



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

RE: Tibble Fork Dam

Dear Kevin Okleberry:

Lab Set ID: 1608483

3440 South 700 West
Salt Lake City, UT 84119

American West Analytical Laboratories received sample(s) on 8/23/2016 for the analyses presented in the following report.

Phone: (801) 263-8686
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web: www.awal-labs.com

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.

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

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



Inorganic Case Narrative

Client: Utah Division of Water Quality
Contact: Kevin Okleberry
Project: Tibble Fork Dam
Lab Set ID: 1608483

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Sample Receipt Information:

Date of Receipt: 8/23/2016
Date(s) of Collection: 8/23/2016
Sample Condition: Intact
C-O-C Discrepancies: None

Holding Time and Preservation Requirements: The analysis and preparation for the samples were performed within the method holding times. The samples were properly preserved.

Preparation and Analysis Requirements: The samples were analyzed following the methods stated on the analytical reports.

Analytical QC Requirements: All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

Batch QC Requirements: MB, LCS, MS, MSD, RPD:

Method Blanks (MB): No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

Laboratory Control Samples (LCS): All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

Matrix Spike / Matrix Spike Duplicates (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, indicating no apparent matrix interferences.

Corrective Action: None required.



INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Tibble Fork Dam
Lab Sample ID: 1608483-001
Client Sample ID: 4994980 - SED
Collection Date: 8/23/2016 1225h
Received Date: 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

TCLP METALS Method 1311

TCLP Prep Date: 8/23/2016 2000h

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0100	0.0362	
Barium	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0500	1.25	
Cadmium	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.00250	0.0189	
Chromium	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0100	< 0.0100	
Lead	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0500	0.214	
Mercury	mg/L	8/24/2016 1500h	8/25/2016 1041h	SW7470A	0.0100	< 0.0100	
Selenium	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0100	< 0.0100	
Silver	mg/L	8/24/2016 1443h	8/25/2016 820h	SW6020B	0.0100	< 0.0100	

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Laboratory Director

Jose Rocha

QA Officer



INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Tibble Fork Dam
Lab Sample ID: 1608483-002
Client Sample ID: 5912840 - SED
Collection Date: 8/23/2016 1425h
Received Date: 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

TCLP METALS Method 1311

TCLP Prep Date: 8/23/2016 2000h

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0100	< 0.0100	
Barium	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0500	0.551	
Cadmium	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.00250	0.00602	
Chromium	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0100	< 0.0100	
Lead	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0500	< 0.0500	
Mercury	mg/L	8/24/2016 1500h	8/25/2016 1048h	SW7470A	0.0100	< 0.0100	
Selenium	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0100	< 0.0100	
Silver	mg/L	8/24/2016 1443h	8/25/2016 836h	SW6020B	0.0100	< 0.0100	

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INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Tibble Fork Dam
Lab Sample ID: 1608483-003
Client Sample ID: 5912810 - SED
Collection Date: 8/23/2016 1445h
Received Date: 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

TCLP METALS Method 1311

TCLP Prep Date: 8/23/2016 2000h

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0100	0.0157	
Barium	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0500	0.731	
Cadmium	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.00250	< 0.00250	
Chromium	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0100	< 0.0100	
Lead	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0500	< 0.0500	
Mercury	mg/L	8/24/2016 1500h	8/25/2016 1050h	SW7470A	0.0100	< 0.0100	
Selenium	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0100	< 0.0100	
Silver	mg/L	8/24/2016 1443h	8/25/2016 839h	SW6020B	0.0100	< 0.0100	

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INORGANIC ANALYTICAL REPORT

Client: Utah Division of Water Quality
Project: Tibble Fork Dam
Lab Sample ID: 1608483-004
Client Sample ID: 4994990 - SED
Collection Date: 8/23/2016 1500h
Received Date: 8/23/2016 1647h

Contact: Kevin Okleberry

Analytical Results

TCLP METALS Method 1311

TCLP Prep Date: 8/23/2016 2000h

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Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0100	0.0471	
Barium	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0500	1.29	
Cadmium	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.00250	0.0118	
Chromium	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0100	< 0.0100	
Lead	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0500	0.412	
Mercury	mg/L	8/24/2016 1500h	8/25/2016 1046h	SW7470A	0.0100	< 0.0100	
Selenium	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0100	< 0.0100	
Silver	mg/L	8/24/2016 1443h	8/25/2016 910h	SW6020B	0.0100	< 0.0100	

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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1608483
Project: Tibble Fork Dam

Contact: Kevin Okleberry
Dept: ME
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-44644		Date Analyzed:	08/25/2016 817h										
Test Code: 6020B-TCLP		Date Prepared:	08/24/2016 1443h										
Arsenic	0.409	mg/L	SW6020B	0.00353	0.0100	0.4000	0	102	85 - 115				
Barium	0.408	mg/L	SW6020B	0.00394	0.0500	0.4000	0	102	85 - 115				
Cadmium	0.400	mg/L	SW6020B	0.000182	0.00250	0.4000	0	99.9	85 - 115				
Chromium	0.411	mg/L	SW6020B	0.00325	0.0100	0.4000	0	103	85 - 115				
Lead	0.404	mg/L	SW6020B	0.00409	0.0500	0.4000	0	101	85 - 115				
Selenium	0.404	mg/L	SW6020B	0.00306	0.0100	0.4000	0	101	85 - 115				
Silver	0.394	mg/L	SW6020B	0.000369	0.0100	0.4000	0	98.6	85 - 115				
Lab Sample ID: LCS-44649		Date Analyzed:	08/25/2016 1035h										
Test Code: HG-TCLP-7470A		Date Prepared:	08/24/2016 1500h										
Mercury	0.00322	mg/L	SW7470A	0.00000559	0.00100	0.003330	0	96.7	80 - 120				



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1608483
Project: Tibble Fork Dam

Contact: Kevin Okleberry
Dept: ME
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-44644	Date Analyzed:	08/25/2016	814h										
Test Code:	6020B-TCLP	Date Prepared:	08/24/2016	1443h									
Arsenic	< 0.0100	mg/L	SW6020B	0.00353	0.0100								
Barium	< 0.0500	mg/L	SW6020B	0.00394	0.0500								
Cadmium	< 0.00250	mg/L	SW6020B	0.000182	0.00250								
Chromium	< 0.0100	mg/L	SW6020B	0.00325	0.0100								
Lead	< 0.0500	mg/L	SW6020B	0.00409	0.0500								
Selenium	< 0.0100	mg/L	SW6020B	0.00306	0.0100								
Silver	< 0.0100	mg/L	SW6020B	0.000369	0.0100								
Lab Sample ID: MB-TCLP-44636	Date Analyzed:	08/25/2016	913h										
Test Code:	6020B-TCLP	Date Prepared:	08/24/2016	1443h									
Arsenic	< 0.0100	mg/L	SW6020B	0.00353	0.0100								
Barium	< 0.0500	mg/L	SW6020B	0.00394	0.0500								
Cadmium	< 0.00250	mg/L	SW6020B	0.000182	0.00250								
Chromium	< 0.0100	mg/L	SW6020B	0.00325	0.0100								
Lead	< 0.0500	mg/L	SW6020B	0.00409	0.0500								
Selenium	< 0.0100	mg/L	SW6020B	0.00306	0.0100								
Silver	< 0.0100	mg/L	SW6020B	0.000369	0.0100								
Lab Sample ID: MB-TCLP-44637	Date Analyzed:	08/25/2016	917h										
Test Code:	6020B-TCLP	Date Prepared:	08/24/2016	1443h									
Arsenic	< 0.0100	mg/L	SW6020B	0.00353	0.0100								
Barium	< 0.0500	mg/L	SW6020B	0.00394	0.0500								
Cadmium	< 0.00250	mg/L	SW6020B	0.000182	0.00250								
Chromium	< 0.0100	mg/L	SW6020B	0.00325	0.0100								
Lead	< 0.0500	mg/L	SW6020B	0.00409	0.0500								
Selenium	< 0.0100	mg/L	SW6020B	0.00306	0.0100								
Silver	< 0.0100	mg/L	SW6020B	0.000369	0.0100								



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1608483
Project: Tibble Fork Dam

Contact: Kevin Okleberry
Dept: ME
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-44649	Date Analyzed:	08/25/2016	1034h										
Test Code:	HG-TCLP-7470A	Date Prepared:	08/24/2016	1500h									
Mercury	< 0.00100	mg/L	SW7470A	0.00000559	0.00100								
Lab Sample ID: MB-TCLP-44636	Date Analyzed:	08/25/2016	1055h										
Test Code:	HG-TCLP-7470A	Date Prepared:	08/24/2016	1500h									
Mercury	< 0.00100	mg/L	SW7470A	0.00000559	0.00100								
Lab Sample ID: MB-TCLP-44637	Date Analyzed:	08/25/2016	1057h										
Test Code:	HG-TCLP-7470A	Date Prepared:	08/24/2016	1500h									
Mercury	< 0.00100	mg/L	SW7470A	0.00000559	0.00100								



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QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1608483
Project: Tibble Fork Dam

Contact: Kevin Okleberry
Dept: ME
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1608483-001AMS	Date Analyzed:	08/25/2016	830h										
Test Code:	6020B-TCLP	Date Prepared:	08/24/2016	1443h									
Arsenic	0.446	mg/L	SW6020B	0.00353	0.0100	0.4000	0.0362	102	75 - 125				
Barium	1.62	mg/L	SW6020B	0.00394	0.0500	0.4000	1.25	94.2	75 - 125				
Cadmium	0.414	mg/L	SW6020B	0.000182	0.00250	0.4000	0.0189	98.7	75 - 125				
Chromium	0.405	mg/L	SW6020B	0.00325	0.0100	0.4000	0	101	75 - 125				
Lead	0.609	mg/L	SW6020B	0.00409	0.0500	0.4000	0.214	98.7	75 - 125				
Selenium	0.398	mg/L	SW6020B	0.00306	0.0100	0.4000	0	99.5	75 - 125				
Silver	0.389	mg/L	SW6020B	0.000369	0.0100	0.4000	0	97.2	75 - 125				
Lab Sample ID: 1608483-001AMS	Date Analyzed:	08/25/2016	1043h										
Test Code:	HG-TCLP-7470A	Date Prepared:	08/24/2016	1500h									
Mercury	0.0336	mg/L	SW7470A	0.0000559	0.0100	0.03330	0	101	80 - 120				



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Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Utah Division of Water Quality
Lab Set ID: 1608483
Project: Tibble Fork Dam

Contact: Kevin Okleberry
Dept: ME
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1608483-001AMSD	Date Analyzed:	08/25/2016	833h										
Test Code:	6020B-TCLP	Date Prepared:	08/24/2016	1443h									
Arsenic	0.454	mg/L	SW6020B	0.00353	0.0100	0.4000	0.0362	105	75 - 125	0.446	1.97	20	
Barium	1.62	mg/L	SW6020B	0.00394	0.0500	0.4000	1.25	93.9	75 - 125	1.62	0.0626	20	
Cadmium	0.416	mg/L	SW6020B	0.000182	0.00250	0.4000	0.0189	99.3	75 - 125	0.414	0.562	20	
Chromium	0.401	mg/L	SW6020B	0.00325	0.0100	0.4000	0	100	75 - 125	0.405	0.959	20	
Lead	0.607	mg/L	SW6020B	0.00409	0.0500	0.4000	0.214	98.2	75 - 125	0.609	0.314	20	
Selenium	0.401	mg/L	SW6020B	0.00306	0.0100	0.4000	0	100	75 - 125	0.398	0.795	20	
Silver	0.386	mg/L	SW6020B	0.000369	0.0100	0.4000	0	96.4	75 - 125	0.389	0.882	20	
Lab Sample ID: 1608483-001AMSD	Date Analyzed:	08/25/2016	1044h										
Test Code:	HG-TCLP-7470A	Date Prepared:	08/24/2016	1500h									
Mercury	0.0340	mg/L	SW7470A	0.0000559	0.0100	0.03330	0	102	80 - 120	0.0336	1.13	20	

WORK ORDER Summary

Work Order: **1608483**

Page 1 of 1

Client: Utah Division of Water Quality

Due Date: 8/26/2016

Client ID: UTD200

Contact: Toby Hooker

Project: Tibble Fork Dam

QC Level: III

WO Type: Standard

Comments: 2-Day Rush; QC 3. Other analytical on set 1608482 as Next Day Rush.;

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1608483-001A	4994980 - SED	8/23/2016 1225h	8/23/2016 1647h	1311LM-PR			TCLP
				3005A-TCLP-PR			TCLP
				6020B-TCLP			TCLP
				7 SEL Analytes: AS BA CD CR PB SE AG			
				HG-TCLP-7470A			TCLP
				1 SEL Analytes: HG			
				HG-TCLP-PR			TCLP
1608483-002A	5912840 - SED	8/23/2016 1425h	8/23/2016 1647h	1311LM-PR			TCLP
				3005A-TCLP-PR			TCLP
				6020B-TCLP			TCLP
				7 SEL Analytes: AS BA CD CR PB SE AG			
				HG-TCLP-7470A			TCLP
				1 SEL Analytes: HG			
				HG-TCLP-PR			TCLP
1608483-003A	5912810 - SED	8/23/2016 1445h	8/23/2016 1647h	1311LM-PR			TCLP
				3005A-TCLP-PR			TCLP
				6020B-TCLP			TCLP
				7 SEL Analytes: AS BA CD CR PB SE AG			
				HG-TCLP-7470A			TCLP
				1 SEL Analytes: HG			
				HG-TCLP-PR			TCLP
1608483-004A	4994990 - SED	8/23/2016 1500h	8/23/2016 1647h	1311LM-PR			TCLP
				3005A-TCLP-PR			TCLP
				6020B-TCLP			TCLP
				7 SEL Analytes: AS BA CD CR PB SE AG			
				HG-TCLP-7470A			TCLP
				1 SEL Analytes: HG			
				HG-TCLP-PR			TCLP

