Date:** 8/8/2015 1454h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1959h	E200.7	0.237	1.00	<b>67.3</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000366	0.00200	0.000395	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000920	0.00200	<b>0.0202</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000538	0.00200	<b>1.59</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000288	0.00200	<b>0.00636</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000193	0.000500	<b>0.00249</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 1959h	E200.7	0.401	10.0	<b>390</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.00154	0.00200	<b>0.0388</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000434	0.00400	<b>0.0411</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000692	0.00200	<b>0.0824</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1922h	E200.7	0.0767	0.100	<b>50.4</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000264	0.00200	<b>0.0915</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1922h	E200.7	0.0294	1.00	<b>59.1</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/11/2015 943h	E200.8	0.00764	0.0100	<b>3.01</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 930h	E245.1	0.00000892	0.000150	<b>0.000222</b>	
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000206	0.00200	0.00130	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000754	0.00200	<b>0.0758</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1922h	E200.7	0.247	1.00	<b>17.7</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000634	0.00200	0.00193	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000244	0.00200	0.000655	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1922h	E200.7	0.0330	1.00	<b>51.7</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.0000242	0.00200	0.00118	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.000438	0.00440	<b>0.0828</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2016h	E200.8	0.00476	0.00500	<b>0.286</b>	

*B - This analyte was also detected in the method blank below the PQL.*

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-004  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/8/2015 1323h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1924h	E200.7	0.0237	0.100	<b>47.4</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000366	0.00200	0.000270	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000920	0.00200	<b>0.0125</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000538	0.00200	<b>1.30</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000288	0.00200	<b>0.00342</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000193	0.000500	<b>0.00127</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2002h	E200.7	0.401	10.0	<b>336</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.00154	0.00200	<b>0.0239</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000434	0.00400	<b>0.0228</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000692	0.00200	<b>0.0414</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1924h	E200.7	0.0767	0.100	<b>24.8</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000264	0.00200	<b>0.0445</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1924h	E200.7	0.0294	1.00	<b>56.3</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/11/2015 946h	E200.8	0.00764	0.0100	<b>2.32</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 932h	E245.1	0.00000892	0.000150	0.0000767	J
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000206	0.00200	0.000759	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000754	0.00200	<b>0.0405</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1924h	E200.7	0.247	1.00	<b>12.2</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000634	0.00200	0.00109	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000244	0.00200	0.000272	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1924h	E200.7	0.0330	1.00	<b>38.6</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.0000242	0.00200	0.000406	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.000438	0.00440	<b>0.0612</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2019h	E200.8	0.00476	0.00500	<b>0.147</b>	

*B - This analyte was also detected in the method blank below the PQL.*

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Laboratory Director

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QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-005  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1202h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.7	0.0237	0.100	<b>33.9</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000366	0.00200	0.000499	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000920	0.00200	<b>0.0123</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000538	0.00200	<b>0.702</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000288	0.00200	<b>0.00262</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000193	0.000500	<b>0.000907</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2004h	E200.7	0.401	10.0	<b>108</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.00154	0.00200	<b>0.0174</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000434	0.00400	<b>0.0168</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000692	0.00200	<b>0.0593</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.7	0.0767	0.100	<b>29.4</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000264	0.00200	<b>0.151</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.7	0.0294	1.00	<b>20.3</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.00153	0.00200	<b>1.10</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 934h	E245.1	0.00000892	0.000150	0.0000700	J
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000206	0.00200	0.00137	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000754	0.00200	<b>0.0230</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.7	0.247	1.00	<b>9.04</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000634	0.00200	0.00107	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000244	0.00200	0.00109	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.7	0.0330	1.00	<b>29.8</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.0000242	0.00200	0.000377	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.000438	0.00440	<b>0.0505</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2023h	E200.8	0.00476	0.00500	<b>0.160</b>	

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*





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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-006  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1505h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1935h	E200.7	0.0237	0.100	<b>26.7</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000366	0.00200	0.000573	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000920	0.00200	<b>0.0135</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000538	0.00200	<b>0.606</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000288	0.00200	<b>0.00208</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000193	0.000500	<b>0.000734</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2006h	E200.7	0.401	10.0	<b>92.8</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.00154	0.00200	<b>0.0142</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000434	0.00400	<b>0.0135</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000692	0.00200	<b>0.0630</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1935h	E200.7	0.0767	0.100	<b>28.6</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000264	0.00200	<b>0.185</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1935h	E200.7	0.0294	1.00	<b>17.2</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.00153	0.00200	<b>0.942</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 936h	E245.1	0.00000892	0.000150	0.0000633	J
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000206	0.00200	0.00158	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000754	0.00200	<b>0.0182</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1935h	E200.7	0.247	1.00	<b>7.53</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000634	0.00200	0.000971	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000244	0.00200	0.00134	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1935h	E200.7	0.0330	1.00	<b>27.0</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.0000242	0.00200	0.000302	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.000438	0.00440	<b>0.0416</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2026h	E200.8	0.00476	0.00500	<b>0.172</b>	

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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-007  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1800h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1938h	E200.7	0.0237	0.100	<b>24.6</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000366	0.00200	0.000502	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000920	0.00200	<b>0.0100</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000538	0.00200	<b>0.532</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000288	0.00200	0.00180	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000193	0.000500	<b>0.000680</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2008h	E200.7	0.401	10.0	<b>86.2</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.00154	0.00200	<b>0.0137</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000434	0.00400	<b>0.0124</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000692	0.00200	<b>0.0476</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1938h	E200.7	0.0767	0.100	<b>24.1</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000264	0.00200	<b>0.111</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1938h	E200.7	0.0294	1.00	<b>15.8</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.00153	0.00200	<b>0.870</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 938h	E245.1	0.00000892	0.000150	0.0000450	J
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000206	0.00200	0.00133	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000754	0.00200	<b>0.0168</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1938h	E200.7	0.247	1.00	<b>7.04</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000634	0.00200	0.000727	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000244	0.00200	0.000794	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1938h	E200.7	0.0330	1.00	<b>26.1</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.0000242	0.00200	0.000247	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.000438	0.00440	<b>0.0378</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2029h	E200.8	0.00476	0.00500	<b>0.138</b>	

*B - This analyte was also detected in the method blank below the PQL.*

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-008  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 2102h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### TOTAL METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 1940h	E200.7	0.0237	0.100	<b>31.0</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000366	0.00200	0.000416	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000920	0.00200	<b>0.00959</b>	
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000538	0.00200	<b>0.554</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000288	0.00200	<b>0.00225</b>	
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000193	0.000500	<b>0.000632</b>	
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2010h	E200.7	0.401	10.0	<b>78.8</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.00154	0.00200	<b>0.0155</b>	
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000434	0.00400	<b>0.0147</b>	
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000692	0.00200	<b>0.0497</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 1940h	E200.7	0.0767	0.100	<b>26.5</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000264	0.00200	<b>0.0835</b>	
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 1940h	E200.7	0.0294	1.00	<b>15.3</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.00153	0.00200	<b>0.887</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 940h	E245.1	0.0000892	0.000150	0.0000483	J
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000206	0.00200	0.00101	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000754	0.00200	<b>0.0184</b>	
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 1940h	E200.7	0.247	1.00	<b>7.18</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000634	0.00200	0.000703	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000244	0.00200	0.000574	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 1940h	E200.7	0.0330	1.00	<b>29.5</b>	
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.0000242	0.00200	0.000313	J
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.000438	0.00440	<b>0.0415</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 2033h	E200.8	0.00476	0.00500	<b>0.137</b>	

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*



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QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-001  
**Client Sample ID:** San Juan R @ Mexican Hat US163 Xing (4953000)  
**Collection Date:** 8/8/2015 1740h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2032h	E200.7	0.0237	0.100	<b>0.264</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000366	0.00200	0.00138	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000920	0.00200	0.00157	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000538	0.00200	<b>0.308</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000288	0.00200	0.0000435	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2101h	E200.7	0.401	10.0	<b>49.2</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000434	0.00400	0.000127	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000692	0.00200	<b>0.00395</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2032h	E200.7	0.0767	0.100	<b>0.144</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2032h	E200.7	0.0294	1.00	<b>5.75</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.00153	0.00200	<b>0.00281</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 854h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000206	0.00200	<b>0.00315</b>	
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000754	0.00200	0.000885	J
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2032h	E200.7	0.247	1.00	<b>4.15</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000634	0.00200	0.000924	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000244	0.00200	0.0000956	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2101h	E200.7	0.330	10.0	<b>62.6</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.000438	0.00440	0.00313	J
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1858h	E200.8	0.00476	0.00500	<b>0.0142</b>	

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-002  
**Client Sample ID:** San Juan R @ Sand Island (4953250)  
**Collection Date:** 8/8/2015 1619h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2043h	E200.7	0.0237	0.100	<b>0.214</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000366	0.00200	0.00138	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000920	0.00200	0.00103	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000538	0.00200	<b>0.294</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000288	0.00200	0.0000574	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2107h	E200.7	0.401	10.0	<b>73.7</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000434	0.00400	0.000124	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000692	0.00200	<b>0.00386</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2043h	E200.7	0.0767	0.100	<b>0.104</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2043h	E200.7	0.0294	1.00	<b>9.24</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.00153	0.00200	<b>0.00255</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 856h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000206	0.00200	<b>0.00330</b>	
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000754	0.00200	0.00101	J
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2043h	E200.7	0.247	1.00	<b>4.11</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000634	0.00200	0.00143	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000244	0.00200	0.000123	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2107h	E200.7	0.330	10.0	<b>51.2</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.000438	0.00440	0.00222	J
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1914h	E200.8	0.00476	0.00500	<b>0.0190</b>	

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-003  
**Client Sample ID:** San Juan R @ Town of Montezuma (4953990)  
**Collection Date:** 8/8/2015 1454h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2045h	E200.7	0.0237	0.100	<b>0.136</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000366	0.00200	0.000747	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000920	0.00200	0.00106	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000538	0.00200	<b>0.223</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000288	0.00200	0.0000395	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2110h	E200.7	0.401	10.0	<b>71.5</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000434	0.00400	0.000130	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000692	0.00200	<b>0.00272</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2045h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2045h	E200.7	0.0294	1.00	<b>9.92</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 848h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000206	0.00200	<b>0.00262</b>	
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000754	0.00200	0.000804	J
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2045h	E200.7	0.247	1.00	<b>3.84</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000634	0.00200	0.00111	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000244	0.00200	0.0000412	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2110h	E200.7	0.330	10.0	<b>43.5</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.000438	0.00440	0.00254	J
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1917h	E200.8	0.00476	0.00500	<b>0.0210</b>	

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-004  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/8/2015 1323h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2047h	E200.7	0.0237	0.100	<b>0.217</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000366	0.00200	0.000524	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000920	0.00200	0.00134	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000538	0.00200	<b>0.222</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000288	0.00200	0.0000369	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2112h	E200.7	0.401	10.0	<b>51.5</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000434	0.00400	0.000127	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000692	0.00200	<b>0.00224</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2047h	E200.7	0.0767	0.100	0.0958	J
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2047h	E200.7	0.0294	1.00	<b>7.85</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.00153	0.00200	<b>0.00294</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 902h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000206	0.00200	0.00187	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2047h	E200.7	0.247	1.00	<b>2.96</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000634	0.00200	0.000722	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2047h	E200.7	0.0330	1.00	<b>32.2</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.000438	0.00440	<b>0.00486</b>	
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1920h	E200.8	0.00476	0.00500	<b>0.0153</b>	

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-005  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1202h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2057h	E200.7	0.0237	0.100	<b>0.258</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000366	0.00200	0.000341	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000920	0.00200	0.000628	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000538	0.00200	<b>0.274</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2114h	E200.7	0.401	10.0	<b>50.6</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000434	0.00400	0.0000817	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000692	0.00200	<b>0.00248</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2057h	E200.7	0.0767	0.100	<b>0.119</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2057h	E200.7	0.0294	1.00	<b>6.86</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.00153	0.00200	<b>0.00269</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 904h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000206	0.00200	<b>0.00201</b>	
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2057h	E200.7	0.247	1.00	<b>2.61</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000634	0.00200	0.000563	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000244	0.00200	0.0000257	J
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2057h	E200.7	0.0330	1.00	<b>28.5</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.000438	0.00440	0.00176	J
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1933h	E200.8	0.00476	0.00500	<b>0.0185</b>	

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-008  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 2102h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

### DISSOLVED METALS

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Aluminum	7429-90-5	mg/L	8/10/2015 1515h	8/10/2015 2059h	E200.7	0.0237	0.100	<b>0.329</b>	
Antimony	7440-36-0	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000366	0.00200	0.000347	JB
Arsenic	7440-38-2	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000920	0.00200	0.000946	J
Barium	7440-39-3	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000538	0.00200	<b>0.341</b>	
Beryllium	7440-41-7	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000288	0.00200	0.0000356	J
Cadmium	7440-43-9	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/10/2015 1515h	8/10/2015 2116h	E200.7	0.401	10.0	<b>46.0</b>	
Chromium	7440-47-3	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000434	0.00400	0.000139	J
Copper	7440-50-8	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000692	0.00200	<b>0.00347</b>	
Iron	7439-89-6	mg/L	8/10/2015 1515h	8/10/2015 2059h	E200.7	0.0767	0.100	<b>0.198</b>	
Lead	7439-92-1	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000264	0.00200	0.000274	J
Magnesium	7439-95-4	mg/L	8/10/2015 1515h	8/10/2015 2059h	E200.7	0.0294	1.00	<b>6.30</b>	
Manganese	7439-96-5	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.00153	0.00200	<b>0.00414</b>	
Mercury	7439-97-6	mg/L	8/10/2015 1540h	8/11/2015 906h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000206	0.00200	0.00194	J
Nickel	7440-02-0	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/10/2015 1515h	8/10/2015 2059h	E200.7	0.247	1.00	<b>2.38</b>	
Selenium	7782-49-2	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000634	0.00200	0.000535	J
Silver	7440-22-4	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/10/2015 1515h	8/10/2015 2059h	E200.7	0.0330	1.00	<b>30.0</b>	B
Thallium	7440-28-0	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.000438	0.00440	0.00207	J
Zinc	7440-66-6	mg/L	8/10/2015 1515h	8/10/2015 1937h	E200.8	0.00476	0.00500	<b>0.0154</b>	

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 Laboratory Director

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 QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-001  
**Client Sample ID:** San Juan R @ Mexican Hat US163 Xing (4953000)  
**Collection Date:** 8/8/2015 1740h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>118</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>118</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/10/2015 2300h	E300.0	0.0751	1.00	<b>10.9</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>604</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>544</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>146</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1801h	E353.2	0.00833	0.0100	<b>0.488</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.15</b>	H
Sulfate	14808-79-8	mg/L		8/10/2015 2300h	E300.0	0.211	7.50	<b>154</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>730</b>	@
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>8,050</b>	@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

B - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

H - Sample was received outside of the holding time.

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Laboratory Director

Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-002  
**Client Sample ID:** San Juan R @ Sand Island (4953250)  
**Collection Date:** 8/8/2015 1619h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>112</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>112</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/10/2015 2351h	E300.0	0.0751	1.00	<b>11.1</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>748</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>768</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>222</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1805h	E353.2	0.00833	0.0100	<b>0.645</b>	<sup>3</sup>
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.09</b>	H
Sulfate	14808-79-8	mg/L		8/10/2015 2351h	E300.0	0.211	7.50	<b>226</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>640</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>5,540</b>	

<sup>3</sup> - Matrix spike recoveries and/or high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.

B - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

H - Sample was received outside of the holding time.

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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-003  
**Client Sample ID:** San Juan R @ Town of Montezuma (4953990)  
**Collection Date:** 8/8/2015 1454h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>110</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>110</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 008h	E300.0	0.0751	1.00	<b>11.1</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>701</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>1,220</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>219</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1809h	E353.2	0.00833	0.0100	<b>0.421</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>7.95</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 008h	E300.0	0.211	7.50	<b>195</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>610</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>7,690</b>	

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Jose Rocha  
QA Officer

## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-004  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/8/2015 1323h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>128</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>128</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 025h	E300.0	0.0751	1.00	<b>10.9</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>522</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>1,070</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>161</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1810h	E353.2	0.00833	0.0100	<b>0.262</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.13</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 025h	E300.0	0.211	7.50	<b>111</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>460</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>6,820</b>	

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-005  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1202h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>87.9</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>87.9</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 042h	E300.0	0.0751	1.00	<b>8.45</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>506</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>353</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>155</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1812h	E353.2	0.00833	0.0100	<b>0.238</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.15</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 042h	E300.0	0.211	7.50	<b>120</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>400</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>2,940</b>	

*B - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.*

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-006  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1505h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>89.6</b>	
Bicarbonate (as CaCO3)		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>89.6</b>	
Carbonate (as CaCO3)		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 058h	E300.0	0.0751	1.00	<b>8.44</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>457</b>	B
Hardness (as CaCO3)		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>303</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1813h	E353.2	0.00833	0.0100	<b>0.290</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.17</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 058h	E300.0	0.211	7.50	<b>112</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>350</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>2,690</b>	

*B - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.*

*H - Sample was received outside of the holding time.*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-007  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 1800h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>94.6</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>94.6</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 150h	E300.0	0.0751	1.00	<b>8.32</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>492</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>280</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1821h	E353.2	0.00833	0.0100	<b>0.275</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.18</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 150h	E300.0	0.211	7.50	<b>99.1</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>410</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>2,170</b>	

*B - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.*

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## INORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality **Contact:** Lenora Sullivan  
**Project:** Gold King Mine - San Juan River Sampling  
**Lab Sample ID:** 1508160-008  
**Client Sample ID:** San Juan R @ US160 Xing in CO (4954000)  
**Collection Date:** 8/9/2015 2102h  
**Received Date:** 8/10/2015 1255h

### Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>101</b>	
Bicarbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	<b>101</b>	
Carbonate (as CaCO <sub>3</sub> )		mg/L		8/11/2015 640h	SM2320B	1.86	10.0	< 10.0	U
Chloride	16887-00-6	mg/L		8/11/2015 208h	E300.0	0.0751	1.00	<b>9.99</b>	
Conductivity		µmhos/cm		8/11/2015 620h	SM2510B	0.436	2.00	<b>478</b>	B
Hardness (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>260</b>	
Hardness, Dissolved (as CaCO <sub>3</sub> )		mg/L		8/11/2015 828h	SM2340B	10.0	10.0	<b>141</b>	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/10/2015 1822h	E353.2	0.00833	0.0100	<b>0.270</b>	
pH @ 25° C		pH Units		8/10/2015 1953h	SM4500-H+B	1.00	1.00	<b>8.19</b>	H
Sulfate	14808-79-8	mg/L		8/11/2015 208h	E300.0	0.211	7.50	<b>97.3</b>	
Total Dissolved Solids		mg/L		8/10/2015 1420h	SM2540C	30.6	50.0	<b>430</b>	
Total Suspended Solids	TSS	mg/L		8/10/2015 1515h	SM2540D	70.8	75.0	<b>2,130</b>	

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*H - Sample was received outside of the holding time.*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-38452	Date Analyzed:	08/10/2015 2030h											
Test Code:	200.7-DIS	Date Prepared:	08/10/2015 1515h										
Aluminum	0.993	mg/L	E200.7	0.0237	0.100	1.000	0	99.3	85 - 115				
Calcium	10.0	mg/L	E200.7	0.0401	1.00	10.00	0	100	85 - 115				
Iron	0.950	mg/L	E200.7	0.0767	0.100	1.000	0	95.0	85 - 115				
Magnesium	9.78	mg/L	E200.7	0.0294	1.00	10.00	0	97.8	85 - 115				
Potassium	9.90	mg/L	E200.7	0.247	1.00	10.00	0	99.0	85 - 115				
Sodium	10.1	mg/L	E200.7	0.0330	1.00	10.00	0	101	85 - 115				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38452	Date Analyzed:	08/10/2015	2028h										
Test Code:	200.7-DIS	Date Prepared:	08/10/2015	1515h									
Aluminum	< 0.100	mg/L	E200.7	0.0237	0.100								U
Calcium	< 1.00	mg/L	E200.7	0.0401	1.00								U
Iron	< 0.100	mg/L	E200.7	0.0767	0.100								U
Magnesium	< 1.00	mg/L	E200.7	0.0294	1.00								U
Potassium	< 1.00	mg/L	E200.7	0.247	1.00								U
Sodium	0.0563	mg/L	E200.7	0.0330	1.00								JB

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1508160-001CMS</b>													
Date Analyzed:		08/10/2015 2039h											
Test Code:		200.7-DIS											
Date Prepared:		08/10/2015 1515h											
Aluminum	1.30	mg/L	E200.7	0.0237	0.100	1.000	0.264	103	70 - 130				
Iron	1.09	mg/L	E200.7	0.0767	0.100	1.000	0.144	94.9	70 - 130				
Magnesium	15.4	mg/L	E200.7	0.0294	1.00	10.00	5.75	97.0	70 - 130				
Potassium	14.0	mg/L	E200.7	0.247	1.00	10.00	4.15	98.6	70 - 130				
<b>Lab Sample ID: 1508160-001CMS</b>													
Date Analyzed:		08/10/2015 2103h											
Test Code:		200.7-DIS											
Date Prepared:		08/10/2015 1515h											
Calcium	56.9	mg/L	E200.7	0.401	10.0	10.00	49.2	77.6	70 - 130				
Sodium	70.1	mg/L	E200.7	0.330	10.0	10.00	62.6	74.7	70 - 130				





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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001CMSD	Date Analyzed:	08/10/2015 2041h											
Test Code:	200.7-DIS	Date Prepared:	08/10/2015 1515h										
Aluminum	1.30	mg/L	E200.7	0.0237	0.100	1.000	0.264	103	70 - 130	1.3	0.143	20	
Iron	1.10	mg/L	E200.7	0.0767	0.100	1.000	0.144	96.0	70 - 130	1.09	1.01	20	
Magnesium	15.4	mg/L	E200.7	0.0294	1.00	10.00	5.75	96.2	70 - 130	15.4	0.526	20	
Potassium	13.9	mg/L	E200.7	0.247	1.00	10.00	4.15	97.9	70 - 130	14	0.487	20	
<b>Lab Sample ID:</b> 1508160-001CMSD	Date Analyzed:	08/10/2015 2105h											
Test Code:	200.7-DIS	Date Prepared:	08/10/2015 1515h										
Calcium	57.9	mg/L	E200.7	0.401	10.0	10.00	49.2	87.3	70 - 130	56.9	1.69	20	
Sodium	70.5	mg/L	E200.7	0.330	10.0	10.00	62.6	78.9	70 - 130	70.1	0.587	20	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-38454	Date Analyzed:	08/10/2015 1906h											
Test Code:	200.7-W	Date Prepared:	08/10/2015 1515h										
Aluminum	0.992	mg/L	E200.7	0.0237	0.100	1.000	0	99.2	85 - 115				
Calcium	10.0	mg/L	E200.7	0.0401	1.00	10.00	0	100	85 - 115				
Iron	0.974	mg/L	E200.7	0.0767	0.100	1.000	0	97.4	85 - 115				
Magnesium	9.92	mg/L	E200.7	0.0294	1.00	10.00	0	99.2	85 - 115				
Potassium	9.99	mg/L	E200.7	0.247	1.00	10.00	0	99.9	85 - 115				
Sodium	10.2	mg/L	E200.7	0.0330	1.00	10.00	0	102	85 - 115				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38454	Date Analyzed:	08/10/2015	1904h										
Test Code: 200.7-W	Date Prepared:	08/10/2015	1515h										
Aluminum	< 0.100	mg/L	E200.7	0.0237	0.100								U
Calcium	< 1.00	mg/L	E200.7	0.0401	1.00								U
Iron	< 0.100	mg/L	E200.7	0.0767	0.100								U
Magnesium	< 1.00	mg/L	E200.7	0.0294	1.00								U
Potassium	< 1.00	mg/L	E200.7	0.247	1.00								U
Sodium	< 1.00	mg/L	E200.7	0.0330	1.00								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001BMS	Date Analyzed:	08/10/2015 1915h											
Test Code:	200.7-W	Date Prepared:	08/10/2015 1515h										
Iron	46.8	mg/L	E200.7	0.0767	0.100	1.000	51.9	-512	70 - 130				2
Magnesium	39.7	mg/L	E200.7	0.0294	1.00	10.00	30.6	91.5	70 - 130				
Potassium	23.4	mg/L	E200.7	0.247	1.00	10.00	14.4	89.4	70 - 130				

<sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

<b>Lab Sample ID:</b> 1508160-001BMS	Date Analyzed:	08/10/2015 1953h											
Test Code:	200.7-W	Date Prepared:	08/10/2015 1515h										
Aluminum	63.5	mg/L	E200.7	0.237	1.00	1.000	63.4	18.5	70 - 130				2
Calcium	178	mg/L	E200.7	0.401	10.0	10.00	167	102	70 - 130				
Sodium	74.3	mg/L	E200.7	0.330	10.0	10.00	63.9	104	70 - 130				

<sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001BMSD	Date Analyzed:	08/10/2015 1917h											
Test Code:	200.7-W	Date Prepared:	08/10/2015 1515h										
Iron	52.3	mg/L	E200.7	0.0767	0.100	1.000	51.9	32.4	70 - 130	46.8	11.0	20	<sup>2</sup>
Magnesium	39.9	mg/L	E200.7	0.0294	1.00	10.00	30.6	93.2	70 - 130	39.7	0.439	20	
Potassium	24.0	mg/L	E200.7	0.247	1.00	10.00	14.4	95.4	70 - 130	23.4	2.52	20	

<sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

<b>Lab Sample ID:</b> 1508160-001BMSD	Date Analyzed:	08/10/2015 1955h											
Test Code:	200.7-W	Date Prepared:	08/10/2015 1515h										
Aluminum	66.6	mg/L	E200.7	0.237	1.00	1.000	63.4	325	70 - 130	63.5	4.71	20	<sup>2</sup>
Calcium	175	mg/L	E200.7	0.401	10.0	10.00	167	74.2	70 - 130	178	1.56	20	
Sodium	72.5	mg/L	E200.7	0.330	10.0	10.00	63.9	85.9	70 - 130	74.3	2.50	20	

<sup>2</sup> - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Contact:** Lenora Sullivan

**Lab Set ID:** 1508160

**Dept:** ME

**Project:** Gold King Mine - San Juan River Sampling

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-38453	Date Analyzed: 08/10/2015 1854h												
Test Code: 200.8-DIS	Date Prepared: 08/10/2015 1515h												
Antimony	0.172	mg/L	E200.8	0.0000366	0.00200	0.2000	0	86.0	85 - 115				
Arsenic	0.204	mg/L	E200.8	0.0000920	0.00200	0.2000	0	102	85 - 115				
Barium	0.194	mg/L	E200.8	0.000538	0.00200	0.2000	0	97.2	85 - 115				
Beryllium	0.221	mg/L	E200.8	0.0000288	0.00200	0.2000	0	111	85 - 115				
Cadmium	0.199	mg/L	E200.8	0.000193	0.000500	0.2000	0	99.5	85 - 115				
Chromium	0.208	mg/L	E200.8	0.00154	0.00200	0.2000	0	104	85 - 115				
Cobalt	0.205	mg/L	E200.8	0.0000434	0.00400	0.2000	0	103	85 - 115				
Copper	0.208	mg/L	E200.8	0.000692	0.00200	0.2000	0	104	85 - 115				
Lead	0.199	mg/L	E200.8	0.000264	0.00200	0.2000	0	99.4	85 - 115				
Manganese	0.212	mg/L	E200.8	0.00153	0.00200	0.2000	0	106	85 - 115				
Molybdenum	0.200	mg/L	E200.8	0.000206	0.00200	0.2000	0	99.9	85 - 115				
Nickel	0.204	mg/L	E200.8	0.000754	0.00200	0.2000	0	102	85 - 115				
Selenium	0.195	mg/L	E200.8	0.0000634	0.00200	0.2000	0	97.3	85 - 115				
Silver	0.194	mg/L	E200.8	0.0000244	0.00200	0.2000	0	96.9	85 - 115				
Thallium	0.195	mg/L	E200.8	0.0000242	0.00200	0.2000	0	97.7	85 - 115				
Vanadium	0.210	mg/L	E200.8	0.000438	0.00440	0.2000	0	105	85 - 115				
Zinc	1.04	mg/L	E200.8	0.00476	0.00500	1.000	0	104	85 - 115				





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Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38453	Date Analyzed:	08/10/2015	1851h										
Test Code:	200.8-DIS	Date Prepared:	08/10/2015	1515h									
Antimony	0.000222	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	mg/L	E200.8	0.000538	0.00200								U
Beryllium	< 0.00200	mg/L	E200.8	0.0000288	0.00200								U
Cadmium	< 0.000500	mg/L	E200.8	0.000193	0.000500								U
Chromium	< 0.00200	mg/L	E200.8	0.00154	0.00200								U
Cobalt	< 0.00400	mg/L	E200.8	0.0000434	0.00400								U
Copper	< 0.00200	mg/L	E200.8	0.000692	0.00200								U
Lead	< 0.00200	mg/L	E200.8	0.000264	0.00200								U
Manganese	< 0.00200	mg/L	E200.8	0.00153	0.00200								U
Molybdenum	< 0.00200	mg/L	E200.8	0.000206	0.00200								U
Nickel	< 0.00200	mg/L	E200.8	0.000754	0.00200								U
Selenium	< 0.00200	mg/L	E200.8	0.0000634	0.00200								U
Silver	< 0.00200	mg/L	E200.8	0.0000244	0.00200								U
Thallium	< 0.00200	mg/L	E200.8	0.0000242	0.00200								U
Vanadium	< 0.00440	mg/L	E200.8	0.000438	0.00440								U
Zinc	< 0.00500	mg/L	E200.8	0.00476	0.00500								U

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001CMS	Date Analyzed:	08/10/2015 1907h											
Test Code: 200.8-DIS	Date Prepared:	08/10/2015 1515h											
Antimony	0.182	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00138	90.4	75 - 125				
Arsenic	0.209	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00157	104	75 - 125				
Barium	0.524	mg/L	E200.8	0.000538	0.00200	0.2000	0.308	108	75 - 125				
Beryllium	0.224	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000435	112	75 - 125				
Cadmium	0.200	mg/L	E200.8	0.000193	0.000500	0.2000	0	100	75 - 125				
Chromium	0.209	mg/L	E200.8	0.00154	0.00200	0.2000	0	105	75 - 125				
Cobalt	0.207	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000127	103	75 - 125				
Copper	0.214	mg/L	E200.8	0.000692	0.00200	0.2000	0.00395	105	75 - 125				
Lead	0.201	mg/L	E200.8	0.000264	0.00200	0.2000	0	101	75 - 125				
Manganese	0.216	mg/L	E200.8	0.00153	0.00200	0.2000	0.00281	107	75 - 125				
Molybdenum	0.210	mg/L	E200.8	0.000206	0.00200	0.2000	0.00315	103	75 - 125				
Nickel	0.206	mg/L	E200.8	0.000754	0.00200	0.2000	0.000885	102	75 - 125				
Selenium	0.198	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000924	98.7	75 - 125				
Silver	0.195	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000956	97.4	75 - 125				
Thallium	0.197	mg/L	E200.8	0.0000242	0.00200	0.2000	0	98.5	75 - 125				
Vanadium	0.214	mg/L	E200.8	0.000438	0.00440	0.2000	0.00313	105	75 - 125				
Zinc	1.07	mg/L	E200.8	0.00476	0.00500	1.000	0.0142	106	75 - 125				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001CMSD	Date Analyzed:	08/10/2015 1911h											
Test Code:	200.8-DIS	Date Prepared:	08/10/2015 1515h										
Antimony	0.187	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00138	92.7	75 - 125	0.182	2.57	20	
Arsenic	0.213	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00157	106	75 - 125	0.209	2.07	20	
Barium	0.528	mg/L	E200.8	0.000538	0.00200	0.2000	0.308	110	75 - 125	0.524	0.776	20	
Beryllium	0.225	mg/L	E200.8	0.0000288	0.00200	0.2000	0.0000435	112	75 - 125	0.224	0.581	20	
Cadmium	0.203	mg/L	E200.8	0.000193	0.000500	0.2000	0	101	75 - 125	0.2	1.35	20	
Chromium	0.214	mg/L	E200.8	0.00154	0.00200	0.2000	0	107	75 - 125	0.209	2.14	20	
Cobalt	0.210	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000127	105	75 - 125	0.207	1.47	20	
Copper	0.219	mg/L	E200.8	0.000692	0.00200	0.2000	0.00395	108	75 - 125	0.214	2.33	20	
Lead	0.203	mg/L	E200.8	0.000264	0.00200	0.2000	0	102	75 - 125	0.201	1.08	20	
Manganese	0.219	mg/L	E200.8	0.00153	0.00200	0.2000	0.00281	108	75 - 125	0.216	1.57	20	
Molybdenum	0.211	mg/L	E200.8	0.000206	0.00200	0.2000	0.00315	104	75 - 125	0.21	0.557	20	
Nickel	0.209	mg/L	E200.8	0.000754	0.00200	0.2000	0.000885	104	75 - 125	0.206	1.53	20	
Selenium	0.201	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000924	99.8	75 - 125	0.198	1.13	20	
Silver	0.197	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000956	98.5	75 - 125	0.195	1.14	20	
Thallium	0.199	mg/L	E200.8	0.0000242	0.00200	0.2000	0	99.3	75 - 125	0.197	0.794	20	
Vanadium	0.217	mg/L	E200.8	0.000438	0.00440	0.2000	0.00313	107	75 - 125	0.214	1.64	20	
Zinc	1.09	mg/L	E200.8	0.00476	0.00500	1.000	0.0142	108	75 - 125	1.07	1.79	20	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual	
<b>Lab Sample ID:</b> LCS-38455	Date Analyzed:		08/10/2015 1943h											
Test Code:	200.8-W	Date Prepared:		08/10/2015 1515h										
Arsenic	0.208	mg/L	E200.8	0.0000920	0.00200	0.2000	0	104	85 - 115					
Barium	0.191	mg/L	E200.8	0.000538	0.00200	0.2000	0	95.6	85 - 115					
Beryllium	0.226	mg/L	E200.8	0.0000288	0.00200	0.2000	0	113	85 - 115					
Cadmium	0.198	mg/L	E200.8	0.000193	0.000500	0.2000	0	98.9	85 - 115					
Chromium	0.204	mg/L	E200.8	0.00154	0.00200	0.2000	0	102	85 - 115					
Cobalt	0.201	mg/L	E200.8	0.0000434	0.00400	0.2000	0	100	85 - 115					
Copper	0.204	mg/L	E200.8	0.000692	0.00200	0.2000	0	102	85 - 115					
Lead	0.194	mg/L	E200.8	0.000264	0.00200	0.2000	0	97.1	85 - 115					
Manganese	0.210	mg/L	E200.8	0.00153	0.00200	0.2000	0	105	85 - 115					
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0	95.9	85 - 115					
Nickel	0.200	mg/L	E200.8	0.000754	0.00200	0.2000	0	100	85 - 115					
Selenium	0.203	mg/L	E200.8	0.0000634	0.00200	0.2000	0	101	85 - 115					
Silver	0.188	mg/L	E200.8	0.0000244	0.00200	0.2000	0	94.1	85 - 115					
Thallium	0.192	mg/L	E200.8	0.0000242	0.00200	0.2000	0	95.8	85 - 115					
Vanadium	0.204	mg/L	E200.8	0.000438	0.00440	0.2000	0	102	85 - 115					
Zinc	1.05	mg/L	E200.8	0.00476	0.00500	1.000	0	105	85 - 115					

<b>Lab Sample ID:</b> LCS-38455	Date Analyzed:		08/11/2015 930h											
Test Code:	200.8-W	Date Prepared:		08/10/2015 1515h										
Antimony	0.174	mg/L	E200.8	0.0000366	0.00200	0.2000	0	87.1	85 - 115					



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Kyle F. Gross  
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Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38455	Date Analyzed:	08/10/2015	1940h										
Test Code:	200.8-W	Date Prepared:	08/10/2015	1515h									
Antimony	0.0000431	mg/L	E200.8	0.0000366	0.00200								JB
Arsenic	< 0.00200	mg/L	E200.8	0.0000920	0.00200								U
Barium	< 0.00200	mg/L	E200.8	0.000538	0.00200								U
Beryllium	< 0.00200	mg/L	E200.8	0.0000288	0.00200								U
Cadmium	< 0.000500	mg/L	E200.8	0.000193	0.000500								U
Chromium	< 0.00200	mg/L	E200.8	0.00154	0.00200								U
Cobalt	< 0.00400	mg/L	E200.8	0.0000434	0.00400								U
Copper	< 0.00200	mg/L	E200.8	0.000692	0.00200								U
Lead	< 0.00200	mg/L	E200.8	0.000264	0.00200								U
Manganese	< 0.00200	mg/L	E200.8	0.00153	0.00200								U
Molybdenum	< 0.00200	mg/L	E200.8	0.000206	0.00200								U
Nickel	< 0.00200	mg/L	E200.8	0.000754	0.00200								U
Selenium	< 0.00200	mg/L	E200.8	0.0000634	0.00200								U
Silver	< 0.00200	mg/L	E200.8	0.0000244	0.00200								U
Thallium	< 0.00200	mg/L	E200.8	0.0000242	0.00200								U
Vanadium	< 0.00440	mg/L	E200.8	0.000438	0.00440								U
Zinc	< 0.00500	mg/L	E200.8	0.00476	0.00500								U

*B - This analyte was also detected in the method blank below the PQL.*

*J - Estimated value between the MDL and the reporting limit (PQL).*

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001BMS	Date Analyzed:	08/10/2015 1956h											
Test Code:	200.8-W	Date Prepared:	08/10/2015 1515h										
Antimony	0.0128	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00131	5.74	75 - 125				1
Arsenic	0.180	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0163	82.1	75 - 125				
Barium	1.73	mg/L	E200.8	0.000538	0.00200	0.2000	1.54	95.0	75 - 125				
Beryllium	0.210	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00723	101	75 - 125				
Cadmium	0.199	mg/L	E200.8	0.000193	0.000500	0.2000	0.0015	98.6	75 - 125				
Chromium	0.218	mg/L	E200.8	0.00154	0.00200	0.2000	0.0294	94.4	75 - 125				
Cobalt	0.237	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0415	97.8	75 - 125				
Copper	0.288	mg/L	E200.8	0.000692	0.00200	0.2000	0.103	92.3	75 - 125				
Lead	0.277	mg/L	E200.8	0.000264	0.00200	0.2000	0.0867	95.2	75 - 125				
Molybdenum	0.0934	mg/L	E200.8	0.000206	0.00200	0.2000	0.0013	46.1	75 - 125				1
Nickel	0.243	mg/L	E200.8	0.000754	0.00200	0.2000	0.0478	97.4	75 - 125				
Selenium	0.157	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00143	78.0	75 - 125				
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.00056	95.1	75 - 125				
Thallium	0.177	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000838	87.9	75 - 125				
Vanadium	0.254	mg/L	E200.8	0.000438	0.00440	0.2000	0.0705	91.9	75 - 125				
Zinc	1.24	mg/L	E200.8	0.00476	0.00500	1.000	0.261	98.1	75 - 125				

<sup>1</sup> - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

<b>Lab Sample ID:</b> 1508160-001BMS	Date Analyzed:	08/11/2015 936h											
Test Code:	200.8-W	Date Prepared:	08/10/2015 1515h										
Manganese	2.99	mg/L	E200.8	0.00764	0.0100	0.2000	2.8	99.2	75 - 125				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual	
<b>Lab Sample ID:</b> 1508160-001BMSD	Date Analyzed:	08/10/2015 2000h												
Test Code:	200.8-W	Date Prepared:	08/10/2015 1515h											
Antimony	0.0119	mg/L	E200.8	0.0000366	0.00200	0.2000	0.00131	5.27	75 - 125	0.0128	7.60	20	<sup>1</sup>	
Arsenic	0.180	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0163	81.7	75 - 125	0.18	0.361	20		
Barium	1.75	mg/L	E200.8	0.000538	0.00200	0.2000	1.54	106	75 - 125	1.73	1.21	20		
Beryllium	0.207	mg/L	E200.8	0.0000288	0.00200	0.2000	0.00723	99.9	75 - 125	0.21	1.35	20		
Cadmium	0.197	mg/L	E200.8	0.000193	0.000500	0.2000	0.0015	97.9	75 - 125	0.199	0.702	20		
Chromium	0.226	mg/L	E200.8	0.00154	0.00200	0.2000	0.0294	98.4	75 - 125	0.218	3.57	20		
Cobalt	0.239	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0415	98.8	75 - 125	0.237	0.808	20		
Copper	0.296	mg/L	E200.8	0.000692	0.00200	0.2000	0.103	96.3	75 - 125	0.288	2.74	20		
Lead	0.279	mg/L	E200.8	0.000264	0.00200	0.2000	0.0867	96.0	75 - 125	0.277	0.551	20		
Molybdenum	0.0907	mg/L	E200.8	0.000206	0.00200	0.2000	0.0013	44.7	75 - 125	0.0934	3.00	20	<sup>1</sup>	
Nickel	0.246	mg/L	E200.8	0.000754	0.00200	0.2000	0.0478	98.9	75 - 125	0.243	1.20	20		
Selenium	0.157	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00143	78.0	75 - 125	0.157	0.00167	20		
Silver	0.191	mg/L	E200.8	0.0000244	0.00200	0.2000	0.00056	95.4	75 - 125	0.191	0.311	20		
Thallium	0.177	mg/L	E200.8	0.0000242	0.00200	0.2000	0.000838	88.1	75 - 125	0.177	0.249	20		
Vanadium	0.257	mg/L	E200.8	0.000438	0.00440	0.2000	0.0705	93.2	75 - 125	0.254	1.06	20		
Zinc	1.24	mg/L	E200.8	0.00476	0.00500	1.000	0.261	98.2	75 - 125	1.24	0.109	20		

<sup>1</sup> - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

<b>Lab Sample ID:</b> 1508160-001BMSD	Date Analyzed:	08/11/2015 940h												
Test Code:	200.8-W	Date Prepared:	08/10/2015 1515h											
Manganese	3.04	mg/L	E200.8	0.00764	0.0100	0.2000	2.8	120	75 - 125	2.99	1.35	20		





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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-38461	Date Analyzed:	08/11/2015	913h										
Test Code: HG-DW-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00339	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38461	Date Analyzed:	08/11/2015	908h										
Test Code: HG-DW-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-002BMS	Date Analyzed:	08/11/2015	920h										
Test Code: HG-DW-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00354	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000158	102	80 - 120				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-002BMSD	Date Analyzed:	08/11/2015	922h										
Test Code: HG-DW-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00353	mg/L	E245.1	0.00000892	0.000150	0.003330	0.000158	101	80 - 120	0.00354	0.330	20	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-38460	Date Analyzed:	08/11/2015	842h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-38460	Date Analyzed:	08/11/2015	840h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** ME

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-003CMS	Date Analyzed:	08/11/2015	850h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	101	85 - 115				





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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-003CMSD	Date Analyzed:	08/11/2015	852h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/10/2015	1540h										
Mercury	0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	102	85 - 115	0.00338	0.0986	20	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81446	Date Analyzed: 08/10/2015 2244h												
Test Code: 300.0-W													
Chloride	4.95	mg/L	E300.0	0.00751	0.100	5.000	0	98.9	90 - 110				
Sulfate	4.92	mg/L	E300.0	0.0211	0.750	5.000	0	98.4	90 - 110				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81446	Date Analyzed: 08/10/2015 2227h												
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.00751	0.100								U
Sulfate	< 0.750	mg/L	E300.0	0.0211	0.750								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

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**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001AMS	Date Analyzed: 08/10/2015 2317h												
Test Code: 300.0-W													
Chloride	60.9	mg/L	E300.0	0.0751	1.00	50.00	10.9	100	90 - 110				
Sulfate	206	mg/L	E300.0	0.211	7.50	50.00	154	105	90 - 110				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001AMSD	Date Analyzed: 08/10/2015 2334h												
Test Code: 300.0-W													
Chloride	60.5	mg/L	E300.0	0.0751	1.00	50.00	10.9	99.2	90 - 110	60.9	0.660	20	
Sulfate	202	mg/L	E300.0	0.211	7.50	50.00	154	96.8	90 - 110	206	2.03	20	



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81441	Date Analyzed: 08/11/2015 640h												
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	49,000	mg/L	SM2320B	1.86	10.0	50,000	0	98.0	90 - 110				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81441	Date Analyzed: 08/11/2015 640h												
Test Code: ALK-W-2320B													
Alkalinity (as CaCO <sub>3</sub> )	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as CaCO <sub>3</sub> )	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as CaCO <sub>3</sub> )	< 10.0	mg/L	SM2320B	1.86	10.0								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*





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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001AMS	Date Analyzed: 08/11/2015 640h												
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	215	mg/L	SM2320B	1.86	10.0	100.0	118	96.3	80 - 120				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001AMSD	Date Analyzed: 08/11/2015 640h												
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	218	mg/L	SM2320B	1.86	10.0	100.0	118	99.7	80 - 120	215	1.57	10	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001ADUP	Date Analyzed: 08/11/2015 620h												
Test Code: COND-W-2510B													
Conductivity	606	µmhos/cm	SM2510B	0.436	2.00					604	0.331	5	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81438	Date Analyzed: 08/11/2015 620h												
<b>Test Code:</b> COND-W-2510B													
Conductivity	999	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.9	98 - 102				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81438	Date Analyzed: 08/11/2015 620h												
Test Code: COND-W-2510B													
Conductivity	0.710	µmhos/cm	SM2510B	0.436	2.00								J

*J - Estimated value between the MDL and the reporting limit (PQL).*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81431	Date Analyzed: 08/10/2015 1800h												
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.944	mg/L	E353.2	0.00833	0.0100	1.000	0	94.4	90 - 110				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81431	Date Analyzed: 08/10/2015 1758h												
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*





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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-002AMS	Date Analyzed: 08/10/2015 1806h												
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	11.4	mg/L	E353.2	0.0833	0.100	10.00	0.645	107	90 - 110				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-002AMSD	Date Analyzed: 08/10/2015 1808h												
Test Code:	NO2/NO3-W-353.2												
Nitrate/Nitrite (as N)	9.77	mg/L	E353.2	0.0833	0.100	10.00	0.645	91.2	90 - 110	11.4	15.3	10	<sup>3</sup>

<sup>3</sup> - Matrix spike recoveries and/or high RPDs indicate suspected sample non-homogeneity. The method is in control as indicated by the LCS.



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508162-001BDUP	Date Analyzed: 08/10/2015 1953h												
Test Code: PH-4500H+B													
pH @ 25° C	11.4	pH Units	SM4500-H+B	1.00	1.00					11.5	0.524	5	



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81434	Date Analyzed: 08/10/2015 1953h												
Test Code: PH-4500H+B													
pH @ 25° C	9.02	pH Units	SM4500-H+B	1.00	1.00	9.000	0	100	98 - 102				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001ADUP	Date Analyzed: 08/10/2015 1420h												
Test Code: TDS-W-2540C													
Total Dissolved Solids	550	mg/L	SM2540C	30.6	50.0					730	28.1	5	@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-R81459</b>													
Date Analyzed: 08/10/2015 1420h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	220	mg/L	SM2540C	6.13	10.0	205.0	0	107	80 - 120				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1508160  
**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan  
**Dept:** WC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81459	Date Analyzed: 08/10/2015 1420h												
Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1508160-001ADUP	Date Analyzed: 08/10/2015 1515h												
Test Code: TSS-W-2540D													
Total Suspended Solids	8,690	mg/L	SM2540D	70.8	75.0					8050	7.65	5	@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.





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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-R81456	Date Analyzed: 08/10/2015 1515h												
Test Code: TSS-W-2540D													
Total Suspended Solids	93.0	mg/L	SM2540D	2.83	3.00	100.0	0	93.0	80 - 120				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1508160

**Project:** Gold King Mine - San Juan River Sampling

**Contact:** Lenora Sullivan

**Dept:** WC

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-R81456	Date Analyzed: 08/10/2015 1515h												
Test Code: TSS-W-2540D													
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U

*U - This flag indicates the compound was analyzed for but not detected above the MDL.*

## WORK ORDER Summary

Work Order: **1508160** Page 1 of 6

**Client:** Utah Division of Water Quality

Due Date: 8/11/2015

**Client ID:** UTD200

**Contact:** Lenora Sullivan

**Project:** Gold King Mine - San Juan River Sampling

**QC Level:** II+

**WO Type:** Standard

**Comments:** Next Day Rush QC2+ / dissolved metals have been field filtered. Flag any concentrations detected less than RL and at or greater than the MDL with a J flag. Include EDD Use sparingly, do not preserve entire sample. Footnote report, pH received outside of hold.; Email to lenoras@utah.gov.;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508160-001A	San Juan R @ Mexican Hat US163 Xing (4953000)	8/8/2015 1740h	8/10/2015 1255h	300.0-W	Aqueous	df - wc	1
				2 SEL Analytes: CL SO4			
				ALK-W-2320B		df - wc	
				3 SEL Analytes: ALK ALKB ALKC			
				COND-W-2510B		df - wc	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
1508160-001B				200.7-W		df - total metals	
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-W-PR		df - total metals	
				200.8-W		df - total metals	
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			
				200.8-W-PR		df - total metals	
				HARD-2340B		df - total metals	
				HG-DW-245.1		df - total metals	
				HG-DW-PR		df - total metals	
1508160-001C				200.7-DIS		df - dis metals	
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-DIS-PR		df - dis metals	
				200.8-DIS		df - dis metals	
				17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			
				200.8-DIS-PR		df - dis metals	
				HARD-2340B		df - dis metals	
				HG-DW-DIS-245.1		df - dis metals	
				HG-DW-DIS-PR		df - dis metals	

# WORK ORDER Summary

Work Order: **1508160** Page 2 of 6

Client: Utah Division of Water Quality

Due Date: 8/11/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508160-002A	San Juan R @ Sand Island (4953250)	8/8/2015 1619h	8/10/2015 1255h	300.0-W	Aqueous		df - wc
				<i>2 SEL Analytes: CL SO4</i>			
				ALK-W-2320B		df - wc	
				<i>3 SEL Analytes: ALK ALKB ALKC</i>			
				COND-W-2510B		df - wc	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
				1508160-002B			
<i>6 SEL Analytes: AL CA FE MG K NA</i>							
200.7-W-PR	df - total metals						
200.8-W	df - total metals						
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>							
200.8-W-PR	df - total metals						
HARD-2340B	df - total metals						
HG-DW-245.1	df - total metals						
HG-DW-PR	df - total metals						
1508160-002C					200.7-DIS		
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-DIS-PR	df - dis metals		
				200.8-DIS	df - dis metals		
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>			
				200.8-DIS-PR	df - dis metals		
				HARD-2340B	df - dis metals		
				HG-DW-DIS-245.1	df - dis metals		
				HG-DW-DIS-PR	df - dis metals		
				1508160-003A	San Juan R @ Town of Montezuma (4953990)	8/8/2015 1454h	8/10/2015 1255h
<i>2 SEL Analytes: CL SO4</i>							
ALK-W-2320B	df - wc						
<i>3 SEL Analytes: ALK ALKB ALKC</i>							
COND-W-2510B	df - wc						
NO2/NO3-W-353.2	df - wc						
PH-4500H+B	df - wc						
TDS-W-2540C	df - wc						
TSS-W-2540D	df - wc						

# WORK ORDER Summary

Work Order: **1508160**

Page 3 of 6

Client: Utah Division of Water Quality

Due Date: 8/11/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508160-003B	San Juan R @ Town of Montezuma (4953990)	8/8/2015 1454h	8/10/2015 1255h	200.7-W	Aqueous		df - total metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-W-PR		df - total metals	
				200.8-W		df - total metals	
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE</i>			
				<i>AG TL V ZN</i>			
				200.8-W-PR		df - total metals	
				HARD-2340B		df - total metals	
				HG-DW-245.1		df - total metals	
				HG-DW-PR		df - total metals	
1508160-003C				200.7-DIS			df - dis metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-DIS-PR		df - dis metals	
				200.8-DIS		df - dis metals	
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE</i>			
				<i>AG TL V ZN</i>			
				200.8-DIS-PR		df - dis metals	
				HARD-2340B		df - dis metals	
				HG-DW-DIS-245.1		df - dis metals	
				HG-DW-DIS-PR		df - dis metals	
1508160-004A	San Juan R @ US160 Xing in CO (4954000)	8/8/2015 1323h	8/10/2015 1255h	300.0-W	Aqueous		df - wc
				<i>2 SEL Analytes: CL SO4</i>			
				ALK-W-2320B		df - wc	
				<i>3 SEL Analytes: ALK ALKB ALKC</i>			
				COND-W-2510B		df - wc	
				NO2/NO3-W-353.2		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
				1508160-004B			
<i>6 SEL Analytes: AL CA FE MG K NA</i>							
200.7-W-PR		df - total metals					
200.8-W		df - total metals					
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE</i>							
<i>AG TL V ZN</i>							
200.8-W-PR		df - total metals					
HARD-2340B		df - total metals					
HG-DW-245.1		df - total metals					
HG-DW-PR		df - total metals					

# WORK ORDER Summary

Work Order: **1508160**

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Client: Utah Division of Water Quality

Due Date: 8/11/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage			
1508160-004C	San Juan R @ US160 Xing in CO (4954000)	8/8/2015 1323h	8/10/2015 1255h	200.7-DIS	Aqueous	df - dis metals	1		
				<i>6 SEL Analytes: AL CA FE MG K NA</i>					
				200.7-DIS-PR		df - dis metals			
				200.8-DIS		df - dis metals			
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>					
				200.8-DIS-PR		df - dis metals			
				HARD-2340B		df - dis metals			
				HG-DW-DIS-245.1		df - dis metals			
				HG-DW-DIS-PR		df - dis metals			
1508160-005A	San Juan R @ US160 Xing in CO (4954000)	8/9/2015 1202h	8/10/2015 1255h	300.0-W	Aqueous	df - wc	1		
				<i>2 SEL Analytes: CL SO4</i>					
				ALK-W-2320B		df - wc			
				<i>3 SEL Analytes: ALK ALKB ALKC</i>					
				COND-W-2510B		df - wc			
				NO2/NO3-W-353.2		df - wc			
				PH-4500H+B		df - wc			
				TDS-W-2540C		df - wc			
				TSS-W-2540D		df - wc			
1508160-005B				200.7-W		df - total metals			
				<i>6 SEL Analytes: AL CA FE MG K NA</i>					
				200.7-W-PR		df - total metals			
				200.8-W		df - total metals			
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>					
				200.8-W-PR		df - total metals			
				HARD-2340B		df - total metals			
				HG-DW-245.1		df - total metals			
				HG-DW-PR		df - total metals			
1508160-005C				200.7-DIS		df - dis metals			
				<i>6 SEL Analytes: AL CA FE MG K NA</i>					
				200.7-DIS-PR		df - dis metals			
				200.8-DIS		df - dis metals			
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>					
				200.8-DIS-PR		df - dis metals			
				HARD-2340B		df - dis metals			
				HG-DW-DIS-245.1		df - dis metals			
				HG-DW-DIS-PR		df - dis metals			

# WORK ORDER Summary

Work Order: **1508160**

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Client: Utah Division of Water Quality

Due Date: 8/11/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage			
1508160-006A	San Juan R @ US160 Xing in CO (4954000)	8/9/2015 1505h	8/10/2015 1255h	300.0-W	Aqueous	df - wc	1		
				<i>2 SEL Analytes: CL SO4</i>					
				ALK-W-2320B		df - wc			
				<i>3 SEL Analytes: ALK ALKB ALKC</i>					
				COND-W-2510B		df - wc			
				NO2/NO3-W-353.2		df - wc			
				PH-4500H+B		df - wc			
				TDS-W-2540C		df - wc			
				TSS-W-2540D		df - wc			
				1508160-006B				200.7-W	
<i>6 SEL Analytes: AL CA FE MG K NA</i>									
200.7-W-PR		df - total metals							
200.8-W		df - total metals							
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>									
200.8-W-PR		df - total metals							
HARD-2340B		df - total metals							
HG-DW-245.1		df - total metals							
HG-DW-PR		df - total metals							
1508160-007A	San Juan R @ US160 Xing in CO (4954000)	8/9/2015 1800h	8/10/2015 1255h					300.0-W	Aqueous
				<i>2 SEL Analytes: CL SO4</i>					
				ALK-W-2320B		df - wc			
				<i>3 SEL Analytes: ALK ALKB ALKC</i>					
				COND-W-2510B		df - wc			
				NO2/NO3-W-353.2		df - wc			
				PH-4500H+B		df - wc			
				TDS-W-2540C		df - wc			
				TSS-W-2540D		df - wc			
				1508160-007B				200.7-W	
<i>6 SEL Analytes: AL CA FE MG K NA</i>									
200.7-W-PR		df - total metals							
200.8-W		df - total metals							
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>									
200.8-W-PR		df - total metals							
HARD-2340B		df - total metals							
HG-DW-245.1		df - total metals							
HG-DW-PR		df - total metals							

# WORK ORDER Summary

Work Order: **1508160** Page 6 of 6

Client: Utah Division of Water Quality

Due Date: 8/11/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage
1508160-008A	San Juan R @ US160 Xing in CO (4954000)	8/9/2015 2102h	8/10/2015 1255h	300.0-W	Aqueous	df - wc
				<i>2 SEL Analytes: CL SO4</i>		
				ALK-W-2320B		df - wc
				<i>3 SEL Analytes: ALK ALKB ALKC</i>		
				COND-W-2510B		df - wc
				NO2/NO3-W-353.2		df - wc
				PH-4500H+B		df - wc
				TDS-W-2540C		df - wc
				TSS-W-2540D		df - wc
				1508160-008B		
<i>6 SEL Analytes: AL CA FE MG K NA</i>						
200.7-W-PR		df - total metals				
200.8-W		df - total metals				
<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>						
200.8-W-PR		df - total metals				
HARD-2340B		df - total metals				
HG-DW-245.1		df - total metals				
HG-DW-PR		df - total metals				
1508160-008C						
				<i>6 SEL Analytes: AL CA FE MG K NA</i>		
				200.7-DIS-PR		df - dis metals
				200.8-DIS		df - dis metals
				<i>17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN</i>		
				200.8-DIS-PR		df - dis metals
				HARD-2340B		df - dis metals
				HG-DW-DIS-245.1		df - dis metals
				HG-DW-DIS-PR		df - dis metals



American West Analytical Laboratories

Chain of Custody

Lab Sample Set #

1508/160

Page 1 of 1

Client: **Utah Division of Water Quality**  
 Address: **PO Box 144870**  
**Salt Lake City, UT 84114-4870**

Contact: **Lenora Sullivan**  
 Phone: **801-536-4367**  
 Fax: **801-536-4301**

Project Name: **Gold King Mine - San Juan River Sampling**  
 PO#:

Email: **lenoras@utah.gov**  
**jamesharris@utah.gov (please copy on results)**

QC Level: 2+

TAT - ASAP

Sample ID:	Date Sampled	Time	# of Containers	Sample Matrix	Total Chemistry: pH, Alkalinity, Anions, TDS, TSS, Conductivity	Total TAL Metals + Mo + Hardness (200.7): Al, Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Ti, V, Zn, 245.1: Hg	Dissolved TAL Metals + Mo + Hardness (200.7): Al, Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Ti, V, Zn, 245.1: Hg	Comments	Laboratory Use Only
SAN JUAN R AT MEXICAN HAT US163 XING (4953000)	8/8/15	1740	3	W	X	X	X	Dissolved Metals samples have been field filtered. Samples collected from river monitoring following a mine waste dump release. Please flag any concentrations detected less than RL and at or greater than the MDL with a J qualifier. Please include EDD.	Samples Were: 1 Shipped or hand delivered 2 Ambient or Chilled 3 Temperature 36 4 Received Broken/Leaking (Improperly Sealed) NO <sub>2</sub> /NO <sub>3</sub> not present 5 Properly Preserved 6 Received Within Holding Times off rec outside of lab
SAN JUAN R AT SAND ISLAND (4953250)	8/8/15	1619	3	W	X	X	X		
San Juan River at Town of Montezuma 4953990	8/8/15	1454	3	W	X	X	X		
SAN JUAN R AT US160 XING IN CO (4954000)	8/8/15	1323	3	W	X	X	X		
SAN JUAN R @ US160 XING IN CO 4954000	8/9/15	1282	3	W	X	X	X		
SAN JUAN R @ US160 XING IN CO 4954000	8/9/15	1505	2	W	X	X	X		
SAN JUAN R @ US160 XING IN CO 4954000	8/9/15	1800	2	W	X	X	X		
SAN JUAN R @ US160 XING IN CO 4954000	8/9/15	2102	3	W	X	X	X		
								COC Tape Was: Present on Outer Package: N NA Unbroken on Outer Package: Y N NA Present on Sample: Y N NA Unbroken on Sample: Y N NA Discrepancies Between Sample Labels and COC Record? Y	

Special Instructions:

Relinquished by: Signature	Date: 8/10/15	Received by: Signature	Date: 8/10/15
Print Name: JAMES HARRIS	Time: 1255	Print Name: Lenora Sullivan	Time: 1255
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:

**Preservation Check Sheet**

**Sample Set Extension and pH**

Analysis	Preservative	1	2	3	4	5	6	7	8										
Ammonia	pH <2 H <sub>2</sub> SO <sub>4</sub>																		
COD	pH <2 H <sub>2</sub> SO <sub>4</sub>																		
Cyanide	pH >12 NaOH																		
Metals	pH <2 HNO <sub>3</sub>	yes	yes	yes	yes	yes	yes	yes	yes										
NO <sub>2</sub> & NO <sub>3</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																		
O & G	pH <2 HCL																		
Phenols	pH <2 H <sub>2</sub> SO <sub>4</sub>																		
Sulfide	pH > 9NaOH, Zn Acetate																		
TKN	pH <2 H <sub>2</sub> SO <sub>4</sub>																		
T PO <sub>4</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																		

- Procedure:
- 1) Pour a small amount of sample in the sample lid
  - 2) Pour sample from Lid gently over wide range pH paper
  - 3) **Do Not** dip the pH paper in the sample bottle or lid
  - 4) If sample is not preserved, properly list its extension and receiving pH in the appropriate column above
  - 5) Flag COC, notify client if requested
  - 6) Place client conversation on COC
  - 7) Samples may be adjusted

Frequency: All samples requiring preservation

- \* The sample required additional preservative upon receipt.
- + The sample was received unpreserved.
- ▲ The sample was received unpreserved and therefore preserved upon receipt.
- # The sample pH was unadjustable to a pH < 2 due to the sample matrix.
- The sample pH was unadjustable to a pH > \_\_\_\_ due to the sample matrix interference.