



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: 1508437

American West Analytical Laboratories received sample(s) on 8/21/2015 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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Laboratory Director

Jose Rocha
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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: 1508437-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/20/2015 656h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1309h	E200.7	0.0237	0.100	5.79	¹
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000366	0.00200	0.000198	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000920	0.00200	0.00292	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000538	0.00200	0.161	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000288	0.00200	0.000342	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1202h	E200.7	0.401	10.0	73.2	²
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.00154	0.00200	0.00309	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000434	0.00400	0.00199	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000692	0.00200	0.00684	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1309h	E200.7	0.0767	0.100	4.33	¹
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000264	0.00200	0.00517	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1309h	E200.7	0.0294	1.00	14.6	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.00153	0.00200	0.136	
Mercury	7439-97-6	mg/L	8/27/2015 1530h	8/28/2015 1259h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000206	0.00200	0.00163	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000754	0.00200	0.00324	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1309h	E200.7	0.247	1.00	3.78	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000634	0.00200	0.000631	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000244	0.00200	0.0000482	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1309h	E200.7	0.0330	1.00	34.8	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.0000242	0.00200	0.0000372	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.000438	0.00440	0.0104	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 929h	E200.8	0.00476	0.00500	0.0187	

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

² - 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).

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



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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: 1508437-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/20/2015 721h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1315h	E200.7	0.0237	0.100	5.77	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000366	0.00200	0.000564	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000920	0.00200	0.00287	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000538	0.00200	0.167	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000288	0.00200	0.000357	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1216h	E200.7	0.401	10.0	71.2	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.00154	0.00200	0.00319	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000434	0.00400	0.00238	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000692	0.00200	0.00770	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1315h	E200.7	0.0767	0.100	4.70	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000264	0.00200	0.00570	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1315h	E200.7	0.0294	1.00	14.8	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.00153	0.00200	0.174	
Mercury	7439-97-6	mg/L	8/27/2015 1530h	8/28/2015 1304h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000206	0.00200	0.00163	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000754	0.00200	0.00389	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1315h	E200.7	0.247	1.00	3.71	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000634	0.00200	0.000684	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000244	0.00200	0.000126	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1315h	E200.7	0.0330	1.00	33.4	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.0000242	0.00200	0.000181	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.000438	0.00440	0.0105	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 938h	E200.8	0.00476	0.00500	0.0216	

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

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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: 1508437-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/20/2015 859h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1318h	E200.7	0.0237	0.100	3.65	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000366	0.00200	0.000255	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000920	0.00200	0.00202	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000538	0.00200	0.115	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000288	0.00200	0.000237	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1218h	E200.7	0.401	10.0	69.1	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.00154	0.00200	0.00229	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000434	0.00400	0.00140	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000692	0.00200	0.00558	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1318h	E200.7	0.0767	0.100	3.12	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000264	0.00200	0.00360	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1318h	E200.7	0.0294	1.00	14.8	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.00153	0.00200	0.109	
Mercury	7439-97-6	mg/L	8/27/2015 1530h	8/28/2015 1306h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000206	0.00200	0.00156	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000754	0.00200	0.00246	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1318h	E200.7	0.247	1.00	3.25	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000634	0.00200	0.000595	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000244	0.00200	0.0000518	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1318h	E200.7	0.0330	1.00	35.2	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.0000242	0.00200	0.0000315	J
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.000438	0.00440	0.00721	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 941h	E200.8	0.00476	0.00500	0.0139	

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

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Kyle F. Gross
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: 1508437-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/20/2015 944h
Received Date: 8/21/2015 926h

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	8/21/2015 1311h	9/1/2015 1320h	E200.7	0.0237	0.100	3.65	
Antimony	7440-36-0	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000366	0.00200	0.000164	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000920	0.00200	0.00202	
Barium	7440-39-3	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000538	0.00200	0.119	
Beryllium	7440-41-7	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000288	0.00200	0.000266	J
Cadmium	7440-43-9	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1311h	9/1/2015 1220h	E200.7	0.401	10.0	64.3	
Chromium	7440-47-3	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.00154	0.00200	0.00228	
Cobalt	7440-48-4	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000434	0.00400	0.00172	J
Copper	7440-50-8	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000692	0.00200	0.00618	
Iron	7439-89-6	mg/L	8/21/2015 1311h	9/1/2015 1320h	E200.7	0.0767	0.100	3.29	
Lead	7439-92-1	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000264	0.00200	0.00384	
Magnesium	7439-95-4	mg/L	8/21/2015 1311h	9/1/2015 1320h	E200.7	0.0294	1.00	11.0	
Manganese	7439-96-5	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.00153	0.00200	0.119	
Mercury	7439-97-6	mg/L	8/27/2015 1530h	8/28/2015 1308h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000206	0.00200	0.00141	J
Nickel	7440-02-0	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000754	0.00200	0.00271	
Potassium	7440-09-7	mg/L	8/21/2015 1311h	9/1/2015 1320h	E200.7	0.247	1.00	3.15	
Selenium	7782-49-2	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000634	0.00200	0.000550	J
Silver	7440-22-4	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000244	0.00200	0.0000385	JB
Sodium	7440-23-5	mg/L	8/21/2015 1311h	9/1/2015 1320h	E200.7	0.0330	1.00	32.5	
Thallium	7440-28-0	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.000438	0.00440	0.00698	
Zinc	7440-66-6	mg/L	8/21/2015 1311h	9/3/2015 944h	E200.8	0.00476	0.00500	0.0157	

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: 1508437-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/20/2015 656h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1029h	E200.7	0.0237	0.100	0.0504	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000366	0.00200	0.000353	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000920	0.00200	0.00142	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000538	0.00200	0.200	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 948h	E200.7	0.401	10.0	66.4	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000434	0.00400	0.0000685	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000692	0.00200	0.00219	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1112h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1112h	E200.7	0.0294	1.00	12.6	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 1014h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000206	0.00200	0.00198	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1112h	E200.7	0.247	1.00	2.79	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000634	0.00200	0.000598	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1112h	E200.7	0.0330	1.00	36.9	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.000438	0.00440	0.00298	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2329h	E200.8	0.00476	0.00500	0.00835	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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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

INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan
Project: Gold King Mine - San Juan River Sampling
Lab Sample ID: 1508437-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/20/2015 721h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1031h	E200.7	0.0237	0.100	0.0244	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000366	0.00200	0.000341	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000920	0.00200	0.00142	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000538	0.00200	0.138	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 950h	E200.7	0.401	10.0	61.2	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000434	0.00400	0.0000766	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000692	0.00200	0.00233	
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1115h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1115h	E200.7	0.0294	1.00	12.4	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 1020h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000206	0.00200	0.00186	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1115h	E200.7	0.247	1.00	2.60	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000634	0.00200	0.000617	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1115h	E200.7	0.0330	1.00	36.1	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.000438	0.00440	0.00261	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2332h	E200.8	0.00476	0.00500	0.00907	

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

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Kyle F. Gross
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Jose Rocha
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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: 1508437-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/20/2015 859h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1033h	E200.7	0.0237	0.100	< 0.100	U
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000366	0.00200	0.000994	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000920	0.00200	0.00140	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000538	0.00200	0.128	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 1000h	E200.7	0.401	10.0	62.7	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000434	0.00400	0.0000710	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000692	0.00200	0.00193	J
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1117h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1117h	E200.7	0.0294	1.00	13.4	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 1021h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000206	0.00200	0.00180	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1117h	E200.7	0.247	1.00	2.62	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000634	0.00200	0.000660	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000244	0.00200	< 0.00200	U
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1117h	E200.7	0.0330	1.00	37.5	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.0000242	0.00200	< 0.00200	U
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.000438	0.00440	0.00214	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2335h	E200.8	0.00476	0.00500	0.00664	

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

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Kyle F. Gross
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: 1508437-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/20/2015 944h
Received Date: 8/21/2015 926h

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	8/21/2015 1341h	9/3/2015 1040h	E200.7	0.0237	0.100	0.0284	J
Antimony	7440-36-0	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000366	0.00200	0.000764	JB
Arsenic	7440-38-2	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000920	0.00200	0.00132	J
Barium	7440-39-3	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000538	0.00200	0.132	
Beryllium	7440-41-7	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000288	0.00200	< 0.00200	U
Cadmium	7440-43-9	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000193	0.000500	< 0.000500	U
Calcium	7440-70-2	mg/L	8/21/2015 1341h	9/2/2015 1006h	E200.7	0.401	10.0	57.0	
Chromium	7440-47-3	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.00154	0.00200	< 0.00200	U
Cobalt	7440-48-4	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000434	0.00400	0.0000772	J
Copper	7440-50-8	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000692	0.00200	0.00185	J
Iron	7439-89-6	mg/L	8/21/2015 1341h	9/2/2015 1123h	E200.7	0.0767	0.100	< 0.100	U
Lead	7439-92-1	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000264	0.00200	< 0.00200	U
Magnesium	7439-95-4	mg/L	8/21/2015 1341h	9/2/2015 1123h	E200.7	0.0294	1.00	9.55	B1
Manganese	7439-96-5	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.00153	0.00200	< 0.00200	U
Mercury	7439-97-6	mg/L	8/26/2015 1550h	8/27/2015 1023h	E245.1	0.00000892	0.000150	< 0.000150	U
Molybdenum	7439-98-7	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000206	0.00200	0.00176	J
Nickel	7440-02-0	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000754	0.00200	< 0.00200	U
Potassium	7440-09-7	mg/L	8/21/2015 1341h	9/2/2015 1123h	E200.7	0.247	1.00	2.44	
Selenium	7782-49-2	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000634	0.00200	0.000631	J
Silver	7440-22-4	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000244	0.00200	0.000104	J
Sodium	7440-23-5	mg/L	8/21/2015 1341h	9/2/2015 1123h	E200.7	0.0330	1.00	33.8	
Thallium	7440-28-0	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.0000242	0.00200	0.0000365	J
Vanadium	7440-62-2	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.000438	0.00440	0.00193	J
Zinc	7440-66-6	mg/L	8/21/2015 1341h	9/2/2015 2345h	E200.8	0.00476	0.00500	0.00810	

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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: 1508437-001
Client Sample ID: San Juan R at Mexican Hat US163 Xing (4953000)
Collection Date: 8/20/2015 656h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	122	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	3.40	J
Chloride	16887-00-6	mg/L		8/25/2015 2107h	E300.0	0.0751	1.00	15.7	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	699	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	243	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	218	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/31/2015 1705h	E353.2	0.00833	0.0100	< 0.0100	U ¹
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.19	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1050h	SM4500-P-F	0.0212	0.0500	0.110	B
Sulfate	14808-79-8	mg/L		8/25/2015 2107h	E300.0	0.211	7.50	142	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	320	@
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	7.08	7.50	212	

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

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

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

H - Sample was received outside of the holding time.

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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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: 1508437-002
Client Sample ID: San Juan R at Sand Island (4953250)
Collection Date: 8/20/2015 721h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	130	
Bicarbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	120	
Carbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	10.1	
Chloride	16887-00-6	mg/L		8/25/2015 2158h	E300.0	0.0751	1.00	14.7	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	652	
Hardness (as CaCO3)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	239	
Hardness, Dissolved (as CaCO3)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	204	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/31/2015 1712h	E353.2	0.00833	0.0100	0.0744	
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.40	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1051h	SM4500-P-F	0.0212	0.0500	0.156	B
Sulfate	14808-79-8	mg/L		8/25/2015 2158h	E300.0	0.211	7.50	132	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	330	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	14.2	15.0	312	@

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

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

H - Sample was received outside of the holding time.



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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: 1508437-003
Client Sample ID: San Juan River at Town of Montezuma (4953990)
Collection Date: 8/20/2015 859h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	127	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	123	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	3.40	J
Chloride	16887-00-6	mg/L		8/25/2015 2215h	E300.0	0.0751	1.00	15.5	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	679	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	234	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	212	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/31/2015 1713h	E353.2	0.00833	0.0100	0.196	
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.42	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1051h	SM4500-P-F	0.0212	0.0500	0.0658	B
Sulfate	14808-79-8	mg/L		8/25/2015 2215h	E300.0	0.211	7.50	134	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	370	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	7.08	7.50	139	

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

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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: 1508437-004
Client Sample ID: San Juan R at US160 Xing in CO (4954000)
Collection Date: 8/20/2015 944h
Received Date: 8/21/2015 926h

Analytical Results

Compound	CAS	Units	Date Prepared	Date Analyzed	Method Used	MDL	Reporting Limit	Analytical Result	Qual
Alkalinity (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Bicarbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	115	
Carbonate (as CaCO ₃)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	3.40	J
Chloride	16887-00-6	mg/L		8/25/2015 2232h	E300.0	0.0751	1.00	13.6	
Conductivity		µmhos/cm		8/24/2015 714h	SM2510B	0.436	2.00	605	
Hardness (as CaCO ₃)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	206	
Hardness, Dissolved (as CaCO ₃)		mg/L		9/3/2015 854h	SM2340B	10.0	10.0	182	
Nitrate/Nitrite (as N)	7727-37-9	mg/L		8/31/2015 1723h	E353.2	0.00833	0.0100	< 0.0100	U
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.33	H
Phosphate, Total (as P)	7723-14-0	mg/L	8/31/2015 1450h	9/1/2015 1052h	SM4500-P-F	0.0212	0.0500	0.109	B
Sulfate	14808-79-8	mg/L		8/25/2015 2232h	E300.0	0.211	7.50	111	
Total Dissolved Solids		mg/L		8/21/2015 1250h	SM2540C	30.6	50.0	930	
Total Suspended Solids	TSS	mg/L		8/21/2015 1550h	SM2540D	7.08	7.50	160	

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

H - Sample was received outside of the holding time.

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

Contact: Lenora Sullivan

Lab Set ID: 1508437

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
Lab Sample ID: LCS-38761													
Date Analyzed:		09/02/2015 903h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Aluminum	1.05	mg/L	E200.7	0.0237	0.100	1.000	0	105	85 - 115				
Calcium	10.2	mg/L	E200.7	0.0401	1.00	10.00	0	102	85 - 115				
Iron	0.969	mg/L	E200.7	0.0767	0.100	1.000	0	96.9	85 - 115				
Magnesium	10.6	mg/L	E200.7	0.0294	1.00	10.00	0	106	85 - 115				
Potassium	10.4	mg/L	E200.7	0.247	1.00	10.00	0	104	85 - 115				
Sodium	10.8	mg/L	E200.7	0.0330	1.00	10.00	0	108	85 - 115				
Lab Sample ID: LCS-38759													
Date Analyzed:		09/01/2015 1112h											
Test Code:		200.7-W											
Date Prepared:		08/21/2015 1311h											
Aluminum	1.01	mg/L	E200.7	0.0237	0.100	1.000	0	101	85 - 115				
Calcium	10.1	mg/L	E200.7	0.0401	1.00	10.00	0	101	85 - 115				
Iron	0.981	mg/L	E200.7	0.0767	0.100	1.000	0	98.1	85 - 115				
Magnesium	10.5	mg/L	E200.7	0.0294	1.00	10.00	0	105	85 - 115				
Potassium	9.91	mg/L	E200.7	0.247	1.00	10.00	0	99.1	85 - 115				
Sodium	10.2	mg/L	E200.7	0.0330	1.00	10.00	0	102	85 - 115				
Lab Sample ID: LCS-38762													
Date Analyzed:		09/02/2015 2214h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.184	mg/L	E200.8	0.0000366	0.00200	0.2000	0	92.0	85 - 115				
Arsenic	0.198	mg/L	E200.8	0.0000920	0.00200	0.2000	0	98.8	85 - 115				
Barium	0.190	mg/L	E200.8	0.000538	0.00200	0.2000	0	95.1	85 - 115				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	98.2	85 - 115				
Cadmium	0.189	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.3	85 - 115				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.7	85 - 115				
Cobalt	0.193	mg/L	E200.8	0.0000434	0.00400	0.2000	0	96.6	85 - 115				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0	97.8	85 - 115				
Lead	0.187	mg/L	E200.8	0.000264	0.00200	0.2000	0	93.6	85 - 115				
Manganese	0.194	mg/L	E200.8	0.00153	0.00200	0.2000	0	97.1	85 - 115				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0	95.7	85 - 115				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508437

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
Lab Sample ID: LCS-38762		Date Analyzed: 09/02/2015 2214h											
Test Code: 200.8-DIS		Date Prepared: 08/21/2015 1341h											
Nickel	0.192	mg/L	E200.8	0.000754	0.00200	0.2000	0	96.1	85 - 115				
Selenium	0.194	mg/L	E200.8	0.0000634	0.00200	0.2000	0	97.1	85 - 115				
Silver	0.174	mg/L	E200.8	0.0000244	0.00200	0.2000	0	87.0	85 - 115				
Thallium	0.181	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.5	85 - 115				
Vanadium	0.195	mg/L	E200.8	0.000438	0.00440	0.2000	0	97.5	85 - 115				
Zinc	0.972	mg/L	E200.8	0.00476	0.00500	1.000	0	97.2	85 - 115				
Lab Sample ID: LCS-38760		Date Analyzed: 09/02/2015 1645h											
Test Code: 200.8-W		Date Prepared: 08/21/2015 1311h											
Antimony	0.176	mg/L	E200.8	0.0000366	0.00200	0.2000	0	88.1	85 - 115				
Arsenic	0.195	mg/L	E200.8	0.0000920	0.00200	0.2000	0	97.5	85 - 115				
Barium	0.178	mg/L	E200.8	0.000538	0.00200	0.2000	0	88.9	85 - 115				
Beryllium	0.218	mg/L	E200.8	0.0000288	0.00200	0.2000	0	109	85 - 115				
Cadmium	0.179	mg/L	E200.8	0.000193	0.000500	0.2000	0	89.7	85 - 115				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.7	85 - 115				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0	95.9	85 - 115				
Copper	0.192	mg/L	E200.8	0.000692	0.00200	0.2000	0	96.2	85 - 115				
Lead	0.177	mg/L	E200.8	0.000264	0.00200	0.2000	0	88.5	85 - 115				
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0	96.6	85 - 115				
Molybdenum	0.181	mg/L	E200.8	0.000206	0.00200	0.2000	0	90.4	85 - 115				
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.8	85 - 115				
Selenium	0.192	mg/L	E200.8	0.0000634	0.00200	0.2000	0	95.9	85 - 115				
Thallium	0.175	mg/L	E200.8	0.0000242	0.00200	0.2000	0	87.6	85 - 115				
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0	98.2	85 - 115				
Zinc	0.970	mg/L	E200.8	0.00476	0.00500	1.000	0	97.0	85 - 115				
Lab Sample ID: LCS-38760		Date Analyzed: 09/04/2015 900h											
Test Code: 200.8-W		Date Prepared: 08/21/2015 1311h											
Silver	0.197	mg/L	E200.8	0.0000244	0.00200	0.2000	0	98.5	85 - 115				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: LCS-38874	Date Analyzed:	08/28/2015	1238h										
Test Code: HG-DW-245.1	Date Prepared:	08/27/2015	1530h										
Mercury	0.00335	mg/L	E245.1	0.00000892	0.000150	0.003330	0	100	85 - 115				
Lab Sample ID: LCS-38852	Date Analyzed:	08/27/2015	937h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	0.00344	mg/L	E245.1	0.00000892	0.000150	0.003330	0	103	85 - 115				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

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Lab Set ID: 1508437

Dept: ME

Project: Gold King Mine - San Juan River Sampling

QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-38761													
Date Analyzed:		09/02/2015 901h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
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	0.0399	mg/L	E200.7	0.0294	1.00								JB1
Potassium	< 1.00	mg/L	E200.7	0.247	1.00								U
Sodium	< 1.00	mg/L	E200.7	0.0330	1.00								U
Lab Sample ID: MB-38759													
Date Analyzed:		09/01/2015 1109h											
Test Code:		200.7-W											
Date Prepared:		08/21/2015 1311h											
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
Lab Sample ID: MB-38762													
Date Analyzed:		09/02/2015 2210h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.000125	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	0.000409	mg/L	E200.8	0.000264	0.00200								JB
Manganese	< 0.00200	mg/L	E200.8	0.00153	0.00200								U
Molybdenum	< 0.00200	mg/L	E200.8	0.000206	0.00200								U



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Lab Set ID: 1508437

Dept: ME

Project: Gold King Mine - San Juan River Sampling

QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-38762	Date Analyzed:	09/02/2015	2210h										
Test Code:	200.8-DIS	Date Prepared:	08/21/2015	1341h									
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
Lab Sample ID: MB-38760	Date Analyzed:	09/02/2015	1642h										
Test Code:	200.8-W	Date Prepared:	08/21/2015	1311h									
Antimony	0.000702	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	0.0000400	mg/L	E200.8	0.0000244	0.00200								JB
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



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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
Lab Sample ID: MB-38874	Date Analyzed:	08/28/2015	1236h										
Test Code: HG-DW-245.1	Date Prepared:	08/27/2015	1530h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
Lab Sample ID: MB-38852	Date Analyzed:	08/27/2015	935h										
Test Code: HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h										
Mercury	< 0.000150	mg/L	E245.1	0.00000892	0.000150								U

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

B1 - The method blank was acceptable, as the method blank result is less than 10% of the lowest reported sample concentration.

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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Lab Set ID: 1508437

Dept: ME

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QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1508437-003CMS													
Date Analyzed:		09/02/2015 1002h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	72.9	mg/L	E200.7	0.401	10.0	10.00	62.7	102	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:		09/02/2015 1039h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.898	mg/L	E200.7	0.0767	0.100	1.000	0	89.8	70 - 130				
Magnesium	24.1	mg/L	E200.7	0.0294	1.00	10.00	12.8	113	70 - 130				
Potassium	13.8	mg/L	E200.7	0.247	1.00	10.00	2.92	109	70 - 130				
Sodium	47.1	mg/L	E200.7	0.0330	1.00	10.00	36	111	70 - 130				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:		09/02/2015 1054h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.894	mg/L	E200.7	0.0767	0.100	1.000	0	89.4	70 - 130				
Magnesium	23.5	mg/L	E200.7	0.0294	1.00	10.00	12.9	105	70 - 130				
Potassium	13.2	mg/L	E200.7	0.247	1.00	10.00	2.75	105	70 - 130				
Sodium	46.8	mg/L	E200.7	0.0330	1.00	10.00	36.1	107	70 - 130				
Lab Sample ID: 1508437-003CMS													
Date Analyzed:		09/02/2015 1119h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Iron	0.876	mg/L	E200.7	0.0767	0.100	1.000	0	87.6	70 - 130				
Magnesium	24.1	mg/L	E200.7	0.0294	1.00	10.00	13.4	108	70 - 130				
Potassium	13.0	mg/L	E200.7	0.247	1.00	10.00	2.62	104	70 - 130				
Sodium	49.0	mg/L	E200.7	0.0330	1.00	10.00	37.5	116	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:		09/02/2015 914h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	78.4	mg/L	E200.7	0.401	10.0	10.00	66.4	120	70 - 130				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:		09/02/2015 938h											
Test Code:		200.7-DIS											
Date Prepared:		08/21/2015 1341h											
Calcium	74.4	mg/L	E200.7	0.401	10.0	10.00	64.5	99.4	70 - 130				



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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
Lab Sample ID: 1508436-002CMS	Date Analyzed:	09/03/2015	1010h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.10	mg/L	E200.7	0.0237	0.100	1.000	0.0329	106	70 - 130				
Lab Sample ID: 1508437-003CMS	Date Analyzed:	09/03/2015	1035h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.06	mg/L	E200.7	0.0237	0.100	1.000	0	106	70 - 130				
Lab Sample ID: 1508435-002CMS	Date Analyzed:	09/03/2015	955h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.07	mg/L	E200.7	0.0237	0.100	1.000	0	107	70 - 130				
Lab Sample ID: 1508435-002BMS	Date Analyzed:	09/01/2015	1128h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	87.3	mg/L	E200.7	0.401	10.0	10.00	78.4	89.0	70 - 130				
Lab Sample ID: 1508436-001BMS	Date Analyzed:	09/01/2015	1148h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	86.8	mg/L	E200.7	0.401	10.0	10.00	74.5	122	70 - 130				
Lab Sample ID: 1508437-001BMS	Date Analyzed:	09/01/2015	1204h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	77.1	mg/L	E200.7	0.401	10.0	10.00	73.2	38.8	70 - 130				2
Lab Sample ID: 1508435-002BMS	Date Analyzed:	09/01/2015	1234h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Aluminum	13.2	mg/L	E200.7	0.0237	0.100	1.000	7.32	584	70 - 130				1
Iron	8.59	mg/L	E200.7	0.0767	0.100	1.000	6.24	235	70 - 130				1
Magnesium	24.8	mg/L	E200.7	0.0294	1.00	10.00	15.5	93.6	70 - 130				
Potassium	14.2	mg/L	E200.7	0.247	1.00	10.00	4.23	100	70 - 130				
Sodium	40.5	mg/L	E200.7	0.0330	1.00	10.00	32.4	80.8	70 - 130				



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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality

Contact: Lenora Sullivan

Lab Set ID: 1508437

Dept: ME

Project: Gold King Mine - San Juan River Sampling

QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1508436-001BMS													
Date Analyzed:	09/01/2015 1248h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	13.9	mg/L	E200.7	0.0237	0.100	1.000	7.11	679	70 - 130				2
Iron	7.81	mg/L	E200.7	0.0767	0.100	1.000	5.21	261	70 - 130				2
Magnesium	25.2	mg/L	E200.7	0.0294	1.00	10.00	15.2	100	70 - 130				
Potassium	14.5	mg/L	E200.7	0.247	1.00	10.00	4.09	104	70 - 130				
Sodium	43.9	mg/L	E200.7	0.0330	1.00	10.00	33.5	103	70 - 130				
Lab Sample ID: 1508437-001BMS													
Date Analyzed:	09/01/2015 1311h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	10.2	mg/L	E200.7	0.0237	0.100	1.000	5.79	443	70 - 130				1
Iron	6.11	mg/L	E200.7	0.0767	0.100	1.000	4.33	179	70 - 130				1
Magnesium	23.9	mg/L	E200.7	0.0294	1.00	10.00	14.6	93.1	70 - 130				
Potassium	13.7	mg/L	E200.7	0.247	1.00	10.00	3.78	99.4	70 - 130				
Sodium	42.9	mg/L	E200.7	0.0330	1.00	10.00	34.8	80.5	70 - 130				
Lab Sample ID: 1508435-002CMS													
Date Analyzed:	09/02/2015 2240h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.190	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000583	94.7	75 - 125				
Arsenic	0.203	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00146	101	75 - 125				
Barium	0.329	mg/L	E200.8	0.000538	0.00200	0.2000	0.138	95.6	75 - 125				
Beryllium	0.199	mg/L	E200.8	0.0000288	0.00200	0.2000	0	99.7	75 - 125				
Cadmium	0.190	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.9	75 - 125				
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0	97.0	75 - 125				
Cobalt	0.193	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000643	96.7	75 - 125				
Copper	0.199	mg/L	E200.8	0.000692	0.00200	0.2000	0.00225	98.2	75 - 125				
Lead	0.189	mg/L	E200.8	0.000264	0.00200	0.2000	0.000382	94.4	75 - 125				
Manganese	0.195	mg/L	E200.8	0.00153	0.00200	0.2000	0.00155	96.7	75 - 125				
Molybdenum	0.198	mg/L	E200.8	0.000206	0.00200	0.2000	0.00194	98.0	75 - 125				
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0	96.4	75 - 125				
Selenium	0.192	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00057	95.8	75 - 125				



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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: 1508437
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
Lab Sample ID: 1508435-002CMS													
Date Analyzed:		09/02/2015 2240h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Silver	0.183	mg/L	E200.8	0.0000244	0.00200	0.2000	0	91.5	75 - 125				
Thallium	0.184	mg/L	E200.8	0.0000242	0.00200	0.2000	0	91.8	75 - 125				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0.00238	98.7	75 - 125				
Zinc	0.974	mg/L	E200.8	0.00476	0.00500	1.000	0.0123	96.2	75 - 125				
Lab Sample ID: 1508436-002CMS													
Date Analyzed:		09/02/2015 2303h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.187	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000513	93.4	75 - 125				
Arsenic	0.198	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00132	98.5	75 - 125				
Barium	0.307	mg/L	E200.8	0.000538	0.00200	0.2000	0.122	92.4	75 - 125				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	98.2	75 - 125				
Cadmium	0.187	mg/L	E200.8	0.000193	0.000500	0.2000	0	93.6	75 - 125				
Chromium	0.193	mg/L	E200.8	0.00154	0.00200	0.2000	0	96.3	75 - 125				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000747	96.0	75 - 125				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00191	97.2	75 - 125				
Lead	0.187	mg/L	E200.8	0.000264	0.00200	0.2000	0	93.3	75 - 125				
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0.00179	95.6	75 - 125				
Molybdenum	0.195	mg/L	E200.8	0.000206	0.00200	0.2000	0.00196	96.4	75 - 125				
Nickel	0.191	mg/L	E200.8	0.000754	0.00200	0.2000	0	95.4	75 - 125				
Selenium	0.191	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000564	95.2	75 - 125				
Silver	0.181	mg/L	E200.8	0.0000244	0.00200	0.2000	0	90.3	75 - 125				
Thallium	0.180	mg/L	E200.8	0.0000242	0.00200	0.2000	0	90.2	75 - 125				
Vanadium	0.197	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	97.5	75 - 125				
Zinc	0.970	mg/L	E200.8	0.00476	0.00500	1.000	0.00868	96.2	75 - 125				
Lab Sample ID: 1508437-003CMS													
Date Analyzed:		09/02/2015 2339h											
Test Code:		200.8-DIS											
Date Prepared:		08/21/2015 1341h											
Antimony	0.183	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000994	91.0	75 - 125				
Arsenic	0.199	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0014	98.8	75 - 125				



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Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508437-003CMS		Date Analyzed:	09/02/2015 2339h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Barium	0.311	mg/L	E200.8	0.000538	0.00200	0.2000	0.128	91.6	75 - 125				
Beryllium	0.190	mg/L	E200.8	0.0000288	0.00200	0.2000	0	95.2	75 - 125				
Cadmium	0.183	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.5	75 - 125				
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.4	75 - 125				
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000071	95.1	75 - 125				
Copper	0.195	mg/L	E200.8	0.000692	0.00200	0.2000	0.00193	96.8	75 - 125				
Lead	0.181	mg/L	E200.8	0.000264	0.00200	0.2000	0	90.5	75 - 125				
Manganese	0.190	mg/L	E200.8	0.00153	0.00200	0.2000	0	94.9	75 - 125				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0.0018	94.7	75 - 125				
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.6	75 - 125				
Selenium	0.190	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00066	94.5	75 - 125				
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	87.9	75 - 125				
Thallium	0.176	mg/L	E200.8	0.0000242	0.00200	0.2000	0	88.1	75 - 125				
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0.00214	96.9	75 - 125				
Zinc	0.962	mg/L	E200.8	0.00476	0.00500	1.000	0.00664	95.5	75 - 125				
Lab Sample ID: 1508435-002BMS		Date Analyzed:	09/02/2015 1702h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.141	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000765	70.1	75 - 125				1
Arsenic	0.196	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00334	96.3	75 - 125				
Barium	0.369	mg/L	E200.8	0.000538	0.00200	0.2000	0.184	92.6	75 - 125				
Beryllium	0.213	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000535	106	75 - 125				
Cadmium	0.178	mg/L	E200.8	0.000193	0.000500	0.2000	0	89.2	75 - 125				
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0.00417	97.2	75 - 125				
Cobalt	0.195	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00319	96.1	75 - 125				
Copper	0.201	mg/L	E200.8	0.000692	0.00200	0.2000	0.0101	95.3	75 - 125				
Lead	0.184	mg/L	E200.8	0.000264	0.00200	0.2000	0.00824	88.1	75 - 125				
Manganese	0.432	mg/L	E200.8	0.00153	0.00200	0.2000	0.239	96.7	75 - 125				
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	95.3	75 - 125				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508435-002BMS		Date Analyzed:	09/02/2015 1702h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.00522	95.3	75 - 125				
Selenium	0.183	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000721	91.2	75 - 125				
Silver	0.162	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000634	81.0	75 - 125				
Thallium	0.174	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000399	86.9	75 - 125				
Vanadium	0.213	mg/L	E200.8	0.000438	0.00440	0.2000	0.0131	100	75 - 125				
Zinc	0.994	mg/L	E200.8	0.00476	0.00500	1.000	0.0323	96.1	75 - 125				
Lab Sample ID: 1508436-001BMS		Date Analyzed:	09/03/2015 900h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.153	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000209	76.4	75 - 125				
Arsenic	0.195	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00313	96.1	75 - 125				
Barium	0.377	mg/L	E200.8	0.000538	0.00200	0.2000	0.187	94.7	75 - 125				
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000457	97.9	75 - 125				
Cadmium	0.192	mg/L	E200.8	0.000193	0.000500	0.2000	0	96.1	75 - 125				
Chromium	0.194	mg/L	E200.8	0.00154	0.00200	0.2000	0.00383	95.2	75 - 125				
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00266	94.5	75 - 125				
Copper	0.197	mg/L	E200.8	0.000692	0.00200	0.2000	0.00851	94.4	75 - 125				
Lead	0.197	mg/L	E200.8	0.000264	0.00200	0.2000	0.00715	95.0	75 - 125				
Manganese	0.374	mg/L	E200.8	0.00153	0.00200	0.2000	0.182	95.8	75 - 125				
Molybdenum	0.189	mg/L	E200.8	0.000206	0.00200	0.2000	0.00149	93.9	75 - 125				
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0.00481	94.2	75 - 125				
Selenium	0.187	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000694	93.2	75 - 125				
Silver	0.168	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000541	84.0	75 - 125				
Thallium	0.185	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000502	92.3	75 - 125				
Vanadium	0.206	mg/L	E200.8	0.000438	0.00440	0.2000	0.012	97.1	75 - 125				
Zinc	0.985	mg/L	E200.8	0.00476	0.00500	1.000	0.023	96.2	75 - 125				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508437

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
Lab Sample ID: 1508437-001BMS	Date Analyzed:	09/03/2015	932h										
Test Code:	200.8-W	Date Prepared:	08/21/2015	1311h									
Antimony	0.172	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000198	85.8	75 - 125				
Arsenic	0.193	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00292	95.0	75 - 125				
Barium	0.344	mg/L	E200.8	0.000538	0.00200	0.2000	0.161	91.4	75 - 125				
Beryllium	0.194	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000342	96.8	75 - 125				
Cadmium	0.189	mg/L	E200.8	0.000193	0.000500	0.2000	0	94.4	75 - 125				
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0.00309	94.0	75 - 125				
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00199	93.9	75 - 125				
Copper	0.196	mg/L	E200.8	0.000692	0.00200	0.2000	0.00684	94.4	75 - 125				
Lead	0.192	mg/L	E200.8	0.000264	0.00200	0.2000	0.00517	93.6	75 - 125				
Manganese	0.323	mg/L	E200.8	0.00153	0.00200	0.2000	0.136	93.3	75 - 125				
Molybdenum	0.191	mg/L	E200.8	0.000206	0.00200	0.2000	0.00163	94.6	75 - 125				
Nickel	0.190	mg/L	E200.8	0.000754	0.00200	0.2000	0.00324	93.6	75 - 125				
Selenium	0.186	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000631	92.5	75 - 125				
Silver	0.174	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000482	87.0	75 - 125				
Thallium	0.182	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000372	91.0	75 - 125				
Vanadium	0.200	mg/L	E200.8	0.000438	0.00440	0.2000	0.0104	94.8	75 - 125				
Zinc	0.959	mg/L	E200.8	0.00476	0.00500	1.000	0.0187	94.0	75 - 125				
Lab Sample ID: 1508436-001BMS	Date Analyzed:	08/28/2015	1245h										
Test Code:	HG-DW-245.1	Date Prepared:	08/27/2015	1530h									
Mercury	0.00331	mg/L	E245.1	0.00000892	0.000150	0.003330	0	99.3	80 - 120				
Lab Sample ID: 1508437-001BMS	Date Analyzed:	08/28/2015	1301h										
Test Code:	HG-DW-245.1	Date Prepared:	08/27/2015	1530h									
Mercury	0.00348	mg/L	E245.1	0.00000892	0.000150	0.003330	0	104	80 - 120				
Lab Sample ID: 1508436-001CMS	Date Analyzed:	08/27/2015	1000h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00355	mg/L	E245.1	0.00000892	0.000150	0.003330	0	107	85 - 115				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508437-001CMS	Date Analyzed:	08/27/2015	1016h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00350	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115				
Lab Sample ID: 1508435-001CMS	Date Analyzed:	08/27/2015	947h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00320	mg/L	E245.1	0.00000892	0.000150	0.003330	0	95.9	85 - 115				

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

1508435-002BMS: Internal standard areas were outside of the QC limits. Reanalysis and/or MS and/or MSD samples yielded similar results indicating matrix interference.

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



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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: 1508437
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
Lab Sample ID: 1508437-003CMSD													
Date Analyzed:	09/02/2015 1004h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	72.0	mg/L	E200.7	0.401	10.0	10.00	62.7	93.1	70 - 130	72.9	1.23	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 1041h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.899	mg/L	E200.7	0.0767	0.100	1.000	0	89.9	70 - 130	0.898	0.103	20	
Magnesium	23.1	mg/L	E200.7	0.0294	1.00	10.00	12.8	103	70 - 130	24.1	4.31	20	
Potassium	13.4	mg/L	E200.7	0.247	1.00	10.00	2.92	105	70 - 130	13.8	3.21	20	
Sodium	45.5	mg/L	E200.7	0.0330	1.00	10.00	36	95.2	70 - 130	47.1	3.39	20	
Lab Sample ID: 1508436-002CMSD													
Date Analyzed:	09/02/2015 1104h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.906	mg/L	E200.7	0.0767	0.100	1.000	0	90.6	70 - 130	0.894	1.30	20	
Magnesium	23.7	mg/L	E200.7	0.0294	1.00	10.00	12.9	108	70 - 130	23.5	0.931	20	
Potassium	13.3	mg/L	E200.7	0.247	1.00	10.00	2.75	105	70 - 130	13.2	0.288	20	
Sodium	47.1	mg/L	E200.7	0.0330	1.00	10.00	36.1	111	70 - 130	46.8	0.718	20	
Lab Sample ID: 1508437-003CMSD													
Date Analyzed:	09/02/2015 1121h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Iron	0.866	mg/L	E200.7	0.0767	0.100	1.000	0	86.6	70 - 130	0.876	1.09	20	
Magnesium	23.6	mg/L	E200.7	0.0294	1.00	10.00	13.4	102	70 - 130	24.1	2.20	20	
Potassium	13.0	mg/L	E200.7	0.247	1.00	10.00	2.62	104	70 - 130	13	0.377	20	
Sodium	47.6	mg/L	E200.7	0.0330	1.00	10.00	37.5	102	70 - 130	49	2.83	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 917h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	75.9	mg/L	E200.7	0.401	10.0	10.00	66.4	95.0	70 - 130	78.4	3.22	20	
Lab Sample ID: 1508436-002CMSD													
Date Analyzed:	09/02/2015 940h												
Test Code:	200.7-DIS												
Date Prepared:	08/21/2015 1341h												
Calcium	72.1	mg/L	E200.7	0.401	10.0	10.00	64.5	75.7	70 - 130	74.4	3.24	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508436-002CMSD	Date Analyzed:	09/03/2015	1020h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.10	mg/L	E200.7	0.0237	0.100	1.000	0.0329	106	70 - 130	1.1	0.0436	20	
Lab Sample ID: 1508437-003CMSD	Date Analyzed:	09/03/2015	1037h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.06	mg/L	E200.7	0.0237	0.100	1.000	0	106	70 - 130	1.06	0.837	20	
Lab Sample ID: 1508435-002CMSD	Date Analyzed:	09/03/2015	957h										
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	1341h									
Aluminum	1.04	mg/L	E200.7	0.0237	0.100	1.000	0	104	70 - 130	1.07	3.49	20	
Lab Sample ID: 1508435-002BMSD	Date Analyzed:	09/01/2015	1130h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	89.1	mg/L	E200.7	0.401	10.0	10.00	78.4	107	70 - 130	87.3	2.05	20	
Lab Sample ID: 1508436-001BMSD	Date Analyzed:	09/01/2015	1151h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	84.4	mg/L	E200.7	0.401	10.0	10.00	74.5	98.8	70 - 130	86.8	2.76	20	
Lab Sample ID: 1508437-001BMSD	Date Analyzed:	09/01/2015	1213h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Calcium	81.6	mg/L	E200.7	0.401	10.0	10.00	73.2	83.7	70 - 130	77.1	5.65	20	
Lab Sample ID: 1508435-002BMSD	Date Analyzed:	09/01/2015	1236h										
Test Code:	200.7-W	Date Prepared:	08/21/2015	1311h									
Aluminum	12.9	mg/L	E200.7	0.0237	0.100	1.000	7.32	560	70 - 130	13.2	1.82	20	1
Iron	8.40	mg/L	E200.7	0.0767	0.100	1.000	6.24	216	70 - 130	8.59	2.20	20	1
Magnesium	25.0	mg/L	E200.7	0.0294	1.00	10.00	15.5	95.1	70 - 130	24.8	0.601	20	
Potassium	14.3	mg/L	E200.7	0.247	1.00	10.00	4.23	101	70 - 130	14.2	0.460	20	
Sodium	41.3	mg/L	E200.7	0.0330	1.00	10.00	32.4	89.4	70 - 130	40.5	2.12	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508436-001BMSD													
Date Analyzed:	09/01/2015 1250h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	13.4	mg/L	E200.7	0.0237	0.100	1.000	7.11	631	70 - 130	13.9	3.53	20	2
Iron	7.54	mg/L	E200.7	0.0767	0.100	1.000	5.21	234	70 - 130	7.81	3.53	20	2
Magnesium	24.6	mg/L	E200.7	0.0294	1.00	10.00	15.2	94.7	70 - 130	25.2	2.27	20	
Potassium	14.3	mg/L	E200.7	0.247	1.00	10.00	4.09	102	70 - 130	14.5	1.53	20	
Sodium	42.9	mg/L	E200.7	0.0330	1.00	10.00	33.5	93.1	70 - 130	43.9	2.33	20	
Lab Sample ID: 1508437-001BMSD													
Date Analyzed:	09/01/2015 1313h												
Test Code:	200.7-W												
Date Prepared:	08/21/2015 1311h												
Aluminum	10.1	mg/L	E200.7	0.0237	0.100	1.000	5.79	430	70 - 130	10.2	1.31	20	1
Iron	6.00	mg/L	E200.7	0.0767	0.100	1.000	4.33	167	70 - 130	6.11	1.88	20	1
Magnesium	23.7	mg/L	E200.7	0.0294	1.00	10.00	14.6	91.2	70 - 130	23.9	0.806	20	
Potassium	13.7	mg/L	E200.7	0.247	1.00	10.00	3.78	99.2	70 - 130	13.7	0.139	20	
Sodium	42.5	mg/L	E200.7	0.0330	1.00	10.00	34.8	77.3	70 - 130	42.9	0.758	20	
Lab Sample ID: 1508435-002CMSD													
Date Analyzed:	09/02/2015 2243h												
Test Code:	200.8-DIS												
Date Prepared:	08/21/2015 1341h												
Antimony	0.186	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000583	92.6	75 - 125	0.19	2.23	20	
Arsenic	0.199	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00146	98.7	75 - 125	0.203	1.95	20	
Barium	0.320	mg/L	E200.8	0.000538	0.00200	0.2000	0.138	90.8	75 - 125	0.329	2.94	20	
Beryllium	0.191	mg/L	E200.8	0.0000288	0.00200	0.2000	0	95.6	75 - 125	0.199	4.22	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.6	75 - 125	0.19	2.45	20	
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.7	75 - 125	0.194	1.28	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000643	95.0	75 - 125	0.193	1.72	20	
Copper	0.195	mg/L	E200.8	0.000692	0.00200	0.2000	0.00225	96.2	75 - 125	0.199	1.96	20	
Lead	0.183	mg/L	E200.8	0.000264	0.00200	0.2000	0.000382	91.6	75 - 125	0.189	3.06	20	
Manganese	0.193	mg/L	E200.8	0.00153	0.00200	0.2000	0.00155	95.9	75 - 125	0.195	0.755	20	
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.00194	95.1	75 - 125	0.198	3.03	20	
Nickel	0.188	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.2	75 - 125	0.193	2.35	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00057	94.4	75 - 125	0.192	1.55	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508435-002CMSD		Date Analyzed:	09/02/2015 2243h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	88.1	75 - 125	0.183	3.81	20	
Thallium	0.179	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.3	75 - 125	0.184	2.80	20	
Vanadium	0.196	mg/L	E200.8	0.000438	0.00440	0.2000	0.00238	97.1	75 - 125	0.2	1.65	20	
Zinc	0.967	mg/L	E200.8	0.00476	0.00500	1.000	0.0123	95.5	75 - 125	0.974	0.710	20	
Lab Sample ID: 1508436-002CMSD		Date Analyzed:	09/02/2015 2316h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Antimony	0.187	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000513	93.2	75 - 125	0.187	0.249	20	
Arsenic	0.200	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00132	99.2	75 - 125	0.198	0.701	20	
Barium	0.304	mg/L	E200.8	0.000538	0.00200	0.2000	0.122	91.0	75 - 125	0.307	0.913	20	
Beryllium	0.196	mg/L	E200.8	0.0000288	0.00200	0.2000	0	97.8	75 - 125	0.196	0.399	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.5	75 - 125	0.187	1.21	20	
Chromium	0.190	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.1	75 - 125	0.193	1.18	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.0000747	95.1	75 - 125	0.192	0.974	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00191	96.3	75 - 125	0.196	0.906	20	
Lead	0.184	mg/L	E200.8	0.000264	0.00200	0.2000	0	91.9	75 - 125	0.187	1.50	20	
Manganese	0.190	mg/L	E200.8	0.00153	0.00200	0.2000	0.00179	94.3	75 - 125	0.193	1.40	20	
Molybdenum	0.193	mg/L	E200.8	0.000206	0.00200	0.2000	0.00196	95.5	75 - 125	0.195	0.995	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.7	75 - 125	0.191	0.817	20	
Selenium	0.190	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000564	94.9	75 - 125	0.191	0.269	20	
Silver	0.179	mg/L	E200.8	0.0000244	0.00200	0.2000	0	89.7	75 - 125	0.181	0.640	20	
Thallium	0.178	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.0	75 - 125	0.18	1.38	20	
Vanadium	0.195	mg/L	E200.8	0.000438	0.00440	0.2000	0.00246	96.4	75 - 125	0.197	1.12	20	
Zinc	0.961	mg/L	E200.8	0.00476	0.00500	1.000	0.00868	95.3	75 - 125	0.97	0.928	20	
Lab Sample ID: 1508437-003CMSD		Date Analyzed:	09/02/2015 2342h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Antimony	0.186	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000994	92.3	75 - 125	0.183	1.43	20	
Arsenic	0.197	mg/L	E200.8	0.0000920	0.00200	0.2000	0.0014	97.8	75 - 125	0.199	0.972	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508437-003CMSD		Date Analyzed:	09/02/2015 2342h										
Test Code: 200.8-DIS		Date Prepared:	08/21/2015 1341h										
Barium	0.314	mg/L	E200.8	0.000538	0.00200	0.2000	0.128	92.9	75 - 125	0.311	0.799	20	
Beryllium	0.193	mg/L	E200.8	0.0000288	0.00200	0.2000	0	96.3	75 - 125	0.19	1.10	20	
Cadmium	0.185	mg/L	E200.8	0.000193	0.000500	0.2000	0	92.6	75 - 125	0.183	1.13	20	
Chromium	0.191	mg/L	E200.8	0.00154	0.00200	0.2000	0	95.4	75 - 125	0.191	0.00603	20	
Cobalt	0.190	mg/L	E200.8	0.0000434	0.00400	0.2000	0.000071	94.9	75 - 125	0.19	0.223	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00193	96.2	75 - 125	0.195	0.574	20	
Lead	0.183	mg/L	E200.8	0.000264	0.00200	0.2000	0	91.7	75 - 125	0.181	1.32	20	
Manganese	0.191	mg/L	E200.8	0.00153	0.00200	0.2000	0	95.7	75 - 125	0.19	0.928	20	
Molybdenum	0.192	mg/L	E200.8	0.000206	0.00200	0.2000	0.0018	95.3	75 - 125	0.191	0.655	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0	94.3	75 - 125	0.189	0.384	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.00066	94.1	75 - 125	0.19	0.424	20	
Silver	0.176	mg/L	E200.8	0.0000244	0.00200	0.2000	0	88.0	75 - 125	0.176	0.139	20	
Thallium	0.178	mg/L	E200.8	0.0000242	0.00200	0.2000	0	89.0	75 - 125	0.176	0.929	20	
Vanadium	0.194	mg/L	E200.8	0.000438	0.00440	0.2000	0.00214	95.8	75 - 125	0.196	1.12	20	
Zinc	0.967	mg/L	E200.8	0.00476	0.00500	1.000	0.00664	96.1	75 - 125	0.962	0.555	20	
Lab Sample ID: 1508435-002BMSD		Date Analyzed:	09/02/2015 1705h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.146	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000765	72.6	75 - 125	0.141	3.41	20	1
Arsenic	0.197	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00334	96.7	75 - 125	0.196	0.426	20	
Barium	0.364	mg/L	E200.8	0.000538	0.00200	0.2000	0.184	90.0	75 - 125	0.369	1.42	20	
Beryllium	0.217	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000535	108	75 - 125	0.213	1.60	20	
Cadmium	0.182	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.2	75 - 125	0.178	2.27	20	
Chromium	0.199	mg/L	E200.8	0.00154	0.00200	0.2000	0.00417	97.3	75 - 125	0.199	0.119	20	
Cobalt	0.195	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00319	96.0	75 - 125	0.195	0.0536	20	
Copper	0.201	mg/L	E200.8	0.000692	0.00200	0.2000	0.0101	95.4	75 - 125	0.201	0.141	20	
Lead	0.188	mg/L	E200.8	0.000264	0.00200	0.2000	0.00824	89.7	75 - 125	0.184	1.70	20	
Manganese	0.428	mg/L	E200.8	0.00153	0.00200	0.2000	0.239	94.7	75 - 125	0.432	0.905	20	
Molybdenum	0.196	mg/L	E200.8	0.000206	0.00200	0.2000	0.00158	97.2	75 - 125	0.192	1.95	20	



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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
Lab Sample ID: 1508435-002BMSD		Date Analyzed:	09/02/2015 1705h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Nickel	0.196	mg/L	E200.8	0.000754	0.00200	0.2000	0.00522	95.5	75 - 125	0.196	0.192	20	
Selenium	0.186	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000721	92.6	75 - 125	0.183	1.51	20	
Silver	0.165	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000634	82.7	75 - 125	0.162	2.11	20	
Thallium	0.176	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000399	88.1	75 - 125	0.174	1.41	20	
Vanadium	0.212	mg/L	E200.8	0.000438	0.00440	0.2000	0.0131	99.6	75 - 125	0.213	0.340	20	
Zinc	1.00	mg/L	E200.8	0.00476	0.00500	1.000	0.0323	97.1	75 - 125	0.994	0.955	20	
Lab Sample ID: 1508436-001BMSD		Date Analyzed:	09/03/2015 903h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.154	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000209	77.1	75 - 125	0.153	0.924	20	
Arsenic	0.196	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00313	96.4	75 - 125	0.195	0.263	20	
Barium	0.374	mg/L	E200.8	0.000538	0.00200	0.2000	0.187	93.2	75 - 125	0.377	0.799	20	
Beryllium	0.194	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000457	96.9	75 - 125	0.196	1.01	20	
Cadmium	0.190	mg/L	E200.8	0.000193	0.000500	0.2000	0	95.2	75 - 125	0.192	1.01	20	
Chromium	0.195	mg/L	E200.8	0.00154	0.00200	0.2000	0.00383	95.6	75 - 125	0.194	0.395	20	
Cobalt	0.192	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00266	94.8	75 - 125	0.192	0.333	20	
Copper	0.198	mg/L	E200.8	0.000692	0.00200	0.2000	0.00851	94.6	75 - 125	0.197	0.195	20	
Lead	0.196	mg/L	E200.8	0.000264	0.00200	0.2000	0.00715	94.7	75 - 125	0.197	0.365	20	
Manganese	0.377	mg/L	E200.8	0.00153	0.00200	0.2000	0.182	97.3	75 - 125	0.374	0.792	20	
Molybdenum	0.189	mg/L	E200.8	0.000206	0.00200	0.2000	0.00149	93.5	75 - 125	0.189	0.383	20	
Nickel	0.193	mg/L	E200.8	0.000754	0.00200	0.2000	0.00481	94.2	75 - 125	0.193	0.000713	20	
Selenium	0.189	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000694	94.1	75 - 125	0.187	0.962	20	
Silver	0.167	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000541	83.4	75 - 125	0.168	0.789	20	
Thallium	0.184	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000502	92.0	75 - 125	0.185	0.341	20	
Vanadium	0.207	mg/L	E200.8	0.000438	0.00440	0.2000	0.012	97.3	75 - 125	0.206	0.106	20	
Zinc	0.982	mg/L	E200.8	0.00476	0.00500	1.000	0.023	95.9	75 - 125	0.985	0.384	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508437

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
Lab Sample ID: 1508437-001BMSD		Date Analyzed:	09/03/2015 935h										
Test Code: 200.8-W		Date Prepared:	08/21/2015 1311h										
Antimony	0.167	mg/L	E200.8	0.0000366	0.00200	0.2000	0.000198	83.3	75 - 125	0.172	2.94	20	
Arsenic	0.191	mg/L	E200.8	0.0000920	0.00200	0.2000	0.00292	93.9	75 - 125	0.193	1.19	20	
Barium	0.336	mg/L	E200.8	0.000538	0.00200	0.2000	0.161	87.5	75 - 125	0.344	2.28	20	
Beryllium	0.191	mg/L	E200.8	0.0000288	0.00200	0.2000	0.000342	95.4	75 - 125	0.194	1.41	20	
Cadmium	0.184	mg/L	E200.8	0.000193	0.000500	0.2000	0	91.8	75 - 125	0.189	2.80	20	
Chromium	0.190	mg/L	E200.8	0.00154	0.00200	0.2000	0.00309	93.6	75 - 125	0.191	0.390	20	
Cobalt	0.189	mg/L	E200.8	0.0000434	0.00400	0.2000	0.00199	93.3	75 - 125	0.19	0.599	20	
Copper	0.194	mg/L	E200.8	0.000692	0.00200	0.2000	0.00684	93.7	75 - 125	0.196	0.789	20	
Lead	0.190	mg/L	E200.8	0.000264	0.00200	0.2000	0.00517	92.5	75 - 125	0.192	1.10	20	
Manganese	0.319	mg/L	E200.8	0.00153	0.00200	0.2000	0.136	91.5	75 - 125	0.323	1.12	20	
Molybdenum	0.188	mg/L	E200.8	0.000206	0.00200	0.2000	0.00163	93.1	75 - 125	0.191	1.58	20	
Nickel	0.189	mg/L	E200.8	0.000754	0.00200	0.2000	0.00324	92.7	75 - 125	0.19	0.971	20	
Selenium	0.184	mg/L	E200.8	0.0000634	0.00200	0.2000	0.000631	91.5	75 - 125	0.186	1.16	20	
Silver	0.151	mg/L	E200.8	0.0000244	0.00200	0.2000	0.0000482	75.3	75 - 125	0.174	14.4	20	
Thallium	0.180	mg/L	E200.8	0.0000242	0.00200	0.2000	0.0000372	90.0	75 - 125	0.182	1.11	20	
Vanadium	0.201	mg/L	E200.8	0.000438	0.00440	0.2000	0.0104	95.1	75 - 125	0.2	0.294	20	
Zinc	0.966	mg/L	E200.8	0.00476	0.00500	1.000	0.0187	94.8	75 - 125	0.959	0.755	20	
Lab Sample ID: 1508436-001BMSD		Date Analyzed:	08/28/2015 1247h										
Test Code: HG-DW-245.1		Date Prepared:	08/27/2015 1530h										
Mercury	0.00333	mg/L	E245.1	0.00000892	0.000150	0.003330	0	99.9	80 - 120	0.00331	0.603	20	
Lab Sample ID: 1508437-001BMSD		Date Analyzed:	08/28/2015 1303h										
Test Code: HG-DW-245.1		Date Prepared:	08/27/2015 1530h										
Mercury	0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	101	80 - 120	0.00348	2.97	20	
Lab Sample ID: 1508436-001CMSD		Date Analyzed:	08/27/2015 1002h										
Test Code: HG-DW-DIS-245.1		Date Prepared:	08/26/2015 1550h										
Mercury	0.00321	mg/L	E245.1	0.00000892	0.000150	0.003330	0	96.5	85 - 115	0.00355	9.96	20	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508437-001CMSD	Date Analyzed:	08/27/2015	1018h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00317	mg/L	E245.1	0.00000892	0.000150	0.003330	0	95.2	85 - 115	0.0035	9.94	20	
Lab Sample ID: 1508435-001CMSD	Date Analyzed:	08/27/2015	949h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/2015	1550h									
Mercury	0.00329	mg/L	E245.1	0.00000892	0.000150	0.003330	0	98.9	85 - 115	0.0032	3.03	20	

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

1508435-002BMSD: Internal standard areas were outside of the QC limits. Reanalysis and/or MS and/or MSD samples yielded similar results indicating matrix interference.

² - 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: 1508437
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
Lab Sample ID: 1508435-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	660	µmhos/cm	SM2510B	0.436	2.00					661	0.151	5	
Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	655	µmhos/cm	SM2510B	0.436	2.00					658	0.457	5	
Lab Sample ID: 1508437-001ADUP Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	697	µmhos/cm	SM2510B	0.436	2.00					699	0.287	5	
Lab Sample ID: 1508435-005ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.24	pH Units	SM4500-H+B	1.00	1.00					8.26	0.242	5	H
Lab Sample ID: 1508436-005ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.50	pH Units	SM4500-H+B	1.00	1.00					8.52	0.235	5	H
Lab Sample ID: 1508437-004ADUP Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.32	pH Units	SM4500-H+B	1.00	1.00					8.33	0.120	5	H
Lab Sample ID: 1508435-001ADUP Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	430	mg/L	SM2540C	30.6	50.0					320	29.3	5	@
Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	340	mg/L	SM2540C	30.6	50.0					350	2.90	5	



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508437-001ADUP													
Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	410	mg/L	SM2540C	30.6	50.0					320	24.7	5	@
Lab Sample ID: 1508435-003ADUP													
Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	196	mg/L	SM2540D	14.2	15.0					212	7.84	5	@
Lab Sample ID: 1508436-001ADUP													
Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	306	mg/L	SM2540D	14.2	15.0					290	5.37	5	@
Lab Sample ID: 1508437-002ADUP													
Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	288	mg/L	SM2540D	14.2	15.0					312	8.00	5	@

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

H - Sample was received outside of the holding time.



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: LCS-R82125 Date Analyzed: 08/25/2015 1423h													
Test Code: 300.0-W													
Chloride	5.16	mg/L	E300.0	0.00751	0.100	5.000	0	103	90 - 110				
Sulfate	5.03	mg/L	E300.0	0.0211	0.750	5.000	0	101	90 - 110				
Lab Sample ID: LCS-R82043 Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	50,700	mg/L	SM2320B	1.86	10.0	50,000	0	101	90 - 110				
Lab Sample ID: LCS-R82041 Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	998	µmhos/cm	SM2510B	0.436	2.00	1,000	0	99.8	98 - 102				
Lab Sample ID: LCS-R82355 Date Analyzed: 08/31/2015 1704h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.999	mg/L	E353.2	0.00833	0.0100	1.000	0	99.9	90 - 110				
Lab Sample ID: LCS-R82023 Date Analyzed: 08/21/2015 1718h													
Test Code: PH-4500H+B													
pH @ 25° C	8.90	pH Units	SM4500-H+B	1.00	1.00	9.000	0	98.9	98 - 102				
Lab Sample ID: LCS-38918 Date Analyzed: 09/01/2015 1036h													
Test Code: PO4-W-4500PF Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	0.932	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0	93.2	90 - 110				
Lab Sample ID: LCS-R82062 Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	198	mg/L	SM2540C	6.13	10.0	205.0	0	96.6	80 - 120				
Lab Sample ID: LCS-R82048 Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	92.0	mg/L	SM2540D	2.83	3.00	100.0	0	92.0	80 - 120				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality

Lab Set ID: 1508437

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
Lab Sample ID: MB-R82125													
Date Analyzed: 08/25/2015 1406h													
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
Lab Sample ID: MB-R82043													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Bicarbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Carbonate (as CaCO3)	< 10.0	mg/L	SM2320B	1.86	10.0								U
Lab Sample ID: MB-R82041													
Date Analyzed: 08/24/2015 714h													
Test Code: COND-W-2510B													
Conductivity	< 2.00	µmhos/cm	SM2510B	0.436	2.00								U
Lab Sample ID: MB-R82355													
Date Analyzed: 08/31/2015 1701h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00833	0.0100								U
Lab Sample ID: MB-38918													
Date Analyzed: 09/01/2015 1035h													
Test Code: PO4-W-4500PF													
Date Prepared: 08/31/2015 1450h													
Phosphate, Total (as P)	0.0230	mg/L	SM4500-P-F	0.0212	0.0500								JB
Lab Sample ID: MB-R82062													
Date Analyzed: 08/21/2015 1250h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	6.13	10.0								U
Lab Sample ID: MB-R82048													
Date Analyzed: 08/21/2015 1550h													
Test Code: TSS-W-2540D													
Total Suspended Solids	< 3.00	mg/L	SM2540D	2.83	3.00								U



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
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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: 1508437
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
Lab Sample ID: 1508435-001AMS Date Analyzed: 08/25/2015 1655h													
Test Code: 300.0-W													
Chloride	64.0	mg/L	E300.0	0.0751	1.00	50.00	15.5	97.1	90 - 110				
Sulfate	190	mg/L	E300.0	0.211	7.50	50.00	143	94.9	90 - 110				
Lab Sample ID: 1508436-001AMS Date Analyzed: 08/25/2015 1853h													
Test Code: 300.0-W													
Chloride	63.7	mg/L	E300.0	0.0751	1.00	50.00	15.6	96.2	90 - 110				
Sulfate	186	mg/L	E300.0	0.211	7.50	50.00	140	92.8	90 - 110				
Lab Sample ID: 1508437-001AMS Date Analyzed: 08/25/2015 2124h													
Test Code: 300.0-W													
Chloride	63.9	mg/L	E300.0	0.0751	1.00	50.00	15.7	96.4	90 - 110				
Sulfate	188	mg/L	E300.0	0.211	7.50	50.00	142	93.2	90 - 110				
Lab Sample ID: 1508435-001AMS Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	213	mg/L	SM2320B	1.86	10.0	100.0	115	98.0	80 - 120				
Lab Sample ID: 1508436-001AMS Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	226	mg/L	SM2320B	1.86	10.0	100.0	123	103	80 - 120				
Lab Sample ID: 1508437-001AMS Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	225	mg/L	SM2320B	1.86	10.0	100.0	122	103	80 - 120				
Lab Sample ID: 1508437-001DMS NO3 Date Analyzed: 08/31/2015 1709h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.851	mg/L	E353.2	0.00833	0.0100	1.000	0	85.1	90 - 110				1



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508435-005DMS	Date Analyzed:	09/01/2015	1040h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.64	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.743	90.2	90 - 110				
Lab Sample ID: 1508436-005DMS	Date Analyzed:	09/01/2015	1048h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.51	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.613	89.9	90 - 110				§
Lab Sample ID: 1508437-004DMS	Date Analyzed:	09/01/2015	1057h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.09	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.109	98.3	90 - 110				

§ - QC limits are set with an accuracy of two significant figures, therefore the recovery rounds to an acceptable value within the control limits.

! - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.



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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: 1508437
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
Lab Sample ID: 1508435-001AMSD													
Date Analyzed: 08/25/2015 1712h													
Test Code: 300.0-W													
Chloride	64.4	mg/L	E300.0	0.0751	1.00	50.00	15.5	97.8	90 - 110	64	0.540	20	
Sulfate	190	mg/L	E300.0	0.211	7.50	50.00	143	94.6	90 - 110	190	0.0751	20	
Lab Sample ID: 1508436-001AMSD													
Date Analyzed: 08/25/2015 1909h													
Test Code: 300.0-W													
Chloride	63.8	mg/L	E300.0	0.0751	1.00	50.00	15.6	96.4	90 - 110	63.7	0.134	20	
Sulfate	187	mg/L	E300.0	0.211	7.50	50.00	140	94.3	90 - 110	186	0.389	20	
Lab Sample ID: 1508437-001AMSD													
Date Analyzed: 08/25/2015 2141h													
Test Code: 300.0-W													
Chloride	63.8	mg/L	E300.0	0.0751	1.00	50.00	15.7	96.3	90 - 110	63.9	0.124	20	
Sulfate	189	mg/L	E300.0	0.211	7.50	50.00	142	95.7	90 - 110	188	0.666	20	
Lab Sample ID: 1508435-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	216	mg/L	SM2320B	1.86	10.0	100.0	115	101	80 - 120	213	1.58	10	
Lab Sample ID: 1508436-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	230	mg/L	SM2320B	1.86	10.0	100.0	123	106	80 - 120	227	1.45	10	
Lab Sample ID: 1508437-001AMSD													
Date Analyzed: 08/24/2015 754h													
Test Code: ALK-W-2320B													
Alkalinity (as CaCO ₃)	223	mg/L	SM2320B	1.86	10.0	100.0	122	101	80 - 120	225	0.759	10	
Lab Sample ID: 1508437-001DMSD NO3													
Date Analyzed: 08/31/2015 1711h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	0.800	mg/L	E353.2	0.00833	0.0100	1.000	0	80.0	90 - 110	0.851	6.16	10	1



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1508437
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
Lab Sample ID: 1508435-005DMSD	Date Analyzed:	09/01/2015	1041h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.65	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.743	90.8	90 - 110	1.65	0.364	10	
Lab Sample ID: 1508436-005DMSD	Date Analyzed:	09/01/2015	1049h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.53	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.613	91.9	90 - 110	1.51	1.31	10	
Lab Sample ID: 1508437-004DMSD	Date Analyzed:	09/01/2015	1057h										
Test Code:	PO4-W-4500PF	Date Prepared:	08/31/2015	1450h									
Phosphate, Total (as P)	1.07	mg/L	SM4500-P-F	0.0212	0.0500	1.000	0.109	96.2	90 - 110	1.09	1.94	10	

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

WORK ORDER Summary

Work Order: **1508437** Page 1 of 4

Client: Utah Division of Water Quality
Client ID: UTD200
Project: Gold King Mine - San Juan River Sampling
Comments: QC 2+. Flag any concentrations detected less than RL and at or greater than the MDL with a J flag. Include EDD. Samples for Dissolved Metals were field filtered. Cc: jamesharris@utah.gov and Trisha Johnson;

Contact: Lenora Sullivan

Due Date: 9/4/2015

QC Level: II+ MDL

WO Type: Standard

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508437-001A	San Juan R at Mexican Hat US163 Xing (4953000)	8/20/2015 0656h	8/21/2015 0926h	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
				PH-4500H+B			df - wc
				TDS-W-2540C			df - wc
				TSS-W-2540D			df - wc
1508437-001B				200.7-W			df - metals
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-W-PR			df - metals
				200.8-W			df - 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 - metals
				HARD-2340B			df - metals
				HG-DW-245.1			df - metals
				HG-DW-PR			df - metals
1508437-001C				200.7-DIS			df - dis met
				<i>6 SEL Analytes: AL CA FE MG K NA</i>			
				200.7-DIS-PR			df - dis met
				200.8-DIS			df - dis met
				<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 met
				HARD-2340B			df - dis met
				<i>1 SEL Analytes: HARD</i>			
				HG-DW-DIS-245.1			df - dis met
				HG-DW-DIS-PR			df - dis met
1508437-001D				NO2/NO3-W-353.2			df - no2/no3
				PO4-W-4500PF			df - no2/no3

WORK ORDER Summary

Work Order: **1508437** Page 2 of 4

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508437-001D	San Juan R at Mexican Hat US163 Xing (4953000)	8/20/2015 0656h	8/21/2015 0926h	PO4-W-PR	Aqueous		df - no2/no3 1
1508437-002A	San Juan R at Sand Island (4953250)	8/20/2015 0721h	8/21/2015 0926h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc 1
				ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC			df - wc
				COND-W-2510B			df - wc
				PH-4500H+B			df - wc
				TDS-W-2540C			df - wc
				TSS-W-2540D			df - wc
1508437-002B				200.7-W 6 SEL Analytes: AL CA FE MG K NA			df - metals
				200.7-W-PR			df - metals
				200.8-W 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - metals
				200.8-W-PR			df - metals
				HARD-2340B			df - metals
				HG-DW-245.1			df - metals
				HG-DW-PR			df - metals
1508437-002C				200.7-DIS 6 SEL Analytes: AL CA FE MG K NA			df - dis met
				200.7-DIS-PR			df - dis met
				200.8-DIS 17 SEL Analytes: SB AS BA BE CD CR CO CU PB MN MO NI SE AG TL V ZN			df - dis met
				200.8-DIS-PR			df - dis met
				HARD-2340B 1 SEL Analytes: HARD			df - dis met
				HG-DW-DIS-245.1			df - dis met
				HG-DW-DIS-PR			df - dis met
1508437-002D				NO2/NO3-W-353.2			df - no2/no3
				PO4-W-4500PF			df - no2/no3
				PO4-W-PR			df - no2/no3
1508437-003A	San Juan River at Town of Montezuma (4953990)	8/20/2015 0859h	8/21/2015 0926h	300.0-W 2 SEL Analytes: CL SO4	Aqueous		df - wc 1
				ALK-W-2320B 3 SEL Analytes: ALK ALKB ALKC			df - wc

WORK ORDER Summary

Work Order: **1508437**

Page 3 of 4

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1508437-003A	San Juan River at Town of Montezuma (4953990)	8/20/2015 0859h	8/21/2015 0926h	COND-W-2510B	Aqueous		df - wc
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
				TSS-W-2540D		df - wc	
1508437-003B				200.7-W			df - metals
				6 SEL Analytes: AL CA FE MG K NA			
				200.7-W-PR		df - metals	
				200.8-W		df - 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 - metals	
				HARD-2340B		df - metals	
				HG-DW-245.1		df - metals	
				HG-DW-PR		df - metals	
				200.7-DIS		df - dis met	
1508437-003C				6 SEL Analytes: AL CA FE MG K NA			
				200.7-DIS-PR	df - dis met		
				200.8-DIS	df - dis met		
				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 met		
				HARD-2340B	df - dis met		
				1 SEL Analytes: HARD			
				HG-DW-DIS-245.1	df - dis met		
				HG-DW-DIS-PR	df - dis met		
				NO2/NO3-W-353.2	df - no2/no3		
1508437-003D				PO4-W-4500PF			df - no2/no3
				PO4-W-PR		df - no2/no3	
1508437-004A	San Juan R at US160 Xing in CO (4954000)	8/20/2015 0944h	8/21/2015 0926h	300.0-W	Aqueous		df - wc
				2 SEL Analytes: CL SO4			
				ALK-W-2320B		df - wc	
				3 SEL Analytes: ALK ALKB ALKC			
				COND-W-2510B		df - wc	
				PH-4500H+B		df - wc	
				TDS-W-2540C		df - wc	
1508437-004B				TSS-W-2540D			df - wc
				200.7-W		df - metals	
				6 SEL Analytes: AL CA FE MG K NA			

WORK ORDER Summary

Work Order: **1508437**

Page 4 of 4

Client: Utah Division of Water Quality

Due Date: 9/4/2015

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage		
1508437-004B	San Juan R at US160 Xing in CO (4954000)	8/20/2015 0944h	8/21/2015 0926h	200.7-W-PR	Aqueous		df - metals		
				200.8-W			df - 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 - metals		
				HARD-2340B			df - metals		
				HG-DW-245.1			df - metals		
				HG-DW-PR			df - metals		
1508437-004C				200.7-DIS			df - dis met		
				6 SEL Analytes: AL CA FE MG K NA					
				200.7-DIS-PR			df - dis met		
				200.8-DIS			df - dis met		
				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 met		
				HARD-2340B			df - dis met		
1508437-004D				1 SEL Analytes: HARD					
				HG-DW-DIS-245.1			df - dis met		
				HG-DW-DIS-PR			df - dis met		
				NO2/NO3-W-353.2			df - no2/no3		
				PO4-W-4500PF			df - no2/no3		
			PO4-W-PR			df - no2/no3			

American West Analytical Laboratories Chain of Custody

Lab Sample Set # 1508437 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~~ *5td.*

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)	Total Nutrients: Phosphate, Nitrate&Nitrite	Comments	Laboratory Use Only
SAN JUAN R AT MEXICAN HAT US163 XING (4953000)	8/20/15	06:56	W						Dissolved Metals samples have been field filtered.	Samples Were: 1 Shipped or hand delivered <input checked="" type="checkbox"/> 2 Ambient or Chilled <input checked="" type="checkbox"/> 3 Temperature <u>11.6</u> 4 Received Broken/Leaking (Improperly Sealed) <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> 5 Properly Preserved <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> 6 Received Within Holding Times <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> PH out of HOLD
SAN JUAN R AT SAND ISLAND (4953250)	8/20/15	07:21	W						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.	COC Tape Was: 1 Present on Outer Package <input checked="" type="checkbox"/> N NA 2 Unbroken on Outer Package <input checked="" type="checkbox"/> Y N NA 3 Present on Sample <input checked="" type="checkbox"/> Y N NA 4 Unbroken on Sample <input checked="" type="checkbox"/> Y N NA 8/20/15 NA Discrepancies Between Sample Labels and COC Records? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N
San Juan River at Town of Montezuma (4953990)	8/20/15	08:59	W							
SAN JUAN R AT US160 XING IN CO (4954000)	8/20/15	09:44	W							

Special Instructions:

Relinquished by: Signature <i>[Signature]</i>	Date: 8/20/15	Received by: Signature <i>[Signature]</i>	Date:
Print Name: Robert W. Bird	Time: 17:40	Print Name:	Time:
Relinquished by: Signature <i>[Signature]</i>	Date: 8/21/15	Received by: Signature <i>[Signature]</i>	Date: 8/21/15
Print Name: Ryan Thomas	Time: 9:20	Print Name: Selma Hayes	Time: 9:20

Preservation Check Sheet

Sample Set Extension and pH

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

- 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.