

3440 South 700 West Salt Lake City, UT 84119 Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687 e-mail: awal@awal-labs.com, web: www.awal-labs.com 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



Salt Lake City, UT 84119

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Contact:

e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

Lenora Sullivan

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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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Lenora Sullivan

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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).

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

Lenora Sullivan

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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:								
-								

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.

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.

Report Date: 9/4/2015 Page 4 of 44



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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.

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

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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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.

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.

Report Date: 9/4/2015 Page 6 of 44



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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.

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.

Report Date: 9/4/2015 Page 7 of 44



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Kyle F. Gross Laboratory Director

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality								
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:									
-									

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.

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.

Report Date: 9/4/2015 Page 8 of 44



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Laboratory Director

Kyle F. Gross

Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality								
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.

Report Date: 9/4/2015 Page 9 of 44



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Jose Rocha QA Officer

Kyle F. Gross

Laboratory Director

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality
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
	9/01/0015 00/ch
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	122	
Bicarbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Carbonate (as CaCO3)		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 CaCO3)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	243	
Hardness, Dissolved (as CaCO3)		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	U1
pH @ 25° C		pH Units		8/21/2015 1718h	SM4500-H+B	1.00	1.00	8.19	Н
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	В
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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Jose Rocha QA Officer

Lenora Sullivan

INORGANIC ANALYTICAL REPORT

Client:	Utah Divisi	Utah Division of Water Quality							
Project:	Gold King	Gold King Mine - San Juan River Sampling							
Lab Sample ID:	1508437-00	508437-002							
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	Н
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	В
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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Jose Rocha QA Officer

INORGANIC ANALYTICAL REPORT

Client:	Utah Divisi	Utah Division of Water Quality								
Project:	Gold King I	Mine - San Juan River Sampling								
Lab Sample ID:	1508437-00)3								
Client Sample ID:	San Juan Ri	ver at Town of Montezuma (4953990)								
Collection Date:	8/20/2015	859h								
Received Date:	8/21/2015	926h								
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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	127	
Bicarbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	123	
Carbonate (as CaCO3)		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 CaCO3)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	234	
Hardness, Dissolved (as CaCO3)		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	Н
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	В
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.

H - Sample was received outside of the holding time.

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



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Jose Rocha QA Officer

Lenora Sullivan

INORGANIC ANALYTICAL REPORT

Client:	Utah Division of Water Quality							
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 CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	118	
Bicarbonate (as CaCO3)		mg/L		8/24/2015 754h	SM2320B	1.86	10.0	115	
Carbonate (as CaCO3)		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 CaCO3)		mg/L		9/1/2015 1530h	SM2340B	10.0	10.0	206	
Hardness, Dissolved (as CaCO3)		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	Н
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	В
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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OC SUMMARY REPORT

Jose Rocha **QA** Officer

ANALYTICAL I	LABORATORIES			$\chi \circ \nu$	UIUIUI									
Client:	Utah Division of Water Quali	ty					Contact:	Lenora Su	ıllivan					
Lab Set ID): 1508437						Dept:	ME						
Project:	Gold King Mine - San Juan R	iver Samp	ling				QC Type:	LCS						
Analyte	I	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual

Lab Set ID: 1 Project: C		an Juan River Sampl	ing				Dept: QC Typ	ME e: LCS			
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt
Lab Sample ID:		Date Analyzed:	09/02/20								
Test Code:	200.7-DIS	Date Prepared:	08/21/20	15 1341h							
Aluminum		1.05	mg/L	E200.7	0.0237	0.100	1.000	0	105	85 - 115	
Calcium		10.2	ma/I	E200.7	0.0401	1.00	10.00	0	102	85 - 115	

Test Code:	200.7-DIS	Date Prepared:	08/21/2015	5 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	5 1112h							
Test Code:	200.7-W	Date Prepared:	08/21/2015	5 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	
Sodium Lab Sample ID:	LCS-38762	10.2 Date Analyzed:	mg/L 09/02/2015		0.0330	1.00	10.00	0	102	85 - 115	
	LCS-38762 200.8-DIS			5 2214h	0.0330	1.00	10.00	0	102	85 - 115	
Lab Sample ID:		Date Analyzed:	09/02/2015	5 2214h	0.0330	0.00200	0.2000	0	102 92.0	85 - 115 85 - 115	
Lab Sample ID: Test Code:		Date Analyzed: Date Prepared:	09/02/2015 08/21/2015	5 2214h 5 1341h							
Lab Sample ID: Test Code: Antimony		Date Analyzed: Date Prepared: 0.184	09/02/2013 08/21/2013 mg/L	5 2214h 5 1341h E200.8	0.0000366	0.00200	0.2000	0	92.0	85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic		Date Analyzed: Date Prepared: 0.184 0.198	09/02/2015 08/21/2015 mg/L mg/L	5 2214h 5 1341h E200.8 E200.8	0.0000366 0.0000920	0.00200 0.00200	0.2000 0.2000	0 0	92.0 98.8	85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium		Date Analyzed: Date Prepared: 0.184 0.198 0.190	09/02/2015 08/21/2015 mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538	0.00200 0.00200 0.00200	0.2000 0.2000 0.2000	0 0 0	92.0 98.8 95.1	85 - 115 85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium		Date Analyzed: Date Prepared: 0.184 0.198 0.190 0.196	09/02/2015 08/21/2015 mg/L mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288	0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000	0 0 0 0	92.0 98.8 95.1 98.2	85 - 115 85 - 115 85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium		Date Analyzed: Date Prepared: 0.184 0.198 0.190 0.196 0.189	09/02/2015 08/21/2015 mg/L mg/L mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193	0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0 0 0 0 0	92.0 98.8 95.1 98.2 94.3	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium		Date Analyzed: Date Prepared: 0.184 0.198 0.190 0.190 0.196 0.189 0.193	09/02/2015 08/21/2015 mg/L mg/L mg/L mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0 0 0 0 0 0	92.0 98.8 95.1 98.2 94.3 96.7	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt		Date Analyzed: Date Prepared: 0.184 0.198 0.190 0.190 0.196 0.189 0.193 0.193	09/02/2015 08/21/2015 mg/L mg/L mg/L mg/L mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00400	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0 0 0 0 0 0 0 0	92.0 98.8 95.1 98.2 94.3 96.7 96.6	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115	
Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper		Date Analyzed: Date Prepared: 0.184 0.198 0.190 0.190 0.196 0.193 0.193 0.193 0.196	09/02/2015 08/21/2015 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	5 2214h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.0000692	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00400 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0 0 0 0 0 0 0 0 0	92.0 98.8 95.1 98.2 94.3 96.7 96.6 97.8	85 - 115 85 - 115	

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Silver

0.197

mg/L

E200.8

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Jose Rocha QA Officer

QC SUMMARY REPORT

Americal LAB	BORATORIES			QC	SUMMA	ARY RE	PORT							
Client:	Utah Division of Wa	ater Quality					Contact:	Lenora S	ullivan					
Lab Set ID:	1508437						Dept:	ME						
Project:	Gold King Mine - S	an Juan River Sampli	ing				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:	09/02/201	5 2214h										
Test Code:	200.8-DIS	Date Prepared:	08/21/201	5 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:	09/02/201	5 1645h										
Test Code:	200.8-W	Date Prepared:	08/21/201	5 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:	09/04/201	5 900h										
Test Code:	200.8-W	Date Prepared:	08/21/201	5 1311h										

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All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

0.00200

0.2000

0

98.5

85 - 115

0.0000244



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Jose Rocha QA Officer

QC SUMMARY REPORT Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: ME QC Type: LCS Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Units Method MDL %REC % RPD Result Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: LCS-38874 08/28/2015 1238h Date Analyzed: Test Code: HG-DW-245.1 Date Prepared: 08/27/2015 1530h 0.00335 0.00000892 0.000150 0.003330 0 100 85 - 115 E245.1 Mercury mg/L Lab Sample ID: LCS-38852 Date Analyzed: 08/27/2015 937h HG-DW-DIS-245.1 Test Code: Date Prepared: 08/26/2015 1550h 0 Mercury 0.00344 0.00000892 0.000150 0.003330 103 85 - 115 mg/L E245.1

Report Date: 9/4/2015 Page 16 of 44



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Jose Rocha QA Officer

American West 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: 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:	09/02/20	15 901h										
Test Code:	200.7-DIS	Date Prepared:	08/21/20	15 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:	09/01/20	15 1109h										
Test Code:	200.7-W	Date Prepared:	08/21/20	15 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:	09/02/20	15 2210h										
Test Code:	200.8-DIS	Date Prepared:	08/21/20	15 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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Jose Rocha QA Officer

QC SUMMARY REPORT

		Barrantin America	S	DDD
Project:	Gold King Mine - San Juan River Sampling	QC Type:	MBLK	
Lab Set II	D: 1508437	Dept:	ME	
Client:	Utah Division of Water Quality	Contact:	Lenora Sullivan	

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:	09/02/20	15 2210h										
Test Code:	200.8-DIS	Date Prepared:	08/21/20	15 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:	09/02/20	15 1642h										
Test Code:	200.8-W	Date Prepared:	08/21/20	15 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

Report Date: 9/4/2015 Page 18 of 44



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Jose Rocha QA Officer

QC SUMMARY REPORT Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: ME QC Type: MBLK Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Result Units Method MDL Limit Spiked %REC Limits % RPD Limit Analyte Amt Oual Amount

i iliui y te		Itesuit	emis		INID L	Linit	брикси	mount	, viii	Linnes	1 mile	/ • 14 B	Linit	Quui
Lab Sample ID:	MB-38874	Date Analyzed:	08/28/201	5 1236h										
Test Code:	HG-DW-245.1	Date Prepared:	08/27/201	5 1530h										
Mercury		< 0.000150	mg/L	E245.1	0.00000892	0.000150								U
Lab Sample ID:	MB-38852	Date Analyzed:	08/27/201	5 935h										
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/201	5 1550h										
Mercury		< 0.000150	mg/L	E245.1	0.00000892	0.000150								I

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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Jose Rocha QA Officer

American West 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

Lab Sample ID:150Test Code:200	08437-003CMS 0.7-DIS	Date Analyzed:	00/02/201				-	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
		Date Prepared:	09/02/2013	5 1002h 5 1341h										
Calcium		72.9	mg/L	E200.7	0.401	10.0	10.00	62.7	102	70 - 130				
Lab Sample ID: 150		Date Analyzed:	09/02/201	5 1039h										
Test Code: 200	0.7-DIS	Date Prepared:	08/21/201	5 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:150Test Code:200	08436-002CMS 0.7-DIS	Date Analyzed: Date Prepared:	09/02/201 08/21/201											
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: 150	08437-003CMS	Date Analyzed:	09/02/201	5 1119h										
Test Code: 200	0.7-DIS	Date Prepared:	08/21/201	5 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: 150	08435-002CMS	Date Analyzed:	09/02/201	5 914h										
Test Code: 200	0.7-DIS	Date Prepared:	08/21/201	5 1341h										
Calcium		78.4	mg/L	E200.7	0.401	10.0	10.00	66.4	120	70 - 130				
Lab Sample ID:150Test Code:200	08436-002CMS 0.7-DIS	Date Analyzed: Date Prepared:	09/02/2013 08/21/2013											
Calcium	U. / -DIS	74.4	mg/L	E200.7	0.401	10.0	10.00	64.5	99.4	70 - 130				

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Jose Rocha QA Officer

American West NALYTICAL LABORATORIES 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:	1508436-002CMS	Date Analyzed:	09/03/201	15 1010h										
Test Code:	200.7-DIS	Date Prepared:	08/21/201	5 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:	09/03/201	15 1035h										
Test Code:	200.7-DIS	Date Prepared:	08/21/201	5 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:	09/03/201	15 955h										
Test Code:	200.7-DIS	Date Prepared:	08/21/201	15 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:	09/01/201	15 1128h										
Test Code:	200.7-W	Date Prepared:	08/21/201	15 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:	09/01/201	15 1148h										
Test Code:	200.7-W	Date Prepared:	08/21/201	15 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:	09/01/201	15 1204h										
Test Code:	200.7-W	Date Prepared:	08/21/201	15 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:	09/01/201	15 1234h										
Test Code:	200.7-W	Date Prepared:	08/21/201	5 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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Jose Rocha QA Officer

QC SUMMARY REPORT Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: ME QC Type: MS **Project:** Gold King Mine - San Juan River Sampling Reporting Spike Ref. **RPD Ref.** RPD Amount Result Units Method MDL %REC % RPD Limit Qual Limit Spiked Limits Analyte Amount Amt

Analyte			Units			Linnt	Spiked	Amount				LIIIII	•
Lab Sample ID:	1508436-001BMS	Date Analyzed:	09/01/201	5 1248h									
Test Code:	200.7-W	Date Prepared:	08/21/201	5 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:	09/01/201	5 1311h									
Test Code:	200.7-W	Date Prepared:	08/21/201	5 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			
rotussium								210	00 -				
Sodium		42.9	mg/L	E200.7	0.0330	1.00	10.00	34.8	80.5	70 - 130			
Sodium	1508435-002CMS	42.9 Date Analyzed:	mg/L 09/02/201		0.0330	1.00	10.00	34.8	80.5	70 - 130			
Sodium	1508435-002CMS 200.8-DIS		-	5 2240h	0.0330	1.00	10.00	34.8	80.5	70 - 130			
Sodium Lab Sample ID:		Date Analyzed:	09/02/201	5 2240h	0.0330	0.00200	0.2000	0.000583	94.7	70 - 130 75 - 125			
Sodium Lab Sample ID: Test Code:		Date Analyzed: Date Prepared:	09/02/201 08/21/201	5 2240h 5 1341h									
Sodium Lab Sample ID: Test Code: Antimony		Date Analyzed: Date Prepared: 0.190	09/02/201 08/21/201 mg/L	5 2240h 5 1341h E200.8	0.0000366	0.00200	0.2000	0.000583	94.7	75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic		Date Analyzed: Date Prepared: 0.190 0.203	09/02/201 08/21/201 mg/L mg/L	5 2240h 5 1341h E200.8 E200.8	0.0000366 0.0000920	0.00200 0.00200	0.2000 0.2000	0.000583 0.00146	94.7 101	75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium		Date Analyzed: Date Prepared: 0.190 0.203 0.329	09/02/201 08/21/201 mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538	0.00200 0.00200 0.00200	0.2000 0.2000 0.2000	0.000583 0.00146 0.138	94.7 101 95.6	75 - 125 75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199	09/02/201 08/21/201 mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288	0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0	94.7 101 95.6 99.7	75 - 125 75 - 125 75 - 125 75 - 125 75 - 125	 		
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190	09/02/201 08/21/201 mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193	0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0	94.7 101 95.6 99.7 94.9	75 - 125 75 - 125 75 - 125 75 - 125 75 - 125 75 - 125	 		
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190 0.194	09/02/201 08/21/201 mg/L mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154	0.00200 0.00200 0.00200 0.00200 0.000500 0.000500	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0	94.7 101 95.6 99.7 94.9 97.0	75 - 125 75 - 125 75 - 125 75 - 125 75 - 125 75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190 0.194 0.193	09/02/201 08/21/201 mg/L mg/L mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00400	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0 0 0.0000643	94.7 101 95.6 99.7 94.9 97.0 96.7	75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190 0.194 0.193 0.199	09/02/201 08/21/201 mg/L mg/L mg/L mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.0000692	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00400 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0 0.0000643 0.00225	94.7 101 95.6 99.7 94.9 97.0 96.7 98.2	75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190 0.194 0.193 0.199 0.199 0.199 0.189	09/02/201 08/21/201 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.000692 0.000264	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00400 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0 0 0.0000643 0.00225 0.000382	94.7 101 95.6 99.7 94.9 97.0 96.7 98.2 94.4	75 - 125 75 - 125			
Sodium Lab Sample ID: Test Code: Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese		Date Analyzed: Date Prepared: 0.190 0.203 0.329 0.199 0.190 0.194 0.193 0.199 0.189 0.195	09/02/201 08/21/201 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	5 2240h 5 1341h E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.0000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.0000434 0.0000692 0.000264 0.00153	0.00200 0.00200 0.00200 0.00200 0.000500 0.00200 0.00400 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0 0 0.0000643 0.00225 0.000382 0.00155	94.7 101 95.6 99.7 94.9 97.0 96.7 98.2 94.4 96.7	75 - 125 75 - 125			

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Jose Rocha QA Officer

American NALYTICAL LABO	West			QC	SUMMA	ARY RE	PORT				Q	A Officer		
Lab Set ID: 15	tah Division of Wate 508437 old King Mine - San		ing				Contact: Dept: QC Type:	Lenora Su ME : MS	ıllivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qua
Lab Sample ID: Test Code:	1508435-002CMS 200.8-DIS	Date Analyzed: Date Prepared:	09/02/201 08/21/201											
Silver Thallium Vanadium Zinc		0.183 0.184 0.200 0.974	mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8	0.0000244 0.0000242 0.000438 0.00476	0.00200 0.00200 0.00440 0.00500	0.2000 0.2000 0.2000 1.000	0 0 0.00238 0.0123	91.5 91.8 98.7 96.2	75 - 125 75 - 125 75 - 125 75 - 125 75 - 125				
Lab Sample ID: Test Code:	1508436-002CMS 200.8-DIS	Date Analyzed: Date Prepared:	09/02/201 08/21/201											
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc		0.187 0.198 0.307 0.196 0.187 0.193 0.192 0.196 0.187 0.193 0.195 0.191 0.191 0.191 0.181 0.180 0.197 0.970	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.000692 0.000264 0.00153 0.000206 0.000754 0.0000634 0.0000634 0.0000242 0.0000242 0.000438 0.00476	0.00200 0.00200 0.00200 0.000500 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000513 0.00132 0.122 0 0 0 0.0000747 0.00191 0 0.00179 0.00196 0 0.000564 0 0 0.000564 0 0	93.4 98.5 92.4 98.2 93.6 96.3 96.0 97.2 93.3 95.6 96.4 95.4 95.4 95.2 90.3 90.2 97.5 96.2	75 - 125 $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$ $75 - 125$				
	1508437-003CMS 200.8-DIS	Date Analyzed: Date Prepared: 0.183 0.199	09/02/201 08/21/201 mg/L mg/L	5 2339h	0.0000366	0.00200 0.00200	0.2000	0.000994	91.0 98.8	75 - 125 75 - 125				

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Manganese

Molybdenum

0.432

0.192

mg/L

mg/L

E200.8

E200.8

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Jose Rocha QA Officer

AMERICAL LABO	DRATORIES			QC	SUMINIA	AKY KE	PORI							
Client: U Lab Set ID: 1	Utah Division of Wate 508437	er Quality					Contact: Dept:	Lenora Si ME	ullivan					
Project: C	Gold King Mine - San	Juan River Sampl	ing				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: Test Code:	1508437-003CMS 200.8-DIS	Date Analyzed: Date Prepared:	09/02/20 08/21/20											
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:	09/02/20	15 1702h										
Test Code:	200.8-W	Date Prepared:	08/21/20	15 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				

Report Date: 9/4/2015 Page 24 of 44

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

0.00200

0.00200

0.2000

0.2000

0.239

0.00158

96.7

95.3

75 - 125

75 - 125

0.00153

0.000206



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OC SUMMARY REPORT

Jose Rocha QA Officer

ANALYTICAL LAB	ORATORIES			$\underline{\mathbf{v}}$										
Lab Set ID: 1		- •					Contact: Dept:	Lenora Su ME	ıllivan					
Project: (Gold King Mine - San	Juan River Sampli	ing				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:	09/02/20	15 1702h										
Test Code:	200.8-W	Date Prepared:	08/21/20	15 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:	09/03/20	15 900h										
Test Code:	200.8-W	Date Prepared:	08/21/20	15 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				

Report Date: 9/4/2015 Page 25 of 44



Lead

Nickel

Silver

Zinc

Selenium

Thallium

Vanadium

Test Code:

Mercury

Test Code:

Mercury

Test Code:

Mercury

Lab Sample ID: 1508436-001BMS

Lab Sample ID: 1508437-001BMS

Lab Sample ID: 1508436-001CMS

HG-DW-245.1

HG-DW-245.1

HG-DW-DIS-245.1

Manganese

Molybdenum

0.192

0.323

0.191

0.190

0.186

0.174

0.182

0.200

0.959

0.00331

0.00348

Date Analyzed:

Date Prepared:

Date Analyzed:

Date Prepared:

Date Analyzed:

Date Prepared: 0.00355

mg/L

08/28/2015 1245h

08/27/2015 1530h

08/28/2015 1301h

08/27/2015 1530h

08/27/2015 1000h

08/26/2015 1550h

E200.8

E200.8

E200.8

E200.8

E200.8

E200.8

E200.8

E200.8

E200.8

E245.1

E245.1

E245.1

0.000264

0.00153

0.000206

0.000754

0.0000634

0.0000244

0.0000242

0.000438

0.00476

0.0000892

0.00000892

0.00000892

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Jose Rocha OA Officer

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QC SUMMARY REPORT

Client: U Lab Set ID: 1	Utah Division of Wate 1508437	r Quality					Contact: Dept:	: Lenora Su ME	ıllivan					
Project: (Gold King Mine - San	Juan River Sampl	ing				QC Typ	e: 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:	09/03/20	15 932h										
Test Code:	200.8-W	Date Prepared:	08/21/20	15 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				

0.00200

0.00200

0.00200

0.00200

0.00200

0.00200

0.00200

0.00440

0.00500

0.000150

0.000150

0.000150

0.00517

0.136

0.00163

0.00324

0.000631

0.0000482

0.0000372

0.0104

0.0187

0

0

0

0.2000

0.2000

0.2000

0.2000

0.2000

0.2000

0.2000

0.2000

1.000

0.003330

0.003330

0.003330

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

80 - 120

80 - 120

85 - 115

93.6

93.3

94.6

93.6

92.5

87.0

91.0

94.8

94.0

99.3

104

107

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

Report Date: 9/4/2015 Page 26 of 44



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RPD

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Jose Rocha QA Officer

QC SUMMARY REPORT Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: ME QC Type: MS Gold King Mine - San Juan River Sampling **Project:** Spike Ref. RPD Ref. Reporting Amount Analyte Recult Unite Method MDI . I imit Spikod 0/ DEC I imite Amt % RPD

Analyte		Result	Units	Method	MDL	Limit	Spiked	Amount	%REC	Limits	Amt	% RPD	Limit	Qual
Lab Sample ID: Test Code:	1508437-001CMS HG-DW-DIS-245.1	Date Analyzed: Date Prepared:												
Mercury		0.00350	mg/L	E245.1	0.00000892	0.000150	0.003330	0	105	85 - 115				
Lab Sample ID: Test Code:	1508435-001CMS HG-DW-DIS-245.1	Date Analyzed: Date Prepared:												
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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Jose Rocha QA Officer

% RPD

QC SUMMARY REPORT

Lah Sample	e ID: 1508437-003CMSD	Date Analyze	d: 09/02/20	15 1004h							
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt
Project:	Gold King Mine - San Ju	uan River Sam	pling				QC Type	e: MSD			
Lab Set II	D: 1508437						Dept:	ME			
Client:	Utah Division of Water	Quality					Contact:	Lenora S	ullivan		

Lab Sample ID: Test Code:	1508437-003CMSD 200.7-DIS	Date Analyzed: Date Prepared:	09/02/201: 08/21/201:										
Calcium	200.7 DIS	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: Test Code:	1508435-002CMSD 200.7-DIS	Date Analyzed: Date Prepared:	09/02/2013 08/21/2013										
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:	09/02/201	5 1104h									
Test Code:	200.7-DIS	Date Prepared:	08/21/2015	5 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
	1508437-003CMSD	Date Analyzed:	09/02/201	5 1121h									
	1508437-003CMSD 200.7-DIS	Date Analyzed: Date Prepared:	09/02/2013 08/21/2013										
Lab Sample ID:		•			0.0767	0.100	1.000	0	86.6	70 - 130	0.876	1.09	20
Lab Sample ID: Test Code:		Date Prepared:	08/21/2015	5 1341h	0.0767 0.0294	0.100 1.00	1.000 10.00	0 13.4	86.6 102	70 - 130 70 - 130	0.876 24.1	1.09 2.20	20 20
Lab Sample ID: Test Code: Iron		Date Prepared: 0.866	08/21/2015 mg/L	5 1341h E200.7									
Lab Sample ID: Test Code: Iron Magnesium		Date Prepared: 0.866 23.6	08/21/2013 mg/L mg/L	5 1341h E200.7 E200.7	0.0294	1.00	10.00	13.4	102	70 - 130	24.1	2.20	20
Lab Sample ID: Test Code: Iron Magnesium Potassium Sodium	200.7-DIS	Date Prepared: 0.866 23.6 13.0	08/21/2013 mg/L mg/L mg/L	5 1341h E200.7 E200.7 E200.7 E200.7	0.0294 0.247	1.00 1.00	10.00 10.00	13.4 2.62	102 104	70 - 130 70 - 130	24.1 13	2.20 0.377	20 20
Lab Sample ID: Test Code: Iron Magnesium Potassium Sodium	200.7-DIS	Date Prepared: 0.866 23.6 13.0 47.6	08/21/2015 mg/L mg/L mg/L mg/L	5 1341h E200.7 E200.7 E200.7 E200.7 5 917h	0.0294 0.247	1.00 1.00	10.00 10.00	13.4 2.62	102 104	70 - 130 70 - 130	24.1 13	2.20 0.377	20 20
Lab Sample ID: Test Code: Iron Magnesium Potassium Sodium Lab Sample ID:	200.7-DIS 1508435-002CMSD	Date Prepared: 0.866 23.6 13.0 47.6 Date Analyzed: 1000000000000000000000000000000000000	08/21/2015 mg/L mg/L mg/L mg/L 09/02/2015	5 1341h E200.7 E200.7 E200.7 E200.7 5 917h	0.0294 0.247	1.00 1.00	10.00 10.00	13.4 2.62	102 104	70 - 130 70 - 130	24.1 13	2.20 0.377	20 20
Lab Sample ID: Test Code: Iron Magnesium Potassium Sodium Lab Sample ID: Test Code: Calcium	200.7-DIS 1508435-002CMSD	Date Prepared: 0.866 23.6 13.0 47.6 Date Analyzed: Date Prepared:	08/21/2013 mg/L mg/L mg/L 09/02/2013 08/21/2013	5 1341h E200.7 E200.7 E200.7 5 917h 5 1341h E200.7	0.0294 0.247 0.0330	1.00 1.00 1.00	10.00 10.00 10.00	13.4 2.62 37.5	102 104 102	70 - 130 70 - 130 70 - 130	24.1 13 49	2.20 0.377 2.83	20 20 20
Lab Sample ID: Test Code: Iron Magnesium Potassium Sodium Lab Sample ID: Test Code: Calcium	200.7-DIS 1508435-002CMSD 200.7-DIS	Date Prepared: 0.866 23.6 13.0 47.6 Date Analyzed: Date Prepared: 75.9 75.9	08/21/2013 mg/L mg/L mg/L 09/02/2013 08/21/2013 mg/L	5 1341h E200.7 E200.7 E200.7 5 917h 5 1341h E200.7 5 940h	0.0294 0.247 0.0330	1.00 1.00 1.00	10.00 10.00 10.00	13.4 2.62 37.5	102 104 102	70 - 130 70 - 130 70 - 130	24.1 13 49	2.20 0.377 2.83	20 20 20

Report Date: 9/4/2015 Page 28 of 44



Calcium

Test Code:

Calcium

Test Code:

Calcium

Test Code:

Aluminum

Magnesium

Potassium

Sodium

Iron

Lab Sample ID:

Lab Sample ID: 1508436-001BMSD

200.7-W

200.7-W

200.7-W

1508437-001BMSD

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Jose Rocha **OA** Officer

QC SUMMARY REPORT

Client:	Utah Division of Water	Quality					Contact:	Lenora Su	ullivan			
Lab Set ID:	1508437						Dept:	ME				
Project:	Gold King Mine - San	Juan River Sampl	ing				QC Type:	MSD				
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPE
Lab Sample ID	: 1508436-002CMSD	Date Analyzed:	09/03/20	15 1020h								
Test Code:	200.7-DIS	Date Prepared:	08/21/20	15 1341h								
Aluminum		1.10	mg/L	E200.7	0.0237	0.100	1.000	0.0329	106	70 - 130	1.1	0.0436
Lab Sample ID	: 1508437-003CMSD	Date Analyzed:	09/03/20	15 1037h								
Test Code:	200.7-DIS	Date Prepared:	08/21/20	15 1341h								
Aluminum		1.06	mg/L	E200.7	0.0237	0.100	1.000	0	106	70 - 130	1.06	0.837
Lab Sample ID	: 1508435-002CMSD	Date Analyzed:	09/03/20	15 957h								
Test Code:	200.7-DIS	Date Prepared:	08/21/20	15 1341h								
Aluminum		1.04	mg/L	E200.7	0.0237	0.100	1.000	0	104	70 - 130	1.07	3.49
Lab Sample ID	: 1508435-002BMSD	Date Analyzed:	09/01/20	15 1130h								
Test Code:	200.7-W	Date Prepared:	08/21/20	15 1311h								

0.401

0.401

0.401

E200.7

E200.7

E200.7

89.1

84.4

Date Analyzed:

Date Prepared:

Date Analyzed:

Date Prepared:

81.6

mg/L

mg/L

mg/L

09/01/2015 1151h

08/21/2015 1311h

09/01/2015 1213h

08/21/2015 1311h

10.0

10.0

10.0

09/01/2015 1236h Lab Sample ID: 1508435-002BMSD Date Analyzed: 08/21/2015 1311h Date Prepared: 0.100 12.9 mg/L E200.7 0.0237 1.000 7.32 560 70 - 130 13.2 1.82 20 1 E200.7 0.100 20 1 8.40 0.0767 1.000 6.24 216 70 - 130 8.59 2.20 mg/L E200.7 0.0294 1.00 20 25.0 mg/L 10.00 15.5 95.1 70 - 130 24.8 0.601 14.3 E200.7 0.247 1.00 10.00 4.23 101 70 - 130 14.2 0.460 20 mg/L 41.3 mg/L E200.7 0.0330 1.00 10.00 32.4 89.4 70 - 130 40.5 2.12 20

10.00

10.00

10.00

78.4

74.5

73.2

107

98.8

83.7

70 - 130

70 - 130

70 - 130

87.3

86.8

77.1

2.05

2.76

5.65

Report Date: 9/4/2015 Page 29 of 44



Nickel

Selenium

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Jose Rocha QA Officer

QC SUMMARY REPORT

ANALYTICAL LABO	DRATORIES			<u>v</u>	SUMM	ANI ME								
Lab Set ID: 1	Itah Division of Water 508437 Gold King Mine - San A		ing				Contact: Dept: QC Type:	Lenora Su ME : MSD	ullivan					
Analyte	0	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	1508436-001BMSD 200.7-W	Date Analyzed: Date Prepared:	09/01/20 08/21/20											
Aluminum Iron Magnesium Potassium Sodium		13.4 7.54 24.6 14.3 42.9	mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7 E200.7	0.0237 0.0767 0.0294 0.247 0.0330	0.100 0.100 1.00 1.00 1.00	1.000 1.000 10.00 10.00 10.00	7.11 5.21 15.2 4.09 33.5	631 234 94.7 102 93.1	70 - 130 70 - 130 70 - 130 70 - 130 70 - 130	13.9 7.81 25.2 14.5 43.9	3.53 3.53 2.27 1.53 2.33	20 20 20 20 20	2 2
Lab Sample ID: Test Code:	1508437-001BMSD 200.7-W	Date Analyzed: Date Prepared:	09/01/20 08/21/20											
Aluminum Iron Magnesium Potassium Sodium		10.1 6.00 23.7 13.7 42.5	mg/L mg/L mg/L mg/L mg/L	E200.7 E200.7 E200.7 E200.7 E200.7	0.0237 0.0767 0.0294 0.247 0.0330	0.100 0.100 1.00 1.00 1.00	1.000 1.000 10.00 10.00 10.00	5.79 4.33 14.6 3.78 34.8	430 167 91.2 99.2 77.3	70 - 130 70 - 130 70 - 130 70 - 130 70 - 130	10.2 6.11 23.9 13.7 42.9	1.31 1.88 0.806 0.139 0.758	20 20 20 20 20 20	1
Lab Sample ID: Test Code:	1508435-002CMSD 200.8-DIS	Date Analyzed: Date Prepared:	09/02/20 08/21/20											
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese		0.186 0.199 0.320 0.191 0.185 0.191 0.190 0.195 0.183 0.193	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8 E200.8	0.0000366 0.000920 0.000538 0.0000288 0.000193 0.00154 0.0000434 0.000692 0.000264 0.00153	0.00200 0.00200 0.00200 0.000500 0.00200 0.00400 0.00200 0.00200 0.00200	0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000 0.2000	0.000583 0.00146 0.138 0 0 0 0.0000643 0.00225 0.000382 0.00155	92.6 98.7 90.8 95.6 92.6 95.7 95.0 96.2 91.6 95.9	75 - 125 75 - 125	0.19 0.203 0.329 0.199 0.19 0.194 0.193 0.199 0.189 0.195 0.190	2.23 1.95 2.94 4.22 2.45 1.28 1.72 1.96 3.06 0.755	20 20 20 20 20 20 20 20 20 20 20 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	

Report Date: 9/4/2015 Page 30 of 44

20

20

2.35

1.55

All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

0.000754

0.0000634

0.00200

0.00200

0.2000

0.2000

0

0.00057

94.2

94.4

75 - 125

75 - 125

0.193

0.192

E200.8

E200.8

0.188

0.189

mg/L

mg/L



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Jose Rocha QA Officer

OC SUMMARY REPORT Client: Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508437 ME Dept: QC Type: MSD **Project:** Gold King Mine - San Juan River Sampling **RPD Ref.** RPD Reporting Amount Spike Ref. MDL Result Units Method %REC Limits % RPD Oual Analyte Limit Spiked Amt Limit Amount Lab Sample ID: 1508435-002CMSD Date Analyzed: 09/02/2015 2243h Test Code: 200.8-DIS Date Prepared: 08/21/2015 1341h 0 Silver 0.176 E200.8 0.0000244 0.00200 0.2000 88.1 75 - 125 0.183 3.81 20 mg/L Thallium 0.179 E200.8 0.0000242 0.00200 0.2000 0 89.3 75 - 125 0.184 2.80 20 mg/L 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 0.187 E200.8 0.0000366 0.00200 0.2000 0.000513 93.2 75 - 125 0.187 0.249 20 Antimony mg/L 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 E200.8 0.000538 0.00200 0.2000 0.122 91.0 75 - 125 0.307 0.913 20 mg/L Beryllium 0.196 E200.8 0.0000288 0.00200 0.2000 0 97.8 75 - 125 0.196 0.399 20 mg/L 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 0.190 E200.8 0.0000434 0.00400 0.2000 0.0000747 95.1 75 - 125 0.192 0.974 20 Cobalt mg/L Copper 0.194 mg/L E200.8 0.000692 0.00200 0.2000 0.00191 96.3 75 - 125 0.196 0.906 20 E200.8 0.00200 0 Lead 0.184 0.000264 0.2000 91.9 75 - 125 0.187 1.50 20 mg/L 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 E200.8 0.000206 0.00200 0.2000 0.00196 95.5 75 - 125 0.195 0.995 20 mg/L 75 - 125 Nickel 0.189 mg/L E200.8 0.000754 0.00200 0.2000 0 94.7 0.191 0.817 20 E200.8 0.00200 Selenium 0.190 0.0000634 0.2000 0.000564 94.9 75 - 125 0.191 0.269 20 mg/L E200.8 Silver 0.179 mg/L 0.0000244 0.00200 0.2000 0 89.7 75 - 125 0.181 0.640 20 0.178 E200.8 0.0000242 0.00200 Thallium mg/L 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 0.00500 Zinc 0.961 mg/L E200.8 0.00476 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 E200.8 0.00200 0.2000 1.43 Antimony 0.186 mg/L 0.0000366 0.000994 92.3 75 - 125 0.183 20 0.197 E200.8 0.0000920 0.00200 0.2000 0.0014 97.8 75 - 125 0.972 20 Arsenic mg/L 0.199

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Vanadium

Test Code:

Antimony

Arsenic

Barium

Beryllium

Cadmium

Chromium

Manganese

Molybdenum

Cobalt

Copper

Lead

Lab Sample ID: 1508435-002BMSD

200.8-W

Zinc

0.194

0.967

0.146

0.197

0.364

0.217

0.182

0.199

0.195

0.201

0.188

0.428

0.196

Date Analyzed:

Date Prepared:

mg/L

09/02/2015 1705h

08/21/2015 1311h

E200.8

0.000438

0.00476

0.0000366

0.0000920

0.000538

0.0000288

0.000193

0.00154

0.0000434

0.000692

0.000264

0.00153

0.000206

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Jose Rocha QA Officer

QC SUMMARY REPORT

ANALYTICAL LA	BORATORIES			<u>v</u>	SUMME	ANI NE								
Client:	Utah Division of Water	r Quality					Contact:	Lenora S	ullivan					
Lab Set ID:	1508437						Dept:	ME						
Project:	Gold King Mine - San	Juan River Sampl	ing				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 II Test Code:	D: 1508437-003CMSD 200.8-DIS	Date Analyzed: Date Prepared:		015 2342h 015 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	

0.00440

0.00500

0.00200

0.00200

0.00200

0.00200

0.000500

0.00200

0.00400

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0.00214

0.00664

0.000765

0.00334

0.184

0.000535

0

0.00417

0.00319

0.0101

0.00824

0.239

0.00158

95.8

96.1

72.6

96.7

90.0

108

91.2

97.3

96.0

95.4

89.7

94.7

97.2

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

75 - 125

0.196

0.962

0.141

0.196

0.369

0.213

0.178

0.199

0.195

0.201

0.184

0.432

0.192

1.12

0.555

3.41

0.426

1.42

1.60

2.27

0.119

0.0536

0.141

1.70

0.905

1.95

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Report Date: 9/4/2015 Page 32 of 44



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RPD

Limit Qual

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Jose Rocha QA Officer

% RPD

RPD Ref.

Amt

QC SUMMARY REPORT Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: ME QC Type: MSD Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. Amount Method MDL %REC Result Units Limit Spiked Limits Analyte Amount Lab Sample ID: 1508435-002BMSD Date Analyzed: 09/02/2015 1705h

Lab Sample ID:	1508435-002BMSD	Date Analyzed:	09/02/20	15 1705h									
Test Code:	200.8-W	Date Prepared:	08/21/201	15 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:	09/03/20	15 903h									
Test Code:	200.8-W	Date Prepared:	08/21/201	15 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

Report Date: 9/4/2015 Page 33 of 44



Test Code:

Mercury

Lab Sample ID: 1508436-001CMSD

HG-DW-DIS-245.1

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Jose Rocha **QA** Officer

QC SUMMARY REPORT

ANALYTICAL LABO	DRATORIES													
Client: U	Jtah Division of Water	Quality					Contact:	Lenora Su	ullivan					
Lab Set ID: 1	508437						Dept:	ME						
Project: C	Gold King Mine - San .	Juan River Sampl	ing				QC Type	e: 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:	09/03/201	5 935h										
Test Code:	200.8-W	Date Prepared:	08/21/201	5 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:	08/28/201	5 1247h										
Test Code:	HG-DW-245.1	Date Prepared:	08/27/201	5 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:	08/28/201	5 1303h										
Test Code:	HG-DW-245.1	Date Prepared:	08/27/201	5 1530h										
Mercury		0.00338	mg/L	E245.1	0.00000892	0.000150	0.003330	0	101	80 - 120	0.00348	2.97	20	

Report Date: 9/4/2015 Page 34 of 44 All analyses applicable to the CWA, SDWA, and RCRA are performed in accordance to NELAC protocols. Pertinent sampling information is located on the attached COC. Confidential Business Information: This report is provided for the exclusive use of the addressee. Privileges of subsequent use of the name of this company or any member of its staff, or reproduction of this report in connection with the advertisement, promotion or sale of any product or process, or in connection with the re-publication of this report for any purpose other than for the addressee will be granted only on contact. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

0.000150

0.003330

0

96.5

85 - 115

0.00355

9.96

20

0.00000892

08/27/2015 1002h

08/26/2015 1550h

mg/L

E245.1

Date Analyzed:

Date Prepared:

0.00321



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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: MSD									
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual	
Lab Sample II	D: 1508437-001CMSD	Date Analyzed:	08/27/20	15 1018h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/20	15 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 II	D: 1508435-001CMSD	Date Analyzed:	08/27/20	15 949h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/26/20	15 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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RPD

Limit Qual

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Jose Rocha **QA** Officer

QC SUMMARY REPORT Lenora Sullivan Utah Division of Water Quality **Contact:** Dept: WC QC Type: DUP Gold King Mine - San Juan River Sampling Reporting Amount Spike Ref. **RPD Ref.** Result Units Method MDL %REC % RPD Limit Spiked Limits Analyte Amount Amt

Lab Sample ID: Test Code:	1508435-001ADUP COND-W-2510B	Date Analyzed:	08/24/201	15 714h							
Conductivity		660	µmhos/cm	SM2510B	0.436	2.00		661	0.151	5	
Lab Sample ID: Test Code:	1508436-001ADUP COND-W-2510B	Date Analyzed:	08/24/201	15 714h			 				
Conductivity		655	µmhos/cm	SM2510B	0.436	2.00		658	0.457	5	
Lab Sample ID: Test Code:	1508437-001ADUP COND-W-2510B	Date Analyzed:	08/24/201	15 714h							
Conductivity		697	µmhos/cm	SM2510B	0.436	2.00		699	0.287	5	
Lab Sample ID: Test Code:	1508435-005ADUP PH-4500H+B	Date Analyzed:	08/21/201	15 1718h			 				
pH @ 25° C		8.24	pH Units	SM4500-H+B	1.00	1.00		8.26	0.242	5	Н
Lab Sample ID: Test Code:	1508436-005ADUP PH-4500H+B	Date Analyzed:	08/21/201	15 1718h							
•			08/21/201 pH Units	15 1718h SM4500-H+B	1.00	1.00		8.52	0.235	5	Н
Test Code:	PH-4500H+B		pH Units	SM4500-H+B	1.00	1.00		8.52	0.235	5	Н
Test Code: pH @ 25° C Lab Sample ID:	PH-4500H+B 1508437-004ADUP	8.50 Date Analyzed:	pH Units	SM4500-H+B	1.00	1.00		8.52	0.235	5	H
Test Code: pH @ 25° C Lab Sample ID: Test Code:	PH-4500H+B 1508437-004ADUP PH-4500H+B	8.50 Date Analyzed:	pH Units 08/21/201 pH Units	SM4500-H+B 15 1718h SM4500-H+B							
Test Code: pH @ 25° C Lab Sample ID: Test Code: pH @ 25° C Lab Sample ID:	PH-4500H+B 1508437-004ADUP PH-4500H+B 1508435-001ADUP TDS-W-2540C	8.50 Date Analyzed: 8.32	pH Units 08/21/201 pH Units	SM4500-H+B 15 1718h SM4500-H+B							
Test Code: pH @ 25° C Lab Sample ID: Test Code: pH @ 25° C Lab Sample ID: Test Code: Total Dissolved	PH-4500H+B 1508437-004ADUP PH-4500H+B 1508435-001ADUP TDS-W-2540C	8.50 Date Analyzed: 8.32 Date Analyzed:	pH Units 08/21/201 pH Units 08/21/201 mg/L	SM4500-H+B 15 1718h SM4500-H+B 15 1250h SM2540C	1.00	1.00		8.33	0.120	5	Н

Report Date: 9/4/2015 Page 36 of 44

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Client: Lab Set ID: 1508437

Project:



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Jose Rocha QA Officer

OC SUMMARY REPORT Client: Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508437 Dept: WC Gold King Mine - San Juan River Sampling **QC Type:** DUP **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount Method MDL %REC % RPD Result Units Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: 1508437-001ADUP Date Analyzed: 08/21/2015 1250h Test Code: TDS-W-2540C 410 SM2540C 30.6 50.0 320 24.7 5 Total Dissolved Solids **(***a*) mg/L Lab Sample ID: 1508435-003ADUP Date Analyzed: 08/21/2015 1550h Test Code: TSS-W-2540D 196 15.0 7.84 5 SM2540D 14.2 212 **(***a*) Total Suspended Solids mg/L Lab Sample ID: 1508436-001ADUP Date Analyzed: 08/21/2015 1550h Test Code: TSS-W-2540D 306 5 Total Suspended Solids mg/L SM2540D 14.2 15.0 290 5.37 @ Lab Sample ID: 1508437-002ADUP Date Analyzed: 08/21/2015 1550h Test Code: TSS-W-2540D Total Suspended Solids 288 SM2540D 14.2 15.0 312 8.00 5 **(***a*) mg/L

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

H - Sample was received outside of the holding time.



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Jose Rocha QA Officer

QC SUMMARY REPORT Utah Division of Water Quality Lenora Sullivan **Client: Contact:** Lab Set ID: 1508437 Dept: WC Gold King Mine - San Juan River Sampling QC Type: LCS **Project:** DDD Dof Donorting Spike Dof DDD Amount

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	LCS-R82125 300.0-W	Date Analyzed:	08/25/20	015 1423h										
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: Test Code:	LCS-R82043 ALK-W-2320B	Date Analyzed:	08/24/20	015 754h										
Alkalinity (as Ca	CO3)	50,700	mg/L	SM2320B	1.86	10.0	50,000	0	101	90 - 110				
Lab Sample ID: Test Code:	LCS-R82041 COND-W-2510B	Date Analyzed:	08/24/20	015 714h										
Conductivity		998	umhos/cm	SM2510B	0.436	2.00	1,000	0	99.8	98 - 102				
Lab Sample ID: Test Code:	LCS-R82355 NO2/NO3-W-353.2	Date Analyzed:	08/31/20	015 1704h										
Nitrate/Nitrite (as	s N)	0.999	mg/L	E353.2	0.00833	0.0100	1.000	0	99.9	90 - 110				
Lab Sample ID: Test Code:	LCS-R82023 PH-4500H+B	Date Analyzed:	08/21/20	015 1718h										
pH @ 25° C		8.90	pH Units	SM4500-H+B	1.00	1.00	9.000	0	98.9	98 - 102				
Lab Sample ID: Test Code:	LCS-38918 PO4-W-4500PF	Date Analyzed: Date Prepared:		015 1036h 015 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: Test Code:	LCS-R82062 TDS-W-2540C	Date Analyzed:	08/21/20	015 1250h										
Total Dissolved S	Solids	198	mg/L	SM2540C	6.13	10.0	205.0	0	96.6	80 - 120				
Lab Sample ID: Test Code:	LCS-R82048 TSS-W-2540D	Date Analyzed:	08/21/20	015 1550h										
Total Suspended	Solids	92.0	mg/L	SM2540D	2.83	3.00	100.0	0	92.0	80 - 120				

Report Date: 9/4/2015 Page 38 of 44



Client:

Project:

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Jose Rocha **OA** Officer

OC SUMMARY REPORT Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508437 WC Dept: **OC Type:** MBLK Gold King Mine - San Juan River Sampling

RPD Ref. RPD Reporting Amount Spike Ref. MDL Units Method %REC Limits % RPD Qual Analyte Result Limit Spiked Amt Limit Amount Lab Sample ID: MB-R82125 08/25/2015 1406h Date Analyzed: Test Code: 300.0-W 0.00751 U < 0.100E300.0 0.100 Chloride mg/L Sulfate < 0.750E300.0 0.0211 0.750 U mg/L Lab Sample ID: MB-R82043 Date Analyzed: 08/24/2015 754h Test Code: ALK-W-2320B SM2320B 10.0 U Alkalinity (as CaCO3) < 10.0 1.86 mg/L Bicarbonate (as CaCO3) < 10.0 mg/L SM2320B 1.86 10.0 U Carbonate (as CaCO3) < 10.0 SM2320B 1.86 10.0 U mg/L Lab Sample ID: MB-R82041 Date Analyzed: 08/24/2015 714h Test Code: COND-W-2510B < 2.00SM2510B 0.436 2.00 U Conductivity µmhos/cm 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 08/21/2015 1250h Date Analyzed: 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 SM2540D 2.83 3.00 U mg/L

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Jose Rocha QA Officer

QC SUMMARY REPORT

		Reporting	Amount	Snike Ref.	RPD Ref.	RPD
Project:	Gold King Mine - San Juan River Sampling		QC Type:	MBLK		
Lab Set ID:	1508437		Dept:	WC		
Client:	Utah Division of Water Quality		Contact:	Lenora Sullivan		

Analyte Result Units Method MDL Limit Spiked Amount %REC Limits Amt		Qual
---------------------------------------------------------------------	--	------

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.

Report Date: 9/4/2015 Page 40 of 44



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QC SUMMARY REPORT

Jose Rocha **QA** Officer

Lenora Sullivan Utah Division of Water Quality **Contact:** Dept: WC QC Type: MS Gold King Mine - San Juan River Sampling Reporting Spike Ref. **RPD Ref.** RPD Amount Units Method MDL %REC % RPD Limit Qual Analyte Result Limit Spiked Limits Amount Amt Lab Sample ID: 1508435-001AMS 08/25/2015 1655h Date Analyzed: 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:	08/25/201	5 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		
•	1508437-001AMS	Date Analyzed:	08/25/201	5 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: Test Code:	1508435-001AMS ALK-W-2320B	Date Analyzed:	08/24/201	5 754h								
Alkalinity (as Ca	CO3)	213	mg/L	SM2320B	1.86	10.0	100.0	115	98.0	80 - 120	 	
Lab Sample ID: Test Code:	1508436-001AMS ALK-W-2320B	Date Analyzed:	08/24/201	5 754h								
Alkalinity (as Ca	CO3)	226	mg/L	SM2320B	1.86	10.0	100.0	123	103	80 - 120		
Lab Sample ID: Test Code:	1508437-001AMS ALK-W-2320B	Date Analyzed:	08/24/201	5 754h								
Alkalinity (as Ca	CO3)	225	mg/L	SM2320B	1.86	10.0	100.0	122	103	80 - 120		
Lab Sample ID: Test Code:	1508437-001DMS NO3 NO2/NO3-W-353.2	Date Analyzed:	08/31/201	5 1709h								
Nitrate/Nitrite (as	s N)	0.851	mg/L	E353.2	0.00833	0.0100	1.000	0	85.1	90 - 110		1

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Client: Lab Set ID: 1508437

Project:



Phosphate, Total (as P)

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OC SUMMARY REPORT

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Jose Rocha **OA** Officer

Client: Utah Division of Water Quality **Contact:** Lenora Sullivan Lab Set ID: 1508437 Dept: WC Gold King Mine - San Juan River Sampling **QC Type:** MS **Project:** Reporting Spike Ref. **RPD Ref.** RPD Amount MDL %REC % RPD Result Units Method Limit Spiked Limits Limit Qual Analyte Amount Amt Lab Sample ID: 1508435-005DMS Date Analyzed: 09/01/2015 1040h Test Code: PO4-W-4500PF Date Prepared: 08/31/2015 1450h SM4500-P-F 0.0212 0.0500 1.000 0.743 90.2 90 - 110 Phosphate, Total (as P) 1.64 mg/L 09/01/2015 1048h Lab Sample ID: 1508436-005DMS Date Analyzed: Test Code: PO4-W-4500PF Date Prepared: 08/31/2015 1450h Phosphate, Total (as P) 1.51 SM4500-P-F 0.0212 0.0500 1.000 0.613 89.9 90 - 110 mg/L 8 Lab Sample ID: 1508437-004DMS Date Analyzed: 09/01/2015 1057h Test Code: PO4-W-4500PF Date Prepared: 08/31/2015 1450h

0.0500

1.000

0.109

98.3

90 - 110

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

SM4500-P-F

0.0212

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

1.09

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Jose Rocha QA Officer

QC SUMMARY REPORT

Lab Set ID: 1	Jtah Division of Water 508437 Gold King Mine - San J	- •	ing				Contact: Dept: QC Type	WC	ıllivan					
Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: Test Code:	1508435-001AMSD 300.0-W	Date Analyzed:	08/25/20	15 1712h										
Chloride Sulfate		64.4 190	mg/L mg/L	E300.0 E300.0	0.0751 0.211	1.00 7.50	50.00 50.00	15.5 143	97.8 94.6	90 - 110 90 - 110	64 190	0.540 0.0751	20 20	
Lab Sample ID: Test Code:	1508436-001AMSD 300.0-W	Date Analyzed:	08/25/20	15 1909h										
Chloride Sulfate		63.8 187	mg/L mg/L	E300.0 E300.0	0.0751 0.211	1.00 7.50	50.00 50.00	15.6 140	96.4 94.3	90 - 110 90 - 110	63.7 186	0.134 0.389	20 20	
Lab Sample ID:	1508437-001AMSD	Date Analyzed:	08/25/20	15 2141h										
Test Code:	300.0-W													
-	300.0-W	63.8 189	mg/L mg/L	E300.0 E300.0	0.0751 0.211	1.00 7.50	50.00 50.00	15.7 142	96.3 95.7	90 - 110 90 - 110	63.9 188	0.124 0.666	20 20	
Test Code: Chloride			•	E300.0										
Test Code: Chloride Sulfate Lab Sample ID:	1508435-001AMSD ALK-W-2320B	189	mg/L	E300.0										
Test Code: Chloride Sulfate Lab Sample ID: Test Code: Alkalinity (as Ca	1508435-001AMSD ALK-W-2320B	189 Date Analyzed:	mg/L 08/24/20 mg/L	E300.0 15 754h SM2320B	0.211	7.50	50.00	142	95.7	90 - 110	188	0.666	20	
Test Code: Chloride Sulfate Lab Sample ID: Test Code: Alkalinity (as Ca Lab Sample ID:	1508435-001AMSD ALK-W-2320B aCO3) 1508436-001AMSD ALK-W-2320B	189 Date Analyzed: 216	mg/L 08/24/20 mg/L	E300.0 15 754h SM2320B	0.211	7.50	50.00	142	95.7	90 - 110	188	0.666	20	
Test Code: Chloride Sulfate Lab Sample ID: Test Code: Alkalinity (as Ca Lab Sample ID: Test Code: Alkalinity (as Ca	1508435-001AMSD ALK-W-2320B aCO3) 1508436-001AMSD ALK-W-2320B	189 Date Analyzed: 216 Date Analyzed:	mg/L 08/24/20 mg/L 08/24/20 mg/L	E300.0 15 754h SM2320B 15 754h SM2320B	0.211	7.50	50.00	142	95.7	90 - 110 80 - 120	213	0.666	20	

Lab Sample ID:1508437-001DMSD NO3Date Analyzed:Test Code:NO2/NO3-W-353.2

0.800

Nitrate/Nitrite (as N)

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10

1

6.16

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0.0100

1.000

0

80.0

90 - 110

0.851

0.00833

08/31/2015 1711h

E353.2

mg/L



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Kyle F. Gross Laboratory Director

RPD

Limit

Qual

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QC SUMMARY REPORT

Jose Rocha QA Officer

% RPD

Lenora Sullivan **Client:** Utah Division of Water Quality **Contact:** Lab Set ID: 1508437 Dept: WC QC Type: MSD Gold King Mine - San Juan River Sampling **Project:** Reporting Spike Ref. **RPD Ref.** Amount Result Units Method MDL %REC Limit Spiked Limits Analyte Amount Amt

Lab Sample ID: Test Code:	1508435-005DMSD PO4-W-4500PF	Date Analyzed: Date Prepared:	09/01/201 08/31/201										
Phosphate, Total	Phosphate, Total (as P)		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 Test Code: PO4-W-4500PF		Date Analyzed: Date Prepared:	09/01/201 08/31/201										
Phosphate, Total	Phosphate, Total (as P)		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: Test Code:	Lab Sample ID: 1508437-004DMSD		09/01/201 08/31/201										
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.

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American West Analytical Laboratories

WORK O	RDER Summary					Work Order: 150	8437	Page 1 of 4
Client:	Utah Division of Water Quality					Due Date: 9/4/20	015	
Client ID:	UTD200		Contact:	Lenora Sullivan				
Project:	Gold King Mine - San Juan River Sa	mpling	QC Level	II+ MDL		WO Type: Stan	dard	
Comments:	QC 2+. Flag any concentrations detected filtered. Cc: jamesharris@utah.gov and	ed less than RL and a	-		Include EDD. S			ere field
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	distance con a provincia de la constancia d
				2 SEL Analytes: CL S	04			
				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	
				TSS-W-2540D			df - wc	
1508437-001B				200.7-W	TA FE MC K NA		df - metals	
				6 SEL Analytes: AL C 200.7-W-PR	AFE MOK NA		df - metals	
			<u></u>	200.7-W-1 K			df - metals	
		. · · ·			AS BA BE CD CR CC	O CU PB MN MO NI SE		
				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	
		-		6 SEL Analytes: AL (CA FE MG K NA			
				200.7-DIS-PR			df - dis met	
				200.8-DIS 17 SEL Analytes: SB AG TL V ZN	AS BA BE CD CR CO	O CU PB MN MO NI SE	.df - dis met	
				200.8-DIS-PR			df - dis met	
		· · · · · · · · · · · · · · · · ·		HARD-2340B			df - dis met	
				I SEL Analytes: HAI	RD			
		· ·		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	

D

WORK OF	CDER Summary					Work Order: 150		Page 2 of 4
Client:	Utah Division of Water Quality					Due Date: 9/4/2	015	and the state of the
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	
1508437-002A	San Juan R at Sand Island (4953250)	8/20/2015 0721h	8/21/2015 0926h	300.0-W	Aqueous		df - wc	
				2 SEL Analytes:	CL SO4		df - wc	
				ALK-W-2320B	ATV ALVD ALVC		ui - wo	
				3 SEL Analytes: 2 COND-W-2510B	ALK ALKB ALKC		df - wc	
							df - wc	
				PH-4500H+B TDS-W-2540C			df - wc	
				TSS-W-2540C		11-1	df - wc	1. 1. A. A. B.
				200.7-W			df - metals	
1508437-002B					AL CA FE MG K NA			
		·····		200.7-W-PR		and and a second s	df - metals	
				200.8-W			df - metals	
					s: SB AS BA BE CD CR CO	O CU PB MN MO NI SE		
				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			df - dis met	
1508457-0020				6 SEL Analytes:	: AL CA FE MG K NA			
				200.7-DIS-PR			df - dis met	
				200.8-DIS			df - dis met	
				17 SEL Analyte. AG TL V ZN	s: SB AS BA BE CD CR C	O CU PB MN MO NI SE		
				200.8-DIS-PR			df - dis met	
				HARD-2340B			df - dis met	
				1 SEL Analytes			10 11	
				HG-DW-DIS-245.	.1		df - dis met	
				HG-DW-DIS-PR				
1508437-002D				NO2/NO3-W-353	.2		df - no2/no3 df - no2/no3	
				PO4-W-4500PF			df - no2/no3	
				PO4-W-PR	and an an and a state of the second state of the second state of the second state of the second state of the se	an a		
1508437-003A	San Juan River at Town of Montezuma (4953990)	8/20/2015 0859h	8/21/2015 0926		Aqueous		df - wc	
				2 SEL Analytes	s: CL SO4		df - wc	
				ALK-W-2320B	. ALV ALVD ALVO		ui - wo	
				5 SEL Analytes	s: ALK ALKB ALKC		Apr	
Printed: 8/31/2015	FOR LABORATORY USE ONLY [fill out on page	e 1]: %M 🗌 RT 🗌			IOKHOK	HOK	COC Emailed	

RDER Summary				W	ork Order: 1508437	Page 3 of 4
Utah Division of Water Quality				-	Due Date: 9/4/2015	
Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel Storage	
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	
			200.7-W		df - metals	
			6 SEL Analytes: AL C.	A FE MG K NA		
			200.7-W-PR		df - metals	
			200.8-W		df - metals	
			17 SEL Analytes: SB A AG TL V ZN	AS BA BE CD CR CO CU	PB MN MO NI SE	
			200.8-W-PR		df - metals	
			HARD-2340B		df - metals	
August Stations - Stat			HG-DW-245.1		df - metals	
	i da anti anti anti anti anti anti anti ant		HG-DW-PR		df - metals	
			200.7-DIS		df - dis met	
			6 SEL Analytes: AL C	CA FE MG K NA		
			200.7-DIS-PR		df - dis met	
			200.8-DIS		df - dis met	
			17 SEL Analytes: SB . AG TL V ZN	AS BA BE CD CR CO CU	J PB MN MO NI SE	
			200.8-DIS-PR		df - dis met	
			HARD-2340B		df - dis met	
			1 SEL Analytes: HAR	2D		
			HG-DW-DIS-245.1		and the second	
			HG-DW-DIS-PR			
			NO2/NO3-W-353.2			
			PO4-W-4500PF			
			PO4-W-PR		df - no2/no3	
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 S	SO4		
			ALK-W-2320B		df - wc	
			3 SEL Analytes: ALK	K ALKB ALKC		
			COND-W-2510B		df - wc	
			PH-4500H+B	·	df - wc	
			TDS-W-2540C		df - wc	
			TSS-W-2540D		df - wc	
			200.7-W		df - metals	
			6 SEL Analytes: AL	CA FE MG K NA		
	Utah Division of Water Quality Client Sample ID	Utah Division of Water Quality Client Sample ID Collected Date San Juan River at Town of Montezuma 8/20/2015 0859h (4953990)	Utah Division of Water Quality Collected Date Received Date San Juan River at Town of Montezuma 8/20/2015 0859h 8/21/2015 0926h (4953990)	Utah Division of Water Quality Cilent Sample ID Collected Date Received Date San Juan River at Town of Montezuma (4953990) PH-4500H+B TDS-W-2540C TSS-W-2540D 200.7-W San Juan Rat US160 Xing in CO (4954000) St202015 094h St21/2015 0926h St21.Analytes: AL COND-W-2510B San Juan R at US160 Xing in CO (4954000) St202015 094h St21/2015 0926h St21.Analytes: CL COND-W-2510B St21.Analytes: CL CND-W-2510B St21.Analyte	Utah Division of Water Quality Client Sample ID Collected Date S20/2015 0859h 8/21/2015 0926h COND-W-2510B Aqueous (4953990) PH-4500H+B TDS-W-2540C TSS-W-2540D 200.7-W 6 SEL Analytes: AL CA FE MG K NA 200.7-W 6 SEL Analytes: SB AS BA BE CD CR CO CU AG TL V ZN 200.8-W-PR HARD-2340B HG-DW-PR 200.8-W-PR 200.8-W-PR 200.8-W-PR 200.7-DIS 6 SEL Analytes: AL CA FE MG K NA 200.7-DIS 6 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.7-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL CA FE MG K NA 200.8-DIS 7 SEL Analytes: AL ALKE ALKC 200.8-DIS 7 SEL Analytes: ALKE ALKE 200.8-DIS 7	Unth Division of Water Quality Doe Date: 9/4/2015 Cheets Sample ID Collected Date Received Date Test Code Matrix Sei Storage Sin Juan River at Town of Montezuma (ef55990) 8/20/2015 0859b 8/21/2015 0926b COND-W-2510B Aqueous off-we (ef55990) 9/21/2015 0859b 8/21/2015 0926b COND-W-2510B Aqueous off-we (ef55990) 9/21/2015 0859b 8/21/2015 0926b COND-W-2510B Aqueous off-we (ef55990) 9/21/2015 0859b 8/21/2015 0926b First Available off-we off-we (ef55990) 9/21/2015 0926b 8/21/2015 0926b 6/21/201 off-we off-we 200.7-W 9/2000 6/21/201 off-we off-we off-we off-we 200.7-W 9/2000 9/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000 0/2000

WORK O	RDER Summary				Work	Order: 1508437	Page 4 of 4
Client:	Utah Division of Water Quality				Due	e Date: 9/4/2015	7.00
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	1
				200.8-W		df - metals	
				17 SEL Analytes AG TL V ZN	: SB AS BA BE CD CR CO CU PB A	MN MO NI SE	
				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 AG TL V ZN	S: SB AS BA BE CD CR CO CU PB	MN MO NI SE	
		Autor		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	
1508437-004D				NO2/NO3-W-353.	2	df - no2/no3	
				PO4-W-4500PF		df - no2/no3	
				PO4-W-PR		df - no2/no3	

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Samples have been samples have been	Address:	Utah Division of Wa PO Box 144870 Salt Lake City, UT 8 Gold King Mine - Sa	4114-4870	P	Fax : 801-5 Email: <u>lenora</u>	36-4367 36-4301 s@utah.gov	<u>v</u> n.gov (please copy	Page 1 of 1 QC Level: 2+ -TAT - ASAP on results) 5 + M
	SAN JUAN R AT MEXICAN HAT US163 XING (4953000) SAN JUAN R AT SAND ISLAND (4953250) San Juan River at Town of Montezuma (4953990)		ALD " # of Containers # of Containers Bample Matrix Total Chemistry: PH, TDS, TSS, Conductivity	Total TAL Metals + Mo + Hardness (200 Al, Ca, Fe, K, Mg, Na, 200.8: Sb, As, Ba, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, Se, Tl, Zn, 245.1: Hg)	red TAL Metals + Mo + Hardness 7: Al, Ca, Fc, K, Mg, Na, 200.8: Sb, As, 5, Cd, Cr, Co, Cu, Pb, Mn, Mo, N, Ag, V, Zn, 245.1: Hg)	Total Nutrients: Phosphate, Nitrate&Nitrite	Comments Dissolved Metals samples have been field filtered. Samples collected from river monitoring following a mine waste dump release. Please flag any concentrations detected less than RL and at or greater than the MDL with a J qualifier. Please	Labor atory. Use Only Samples Were: 1 Shipped or hand delivered 2 Ambient of Chilled 3 Temperature 4 Received Broken/Leaking (Improperly Sealed) 4 Received Broken/Leaking (Improperly Sealed) 5 Properly Preserved 5 Properly Preserved 6 Received Within Holding Tirkes 9 N 6 Received Within Holding Tirkes 9 N 9 Present on Outer Package 9 N 1 Present on Outer Package 9 N 1 Present on Sample 1 N 4 Unbroken on Sample 1 N 1 NA 1 Discrepancies Between Sample

Date: 9 21 15 Time: 9:26

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Lab Set ID: <u>1508 43</u>

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	/	2	3	c/							
Ammonia	pH <2 H ₂ SO ₄											
COD	pH <2 H ₂ SO ₄											
Cyanide	pH >12 NaOH											
Metals	pH <2 HNO ₃	VO	Ves	Ves	Jes.							
NO ₂ & NO ₃	$pH < 2 H_2SO_4$	yes	les	Ves	Jes							
0&G	pH <2 HCL	/		1.								
Phenols	$pH < 2 H_2SO_4$											
Sulfide	pH > 9NaOH, Zn Acetate											
TKN	pH <2 H ₂ SO ₄					 	 			 		
T PO ₄	pH <2 H ₂ SO ₄			:	L							
							i.					

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.