
**UIC CLASS V
QUARTERLY REPORT
for the
LOST CREEK ISR PROJECT
1st Quarter 2017**



**LOST CREEK ISR, LLC
SWEETWATER COUNTY, WY**

UIC PERMIT 15-081

**Prepared by Ur-Energy for
Wyoming Department of Environmental Quality -
Water Quality Division – Underground Injection Control**

April 28, 2017



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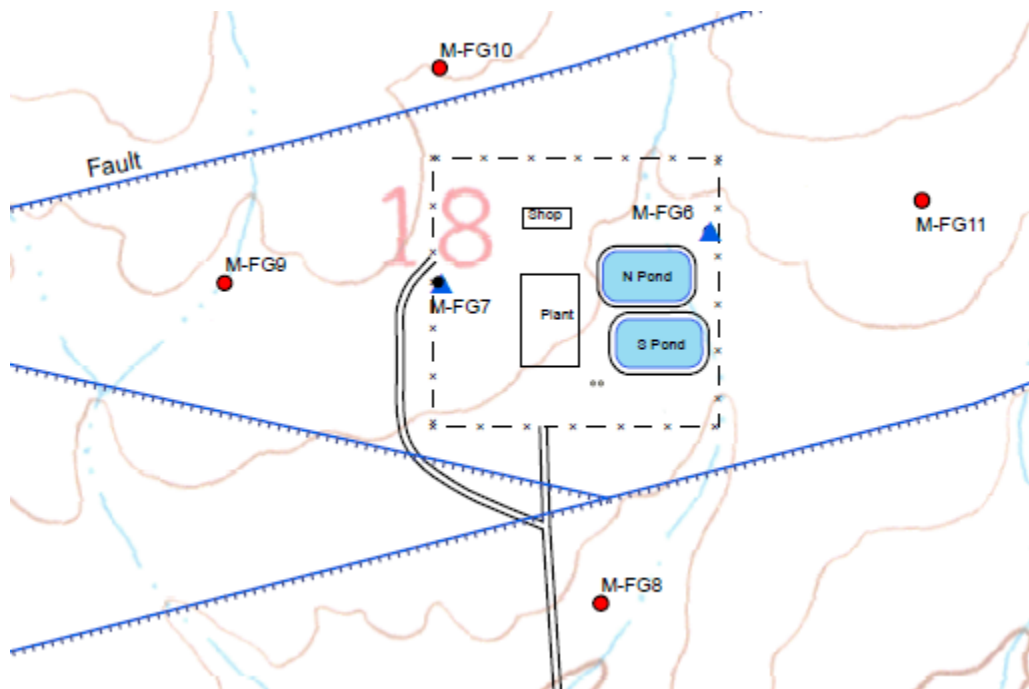


1.0 Introduction

The period covered by this report is the first calendar quarter of 2017 from January 1 to March 31, 2017.

Two Class V disposal wells were available for operation during the reporting period: M-FG6 and M-FG7. Well locations (labeled) are shown below in relation to the Plant area:

FIGURE 1: Well Locations



Only one well was operated intermittently during the quarter. Operational data was monitored and recorded electronically and also recorded manually by operator each day of operation.

As per permit requirements, the following elements from Section 9b of the UIC Permit have been included in this report:

1. Injection rates for each month of the quarter, including:
 - i. Minimum instantaneous
 - ii. Volume-weighted average
 - iii. Maximum instantaneous
 - iv. Maximum permitted injection rate
2. Injection pressure for each month of the quarter, including:
 - i. Minimum daily
 - ii. Average daily



- iii. *Maximum daily*
- iv. *Maximum permitted injection pressure*
- v. *Pressures at which alarms or kill switches are activated*
- 3. *Injection volume per well, including:*
 - i. *Total volume for each month*
 - ii. *Total volume for the quarter*
 - iii. *Total volume to date*
- 4. *Analytical results required by Table 6 of the permit.*
- 5. *Any permit exceedances within the quarter.*
- 6. *Description of all events that triggered alarms or shutdowns and the responses taken during the quarter.*
- 7. *Reports for any well tests or well work overs conducted more than thirty days before the end of the quarter.*

2.0 Summary Data

Tables 1A and 1B below provide a data summary for above items **1, 2, and 3** above. Data for item **2** above is provided in **Appendix 1** including tables and charts of the daily injection pressure values.

TABLE 1A: Operational Data Summary for M-FG7

PARAMETER	UNITS	M-FG7			
		January 2017	February 2017	March 2017	Quarterly Total/Avg Min/Max
Operation Time	min	1681	2038	2058	5778
% Run Time	%	4%	5%	5%	13%
Injection Rate Minimum Instantaneous	gpm	0	0	0	0
Injection Rate Average (TWA)	gpm	79	78	89	82
Injection Rate Maximum Instantaneous	gpm	190	174	203	189
Injection Rate Maximum Permit Limit	gpm	200			200
Injection Pressure Daily Minimum	psig	0	0	0	0
Injection Pressure Daily Average	psig	1.1	0.2	0.4	0.6
Injection Pressure Daily Maximum	psig	37	22	39	33
Injection Pressure Permit Limit (LSIP)	psig	45			45
Injection Pressure Automatic Kill	psig	45			45
Injection Volume	gal	132345	159219	182834	474398
Injection Volume	bbl	3151	3791	4353	11295



TABLE 1B: Operational Data Summary for M-FG6

PARAMETER	UNITS	M-FG6			
		January 2017	February 2017	March 2017	Quarterly Total/Avg Min/Max
Operation Time	min	0	0	0	0
% Run Time	%	0%	0%	0%	0%
Injection Rate Minimum Instantaneous	gpm	0	0	0	0
Injection Rate Average (TWA)	gpm	0	0	0	0
Injection Rate Maximum Instantaneous	gpm	0	0	0	0
Injection Rate Maximum Permit Limit	gpm	200			200
Injection Pressure Daily Minimum	psig	0	0	0	0
Injection Pressure Daily Average	psig	0	0	0	0
Injection Pressure Daily Maximum	psig	0	0	0	0
Injection Pressure Permit Limit (LSIP)	psig	45			45
Injection Pressure Automatic Kill	psig	45			45
Injection Volume	gal	0	0	0	0
Injection Volume	bbl	0	0	0	0

TABLE 2: Cumulative Injection Volumes to Date

TIME PERIOD	UNITS	M-FG7	M-FG6
2017Q1	bbl	11,295	0
CUMULATIVE TOTAL TO DATE	bbl	11,295	0



3.0 Analytical Results

A quarterly grab sample of the injectate was collected from the Plant waste water line upstream of the branch points to each individual well. Sample parameters pH, conductivity, and temperature were measured with a field meter at the sampling site and other applicable parameters were analyzed by Energy Laboratories in Casper, WY. Results of the sample analyses are summarized in **Table 3** below and the associated lab report is included as **Appendix 2**.

TABLE 3: Analytical Results Summary

Sample ID: Class V Grab				
Sample Date: 3/16/2017				
Lab Analyte or Parameter	Method Used	Results	Units	Permit Limit
Temperature, field	<i>SM2550B</i>	10.0	°C	---
pH, field	<i>SM4500-H*B</i>	6.67	s.u.	6.5≤pH≤9.0
Specific Gravity	<i>D1429</i>	1.000	---	---
Total Dissolved Solids	<i>SM2540C</i>	275	mg/L	500 mg/L
Uranium, total	<i>E200.8</i>	0.0652	mg/L	0.158 mg/L
Lead-210, total	<i>E909.0</i>	3.0	pCi/L	10 pCi/L
Polonium-210, total	<i>H Po-02-RC</i>	0.2	pCi/L	40 pCi/L
Thorium-230, total	<i>E908.0</i>	0.4	pCi/L	100 pCi/L
Radium 226 + 228, total	<i>E903.0 / RA-05</i>	2.10	pCi/L	5.4 pCi/L
Gross Alpha, total	<i>E900.0</i>	40.0	pCi/L	57 pCi/L
Gross Beta, total	<i>E900.0</i>	17.4	pCi/L	15 pCi/L

The analytical results were less than the permit limit with the following exceptions:

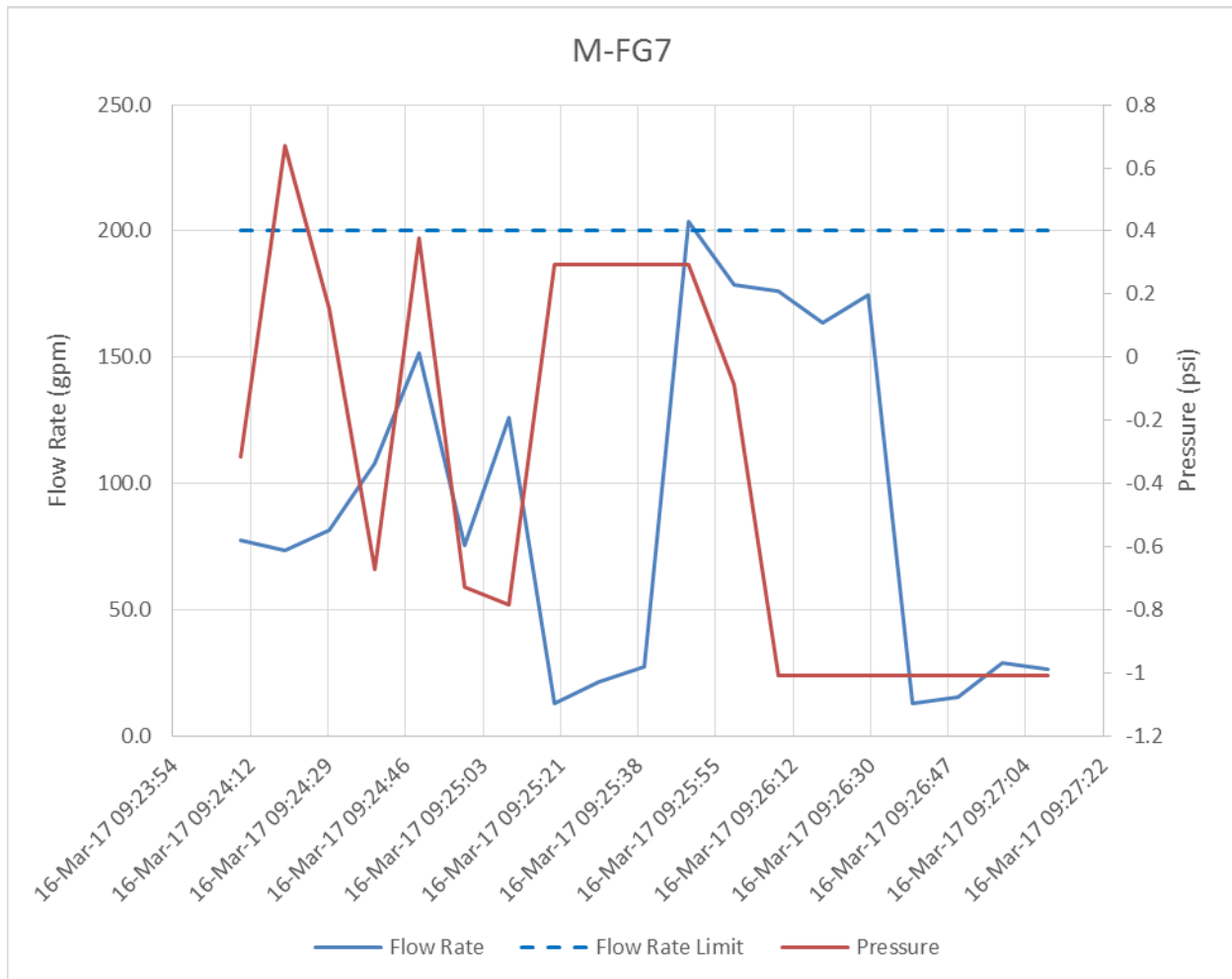
- Gross beta results of 17.4 pCi/L exceeded the limit of 15 pCi/L. Additional measures are being investigated to determine how to reduce beta accumulation in the effluent.

The semi-annual monitor well samples had not been collected and will be collected in the second quarter.

4.0 Permit Exceedances

No exceedances occurred for operational parameters with the following exception:

- A flow rate spike of 203 gpm occurred on March 16, 2017. The flow rate was an instantaneous peak in the flow. The short-term higher flow rate was theorized to be due to the negative flow (siphon) characteristic of the receiving aquifer. The negative pressure associated with the siphon effect and the flow rate spike are shown in the chart below.



5.0 Alarms, Shut-Downs, and Corrective Actions

Intermittent operation of the injection system is typical. No emergency shutdowns had occurred during the quarter. Additional measures are being investigated to further reduce the beta accumulation in the treated water.

6.0 Summary of Well Tests or Workovers

No well tests or workovers occurred during the quarter.



APPENDIX 1

**APPENDIX 1: Daily Injection Pressures
M-FG7 1st Quarter 2017
Lost Creek ISR Project 15-081**

Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
1/1/2017	0	0	0	45	45	
1/2/2017	0	0	0	45	45	
1/3/2017	0	0	0	45	45	
1/4/2017	0	0	0	45	45	
1/5/2017	0	0	0	45	45	
1/6/2017	0	0	0	45	45	
1/7/2017	0	0	0	45	45	
1/8/2017	0	0	0	45	45	
1/9/2017	0	0	0	45	45	
1/10/2017	0	0	0	45	45	
1/11/2017	0	0	0	45	45	
1/12/2017	0	0	16	45	45	
1/13/2017	0	0	19	45	45	
1/14/2017	0	0	0	45	45	
1/15/2017	0	0	0	45	45	
1/16/2017	0	0	0	45	45	
1/17/2017	0	9	28	45	45	
1/18/2017	0	10	35	45	45	
1/19/2017	0	0	0	45	45	
1/20/2017	0	0	0	45	45	
1/21/2017	0	0	0	45	45	
1/22/2017	0	0	0	45	45	
1/23/2017	0	3	36	45	45	
1/24/2017	0	0	0	45	45	
1/25/2017	0	6	37	45	45	
1/26/2017	0	0	1	45	45	
1/27/2017	0	0	0	45	45	
1/28/2017	0	0	0	45	45	
1/29/2017	0	0	0	45	45	
1/30/2017	0	0	0	45	45	
1/31/2017	0	0	0	45	45	
2/1/2017	0	0	0	45	45	
2/2/2017	0	0	0	45	45	
2/3/2017	0	0	0	45	45	
2/4/2017	0	0	0	45	45	
2/5/2017	0	0	0	45	45	
2/6/2017	0	0	0	45	45	
2/7/2017	0	0	0	45	45	
2/8/2017	0	0	0	45	45	
2/9/2017	0	0	22	45	45	
2/10/2017	0	1	14	45	45	
2/11/2017	0	0	0	45	45	

**APPENDIX 1: Daily Injection Pressures
M-FG7 1st Quarter 2017
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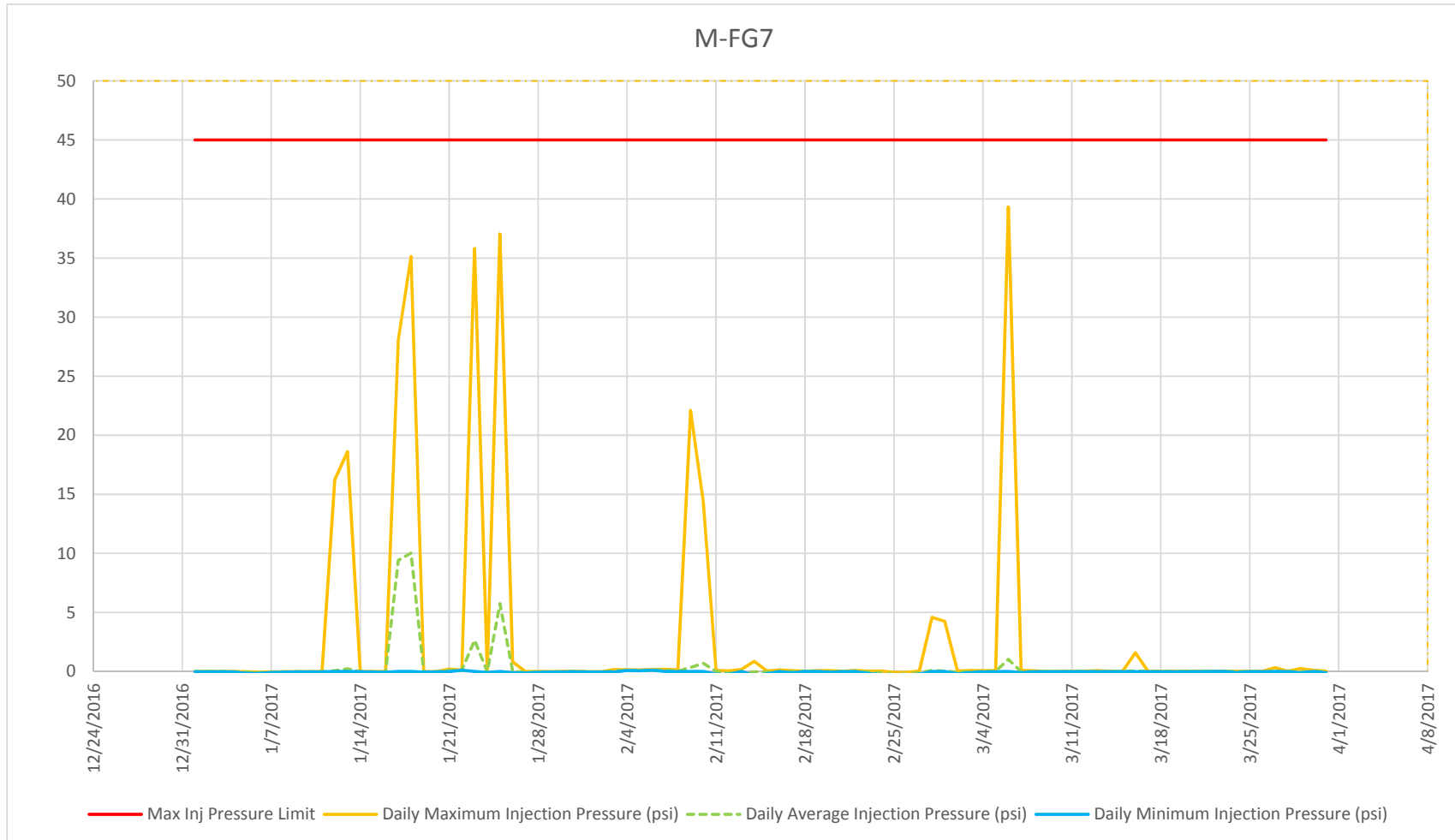
Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
2/12/2017	0	0	0	45	45	
2/13/2017	0	0	0	45	45	
2/14/2017	0	0	1	45	45	
2/15/2017	0	0	0	45	45	
2/16/2017	0	0	0	45	45	
2/17/2017	0	0	0	45	45	
2/18/2017	0	0	0	45	45	
2/19/2017	0	0	0	45	45	
2/20/2017	0	0	0	45	45	
2/21/2017	0	0	0	45	45	
2/22/2017	0	0	0	45	45	
2/23/2017	0	0	0	45	45	
2/24/2017	0	0	0	45	45	
2/25/2017	0	0	0	45	45	
2/26/2017	0	0	0	45	45	
2/27/2017	0	0	0	45	45	
2/28/2017	0	0	5	45	45	
3/1/2017	0	0	4	45	45	
3/2/2017	0	0	0	45	45	
3/3/2017	0	0	0	45	45	
3/4/2017	0	0	0	45	45	
3/5/2017	0	0	0	45	45	
3/6/2017	0	1	39	45	45	
3/7/2017	0	0	0	45	45	
3/8/2017	0	0	0	45	45	
3/9/2017	0	0	0	45	45	
3/10/2017	0	0	0	45	45	
3/11/2017	0	0	0	45	45	
3/12/2017	0	0	0	45	45	
3/13/2017	0	0	0	45	45	
3/14/2017	0	0	0	45	45	
3/15/2017	0	0	0	45	45	
3/16/2017	0	0	2	45	45	
3/17/2017	0	0	0	45	45	
3/18/2017	0	0	0	45	45	
3/19/2017	0	0	0	45	45	
3/20/2017	0	0	0	45	45	
3/21/2017	0	0	0	45	45	
3/22/2017	0	0	0	45	45	
3/23/2017	0	0	0	45	45	
3/24/2017	0	0	0	45	45	
3/25/2017	0	0	0	45	45	

**APPENDIX 1: Daily Injection Pressures
M-FG7 1st Quarter 2017
Lost Creek ISR Project 15-081**

Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
3/26/2017	0	0	0	45	45	
3/27/2017	0	0	0	45	45	
3/28/2017	0	0	0	45	45	
3/29/2017	0	0	0	45	45	
3/30/2017	0	0	0	45	45	
3/31/2017	0	0	0	45	45	

psi: pounds per square inch

APPENDIX 1: Daily Injection Pressures
M-FG7 1st Quarter 2017
Lost Creek ISR Project 15-081



**APPENDIX 1: Daily Injection Pressures
M-FG6 1st Quarter 2017
Lost Creek ISR Project 15-081**

Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
1/1/2017	0	0	0	45	45	
1/2/2017	0	0	0	45	45	
1/3/2017	0	0	0	45	45	
1/4/2017	0	0	0	45	45	
1/5/2017	0	0	0	45	45	
1/6/2017	0	0	0	45	45	
1/7/2017	0	0	0	45	45	
1/8/2017	0	0	0	45	45	
1/9/2017	0	0	0	45	45	
1/10/2017	0	0	0	45	45	
1/11/2017	0	0	0	45	45	
1/12/2017	0	0	0	45	45	
1/13/2017	0	0	0	45	45	
1/14/2017	0	0	0	45	45	
1/15/2017	0	0	0	45	45	
1/16/2017	0	0	0	45	45	
1/17/2017	0	0	0	45	45	
1/18/2017	0	0	0	45	45	
1/19/2017	0	0	0	45	45	
1/20/2017	0	0	0	45	45	
1/21/2017	0	0	0	45	45	
1/22/2017	0	0	0	45	45	
1/23/2017	0	0	0	45	45	
1/24/2017	0	0	0	45	45	
1/25/2017	0	0	0	45	45	
1/26/2017	0	0	0	45	45	
1/27/2017	0	0	0	45	45	
1/28/2017	0	0	0	45	45	
1/29/2017	0	0	0	45	45	
1/30/2017	0	0	0	45	45	
1/31/2017	0	0	0	45	45	
2/1/2017	0	0	0	45	45	
2/2/2017	0	0	0	45	45	
2/3/2017	0	0	0	45	45	
2/4/2017	0	0	0	45	45	
2/5/2017	0	0	0	45	45	
2/6/2017	0	0	0	45	45	
2/7/2017	0	0	0	45	45	
2/8/2017	0	0	0	45	45	
2/9/2017	0	0	0	45	45	
2/10/2017	0	0	0	45	45	
2/11/2017	0	0	0	45	45	

**APPENDIX 1: Daily Injection Pressures
M-FG6 1st Quarter 2017
Lost Creek ISR Project 15-081**

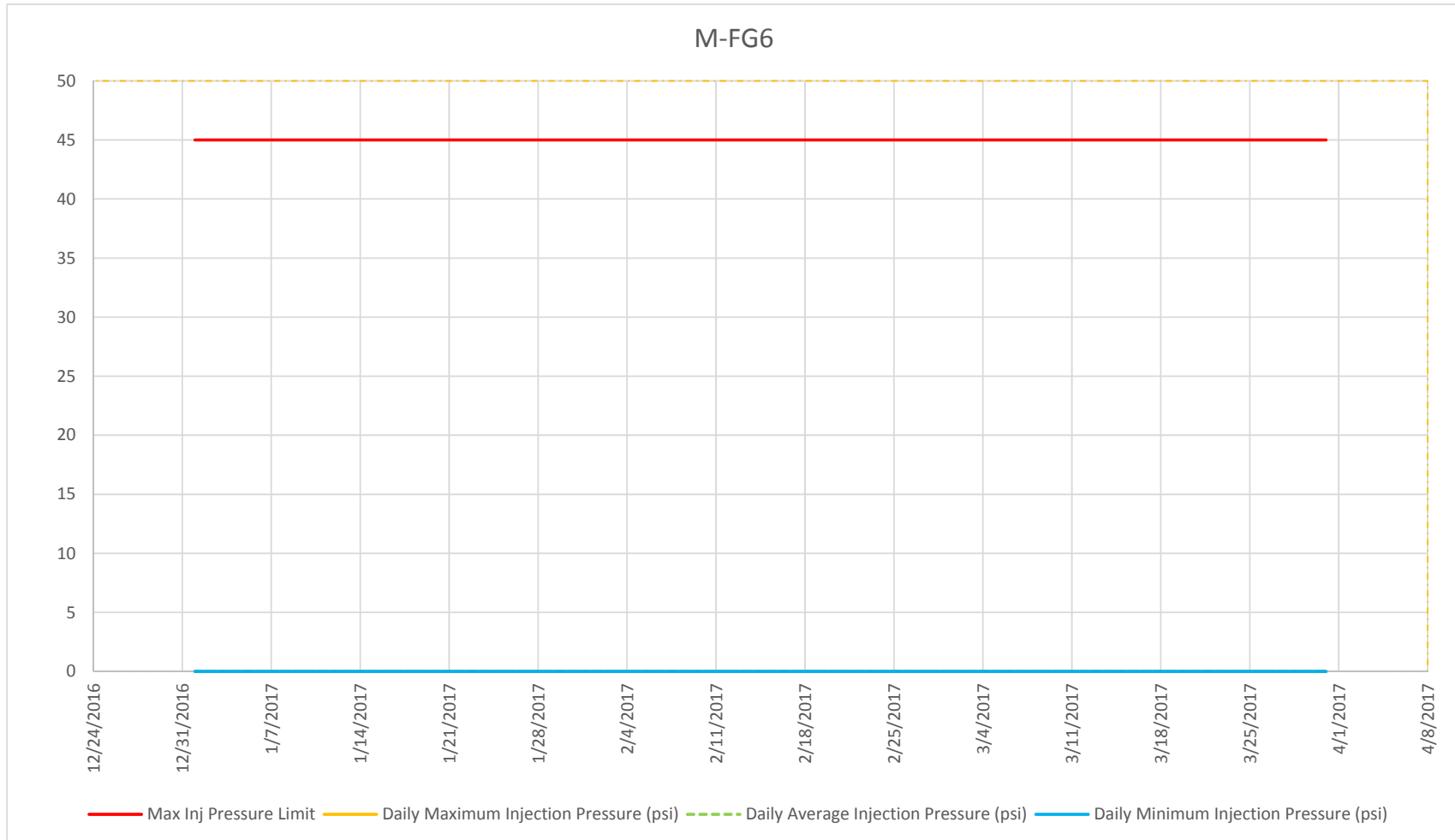
Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
2/12/2017	0	0	0	45	45	
2/13/2017	0	0	0	45	45	
2/14/2017	0	0	0	45	45	
2/15/2017	0	0	0	45	45	
2/16/2017	0	0	0	45	45	
2/17/2017	0	0	0	45	45	
2/18/2017	0	0	0	45	45	
2/19/2017	0	0	0	45	45	
2/20/2017	0	0	0	45	45	
2/21/2017	0	0	0	45	45	
2/22/2017	0	0	0	45	45	
2/23/2017	0	0	0	45	45	
2/24/2017	0	0	0	45	45	
2/25/2017	0	0	0	45	45	
2/26/2017	0	0	0	45	45	
2/27/2017	0	0	0	45	45	
2/28/2017	0	0	0	45	45	
3/1/2017	0	0	0	45	45	
3/2/2017	0	0	0	45	45	
3/3/2017	0	0	0	45	45	
3/4/2017	0	0	0	45	45	
3/5/2017	0	0	0	45	45	
3/6/2017	0	0	0	45	45	
3/7/2017	0	0	0	45	45	
3/8/2017	0	0	0	45	45	
3/9/2017	0	0	0	45	45	
3/10/2017	0	0	0	45	45	
3/11/2017	0	0	0	45	45	
3/12/2017	0	0	0	45	45	
3/13/2017	0	0	0	45	45	
3/14/2017	0	0	0	45	45	
3/15/2017	0	0	0	45	45	
3/16/2017	0	0	0	45	45	
3/17/2017	0	0	0	45	45	
3/18/2017	0	0	0	45	45	
3/19/2017	0	0	0	45	45	
3/20/2017	0	0	0	45	45	
3/21/2017	0	0	0	45	45	
3/22/2017	0	0	0	45	45	
3/23/2017	0	0	0	45	45	
3/24/2017	0	0	0	45	45	
3/25/2017	0	0	0	45	45	

**APPENDIX 1: Daily Injection Pressures
M-FG6 1st Quarter 2017
Lost Creek ISR Project 15-081**

Date	Daily Minimum Injection Pressure (psi)	Daily Average Injection Pressure (psi)	Daily Maximum Injection Pressure (psi)	Automatic Shutdown Pressure (psi)	Maximum Injection Pressure Limit (psi)	Comments
3/26/2017	0	0	0	45	45	
3/27/2017	0	0	0	45	45	
3/28/2017	0	0	0	45	45	
3/29/2017	0	0	0	45	45	
3/30/2017	0	0	0	45	45	
3/31/2017	0	0	0	45	45	

psi: pounds per square inch

APPENDIX 1: Daily Injection Pressures
M-FG6 1st Quarter 2017
Lost Creek ISR Project 15-081





APPENDIX 2



ANALYTICAL SUMMARY REPORT

April 18, 2017

UR Energy USA Inc
10758 W Centennial Rd Ste 200
Ken Caryl Ranch, CO 80127

Work Order: C17030617

Project Name: Lost Creek Class V

Energy Laboratories, Inc. Casper WY received the following 1 sample for UR Energy USA Inc on 3/17/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17030617-001	Class V Grab	03/16/17 9:50	03/17/17	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Mercury, Dissolved Specific Gravity Anions by Ion Chromatography Uranium, Total pH Preservation by the Laboratory Metals Preparation by EPA 200.2 Sample Filtering, Metals Sample Filtering, Radiochemical Analytes Gross Alpha, Gross Beta Gross Alpha, Gross Beta Lead 210, Dissolved Lead 210, Total Polonium 210, Dissolved Polonium 210, Total Radium 226 + Radium 228 Radium 226 + Radium 228 Radium 226, Dissolved Radium 226, Total Radium 228, Dissolved Radium 228, Total Thorium, Isotopic Thorium, Isotopic Solids, Total Dissolved

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:



CLIENT: UR Energy USA Inc
Project: Lost Creek Class V
Work Order: C17030617

Report Date: 04/18/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W. Boxelder Rd., Gillette, WY, EPA Number WY00006.

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Prep Comments for Sample C17030617-001D, Test PRP-FILT-RAD: The prep hold time was exceeded by 3.14 days.

Prep Comments for Sample C17030617-001F, Test PRP-FILT-RAD: The prep hold time was exceeded by 3.14 days.

Prep Comments for Sample C17030617-001B, Test PRP-FILT-MET: The prep hold time was exceeded by 3.13 days.

Prep Comments for Sample C17030617-001C, Test PRESERVATION: - The sample fraction submitted for Metals Analysis was received in the laboratory with a pH of ~7. This is outside of the method specified requirement of pH < 2. Proper preservation was added before sample analysis.

Prep Comments for Sample C17030617-001E, Test PRESERVATION: - The sample fraction submitted for Radiochemical Analysis was received in the laboratory with a pH of ~ 7. This is outside of the method specified requirement of pH < 2. Proper preservation was added before sample analysis.

Prep Comments for Sample C17030617-001G, Test PRESERVATION: - The sample fraction submitted for Radiochemical Analysis was received in the laboratory with a pH of ~ 7. This is outside of the method specified requirement of pH < 2. Proper preservation was added before sample analysis.



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: UR Energy USA Inc
Project: Lost Creek Class V
Lab ID: C17030617-001
Client Sample ID: Class V Grab

Report Date: 04/18/17
Collection Date: 03/16/17 09:50
Date Received: 03/17/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Fluoride	ND	mg/L		0.1		E300.0	03/24/17 22:07 / jcg
PHYSICAL PROPERTIES							
Specific Gravity 60/60F	1.000	unitless				D1429	03/24/17 13:02 / eli-g
Conductivity @ 25 C	435	umhos/cm		5		A2510 B	03/21/17 08:23 / bah
pH	6.83	s.u.	H	0.01		A4500-H B	03/21/17 08:23 / bah
Solids, Total Dissolved TDS @ 180 C	275	mg/L		10		A2540 C	03/22/17 15:58 / bah
METALS, DISSOLVED							
Arsenic	ND	mg/L		0.001		E200.8	03/31/17 22:11 / eli-b
Barium	0.17	mg/L		0.05		E200.8	03/31/17 22:11 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	03/31/17 22:11 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	03/31/17 22:11 / eli-b
Chromium	ND	mg/L		0.005		E200.8	03/31/17 22:11 / eli-b
Copper	ND	mg/L		0.005		E200.8	03/31/17 22:11 / eli-b
Lead	ND	mg/L		0.001		E200.8	03/31/17 22:11 / eli-b
Mercury	ND	mg/L		0.0001		E245.1	04/03/17 16:11 / eli-b
Selenium	0.001	mg/L		0.001		E200.8	03/31/17 22:11 / eli-b
Uranium	0.0652	mg/L		0.0003		E200.8	03/31/17 22:11 / eli-b
METALS, TOTAL							
Uranium	0.0724	mg/L		0.0003		E200.8	03/28/17 14:57 / sf
RADIONUCLIDES - DISSOLVED							
Gross Alpha	46.8	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Alpha precision (±)	9.6	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Alpha MDC	1.7	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta	13.7	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta precision (±)	2.0	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta MDC	2.9	pCi/L				E900.0	04/07/17 01:04 / trs
Lead 210	1.2	pCi/L	U			E909.0	04/09/17 01:04 / plj
Lead 210 precision (±)	0.9	pCi/L				E909.0	04/09/17 01:04 / plj
Lead 210 MDC	1.3	pCi/L				E909.0	04/09/17 01:04 / plj
Polonium 210	-0.05	pCi/L	U			H Po-02-RC	04/06/17 08:06 / cng
Polonium 210 precision (±)	0.3	pCi/L				H Po-02-RC	04/06/17 08:06 / cng
Polonium 210 MDC	0.8	pCi/L				H Po-02-RC	04/06/17 08:06 / cng
Radium 226	0.08	pCi/L	U			E903.0	04/11/17 10:54 / trs
Radium 226 precision (±)	0.1	pCi/L				E903.0	04/11/17 10:54 / trs
Radium 226 MDC	0.13	pCi/L				E903.0	04/11/17 10:54 / trs
Radium 228	2.1	pCi/L				RA-05	04/12/17 14:11 / plj
Radium 228 precision (±)	1.0	pCi/L				RA-05	04/12/17 14:11 / plj
Radium 228 MDC	1.5	pCi/L				RA-05	04/12/17 14:11 / plj
Radium 226 + Radium 228	2.2	pCi/L				A7500-RA	04/17/17 16:30 / dmf
Radium 226 + Radium 228 precision (±)	1.0	pCi/L				A7500-RA	04/17/17 16:30 / dmf

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 MDC - Minimum detectable concentration
 U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.
 H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: UR Energy USA Inc
Project: Lost Creek Class V
Lab ID: C17030617-001
Client Sample ID: Class V Grab

Report Date: 04/18/17
Collection Date: 03/16/17 09:50
Date Received: 03/17/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - DISSOLVED							
Radium 226 + Radium 228 MDC	1.5	pCi/L				A7500-RA	04/17/17 16:30 / dmf
Thorium 230	0.08	pCi/L	U			E908.0	04/12/17 10:03 / cng
Thorium 230 precision (±)	0.1	pCi/L				E908.0	04/12/17 10:03 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	04/12/17 10:03 / cng
RADIONUCLIDES - TOTAL							
Gross Alpha	40.4	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Alpha precision (±)	8.4	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Alpha MDC	2.2	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta	17.4	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta precision (±)	2.4	pCi/L				E900.0	04/07/17 01:04 / trs
Gross Beta MDC	2.9	pCi/L				E900.0	04/07/17 01:04 / trs
Lead 210	3.0	pCi/L				E909.0	04/09/17 03:44 / plj
Lead 210 precision (±)	1.3	pCi/L				E909.0	04/09/17 03:44 / plj
Lead 210 MDC	1.4	pCi/L				E909.0	04/09/17 03:44 / plj
Polonium 210	0.2	pCi/L	U			H Po-02-RC	04/06/17 08:06 / cng
Polonium 210 precision (±)	0.3	pCi/L				H Po-02-RC	04/06/17 08:06 / cng
Polonium 210 MDC	0.5	pCi/L				H Po-02-RC	04/06/17 08:06 / cng
Radium 226	0.10	pCi/L	U			E903.0	04/11/17 10:54 / trs
Radium 226 precision (±)	0.09	pCi/L				E903.0	04/11/17 10:54 / trs
Radium 226 MDC	0.13	pCi/L				E903.0	04/11/17 10:54 / trs
Radium 228	2.0	pCi/L				RA-05	04/12/17 14:12 / plj
Radium 228 precision (±)	0.91	pCi/L				RA-05	04/12/17 14:12 / plj
Radium 228 MDC	1.5	pCi/L				RA-05	04/12/17 14:12 / plj
Radium 226 + Radium 228	2.1	pCi/L				A7500-RA	04/17/17 16:30 / dmf
Radium 226 + Radium 228 precision (±)	0.9	pCi/L				A7500-RA	04/17/17 16:30 / dmf
Radium 226 + Radium 228 MDC	1.5	pCi/L				A7500-RA	04/17/17 16:30 / dmf
Thorium 230	0.4	pCi/L				E908.0	04/12/17 10:03 / cng
Thorium 230 precision (±)	0.2	pCi/L				E908.0	04/12/17 10:03 / cng
Thorium 230 MDC	0.1	pCi/L				E908.0	04/12/17 10:03 / cng

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.
 U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: UR Energy USA Inc

Report Date: 04/04/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: E200.8										Analytical Run: ICPMS206-B_170331A	
Lab ID: QCS	9	Initial Calibration Verification Standard							03/31/17 21:51		
Arsenic		0.0518	mg/L	0.0050	104	90	110				
Barium		0.0499	mg/L	0.10	100	90	110				
Beryllium		0.0258	mg/L	0.0010	103	90	110				
Cadmium		0.0262	mg/L	0.0010	105	90	110				
Chromium		0.0514	mg/L	0.010	103	90	110				
Copper		0.0521	mg/L	0.010	104	90	110				
Lead		0.0506	mg/L	0.010	101	90	110				
Selenium		0.0500	mg/L	0.0050	100	90	110				
Uranium		0.0212	mg/L	0.0010	106	90	110				
Method: E200.8										Batch: R277288	
Lab ID: LRB	9	Method Blank							Run: ICPMS206-B_170331A 03/31/17 10:58		
Arsenic		ND	mg/L	0.0001							
Barium		ND	mg/L	0.00004							
Beryllium		ND	mg/L	0.00003							
Cadmium		ND	mg/L	0.00002							
Chromium		ND	mg/L	0.00004							
Copper		ND	mg/L	0.0001							
Lead		ND	mg/L	0.00002							
Selenium		ND	mg/L	0.0004							
Uranium		ND	mg/L	0.00003							
Lab ID: LFB	9	Laboratory Fortified Blank							Run: ICPMS206-B_170331A 03/31/17 11:09		
Arsenic		0.0496	mg/L	0.0050	99	85	115				
Barium		0.0512	mg/L	0.10	102	85	115				
Beryllium		0.0528	mg/L	0.0010	106	85	115				
Cadmium		0.0517	mg/L	0.0010	103	85	115				
Chromium		0.0518	mg/L	0.010	104	85	115				
Copper		0.0512	mg/L	0.010	102	85	115				
Lead		0.0516	mg/L	0.010	103	85	115				
Selenium		0.0494	mg/L	0.0050	99	85	115				
Uranium		0.0518	mg/L	0.0010	104	85	115				
Lab ID: MB-107765	9	Method Blank							Run: ICPMS206-B_170331A 03/31/17 22:08		
Arsenic		ND	mg/L	0.0001							
Barium		ND	mg/L	0.00004							
Beryllium		ND	mg/L	0.00003							
Cadmium		ND	mg/L	0.00002							
Chromium		ND	mg/L	0.00004							
Copper		ND	mg/L	0.0001							
Lead		0.00003	mg/L	0.00002							
Selenium		ND	mg/L	0.0004							
Uranium		ND	mg/L	0.00003							

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: UR Energy USA Inc

Report Date: 04/04/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8 Batch: R277288										
Lab ID:	B17032272-004BMS	9	Sample Matrix Spike							
						Run: ICPMS206-B_170331A				03/31/17 23:08
Arsenic		0.775	mg/L	0.0011	105	70	130			
Barium		0.486	mg/L	0.050	94	70	130			
Beryllium		0.439	mg/L	0.0010	88	70	130			
Cadmium		0.458	mg/L	0.0010	91	70	130			
Chromium		0.453	mg/L	0.0050	91	70	130			
Copper		0.494	mg/L	0.0050	96	70	130			
Lead		0.467	mg/L	0.0010	93	70	130			
Selenium		0.835	mg/L	0.0036	112	70	130			
Uranium		15.1	mg/L	0.00031		70	130			A
Lab ID: B17032272-004BMSD 9 Sample Matrix Spike Duplicate Run: ICPMS206-B_170331A 03/31/17 23:12										
Arsenic		0.765	mg/L	0.0011	103	70	130	1.2	20	
Barium		0.493	mg/L	0.050	95	70	130	1.6	20	
Beryllium		0.458	mg/L	0.0010	92	70	130	4.1	20	
Cadmium		0.468	mg/L	0.0010	93	70	130	2.1	20	
Chromium		0.474	mg/L	0.0050	95	70	130	4.6	20	
Copper		0.496	mg/L	0.0050	97	70	130	0.4	20	
Lead		0.480	mg/L	0.0010	95	70	130	2.7	20	
Selenium		0.784	mg/L	0.0036	102	70	130	6.3	20	
Uranium		14.4	mg/L	0.00031		70	130	4.2	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: UR Energy USA Inc

Report Date: 04/04/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: E245.1										Analytical Run: HGCV202-B_170403B	
Lab ID: ICV		Initial Calibration Verification Standard								04/03/17 14:30	
Mercury		0.00189	mg/L	0.00010	95	90	110				
Method: E245.1										Batch: 108057	
Lab ID: MB-108057		Method Blank								Run: HGCV202-B_170403B	04/03/17 16:07
Mercury		7E-06	mg/L	6E-06							
Lab ID: LCS-108057		Laboratory Control Sample								Run: HGCV202-B_170403B	04/03/17 16:09
Mercury		0.00189	mg/L	0.00010	94	85	115				
Lab ID: C17030617-001BMS		Sample Matrix Spike								Run: HGCV202-B_170403B	04/03/17 16:13
Mercury		0.00188	mg/L	0.00010	93	70	130				
Lab ID: C17030617-001BMSD		Sample Matrix Spike Duplicate								Run: HGCV202-B_170403B	04/03/17 16:15
Mercury		0.00188	mg/L	0.00010	93	70	130	0.2	30		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Gillette, WY Branch

Client: UR Energy USA Inc

Report Date: 03/24/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: D1429									Batch: R234965
Lab ID: LCS	Laboratory Control Sample								Run: BAL-ACCU-124_170324A 03/24/17 12:51
Specific Gravity 60/60F	1.020	unitless	100		85	115			
Lab ID: C17030617-001ADUP	Sample Duplicate								Run: BAL-ACCU-124_170324A 03/24/17 13:04
Specific Gravity 60/60F	1.000	unitless					0.0	1	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 04/18/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.0										Batch: GrAB-2341
Lab ID: Th230-GrAB-2341		Laboratory Control Sample				Run: G5000W_170405A				04/07/17 01:04
Gross Alpha		118	pCi/L		118	80	120			
Lab ID: Sr90-GrAB-2341		Laboratory Control Sample				Run: G5000W_170405A				04/07/17 01:04
Gross Beta		188	pCi/L		100	80	120			
Lab ID: MB-GrAB-2341	6	Method Blank				Run: G5000W_170405A				04/07/17 01:04
Gross Alpha		0.4	pCi/L							U
Gross Alpha precision (±)		0.8	pCi/L							
Gross Alpha MDC		1	pCi/L							
Gross Beta		-1	pCi/L							U
Gross Beta precision (±)		2	pCi/L							
Gross Beta MDC		3	pCi/L							
Lab ID: C17030601-001LMS		Sample Matrix Spike				Run: G5000W_170405A				04/07/17 01:04
Gross Alpha		122	pCi/L		74	70	130			
Lab ID: C17030601-001LMSD		Sample Matrix Spike Duplicate				Run: G5000W_170405A				04/07/17 01:04
Gross Alpha		119	pCi/L		71	70	130	2.6	20	
Lab ID: C17030601-001LMS		Sample Matrix Spike				Run: G5000W_170405A				04/07/17 01:04
Gross Beta		214	pCi/L		110	70	130			
Lab ID: C17030601-001LMSD		Sample Matrix Spike Duplicate				Run: G5000W_170405A				04/07/17 01:04
Gross Beta		223	pCi/L		115	70	130	3.9	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 04/18/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0								Batch: RA226-8452R		
Lab ID: LCS-RA226-8452		Laboratory Control Sample				Run: TENNELEC-3_170330C			04/11/17 10:54	
Radium 226		9.8	pCi/L		96	80	120			
Lab ID: MB-RA226-8452	3	Method Blank				Run: TENNELEC-3_170330C			04/11/17 10:54	
Radium 226		0.09	pCi/L							U
Radium 226 precision (±)		0.10	pCi/L							
Radium 226 MDC		0.1	pCi/L							
Lab ID: C17030852-001CMS		Sample Matrix Spike				Run: TENNELEC-3_170330C			04/11/17 12:32	
Radium 226		14	pCi/L		70	70	130			
Lab ID: C17030852-001CMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170330C			04/11/17 12:32	
Radium 226		16	pCi/L		78	70	130	11	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 04/18/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0								Batch: RA-TH-ISO-2546		
Lab ID: LCS-RA-TH-ISO-2546	Laboratory Control Sample			Run: EGG-ORTEC_2_170331A		04/12/17 10:03				
Thorium 230	6.3	pCi/L		109	80	120				
Lab ID: C17030714-002CMS	Sample Matrix Spike			Run: EGG-ORTEC_2_170331A		04/12/17 10:03				
Thorium 230	13	pCi/L		113	70	130				
Lab ID: C17030714-002CMSD	Sample Matrix Spike Duplicate			Run: EGG-ORTEC_2_170331A		04/12/17 10:03				
Thorium 230	9.8	pCi/L		85	70	130	28	20	R	
- The RPD for the MSD is high. The individual spike recoveries are within range, the MB is acceptable, and the LCS is acceptable therefore the batch is approved.										
Lab ID: MB-RA-TH-ISO-2546	3	Method Blank		Run: EGG-ORTEC_2_170331A		04/12/17 10:03				
Thorium 230		0.1	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

U - Not detected at minimum detectable concentration

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc
Project: Lost Creek Class V

Report Date: 04/18/17
Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: PB-210-0824
Lab ID: LCS-PB-210-0824		Laboratory Control Sample								Run: TRICARB LSC_170403A 04/07/17 13:21
Lead 210		54	pCi/L		113	80	120			
Lab ID: MB-PB-210-0824	3	Method Blank								Run: TRICARB LSC_170403A 04/07/17 13:48
Lead 210		0.6	pCi/L							U
Lead 210 precision (±)		0.7	pCi/L							
Lead 210 MDC		1	pCi/L							
Lab ID: C17030462-001CMS		Sample Matrix Spike								Run: TRICARB LSC_170403A 04/07/17 22:05
Lead 210		120	pCi/L		114	70	130			
Lab ID: C17030462-001CMSD		Sample Matrix Spike Duplicate								Run: TRICARB LSC_170403A 04/07/17 22:32
Lead 210		120	pCi/L		112	70	130	2.7	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc
Project: Lost Creek Class V

Report Date: 04/18/17
Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: H Po-02-RC										Batch: PO210-0658
Lab ID: LCS-PO210-0658		Laboratory Control Sample								Run: EGG-ORTEC_170330A 04/06/17 08:06
Polonium 210	26	pCi/L		82		80	120			
Lab ID: C17030520-006HMS		Sample Matrix Spike								Run: EGG-ORTEC_170330A 04/06/17 08:06
Polonium 210	60	pCi/L		95		70	130			
Lab ID: C17030520-006HMSD		Sample Matrix Spike Duplicate								Run: EGG-ORTEC_170330A 04/06/17 08:06
Polonium 210	64	pCi/L		101		70	130	5.7	20	
Lab ID: MB-PO210-0658	3	Method Blank								Run: EGG-ORTEC_170330A 04/06/17 08:06
Polonium 210		-0.02	pCi/L							U
Polonium 210 precision (±)		0.3	pCi/L							
Polonium 210 MDC		0.7	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 04/18/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5465R
Lab ID: LCS-228-RA226-8452		Laboratory Control Sample								Run: TENNELEC-3_170330F 04/12/17 14:12
Radium 228		9.0	pCi/L	90		80	120			
Lab ID: MB-RA226-8452	3	Method Blank								Run: TENNELEC-3_170330F 04/12/17 14:12
Radium 228		0.5	pCi/L							U
Radium 228 precision (±)		0.9	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17030852-004CMS		Sample Matrix Spike								Run: TENNELEC-3_170330F 04/12/17 14:12
Radium 228		14.4	pCi/L	73		70	130			
Lab ID: C17030852-004CMSD		Sample Matrix Spike Duplicate								Run: TENNELEC-3_170330F 04/12/17 14:12
Radium 228		14.2	pCi/L	71		70	130	1.2	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 03/27/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Batch: R221025
Lab ID: SC 100		Initial Calibration Verification Standard					Run: PHSC_101-C_170321A			03/21/17 07:52
Conductivity @ 25 C	103	umhos/cm		5.0	103	90	110			
Lab ID: MBLK		Method Blank					Run: PHSC_101-C_170321A			03/21/17 08:15
Conductivity @ 25 C	3	umhos/cm		2						
Lab ID: C17030600-001ADUP		Sample Duplicate					Run: PHSC_101-C_170321A			03/21/17 08:21
Conductivity @ 25 C	3140	umhos/cm		5.0				0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 03/27/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS170322C		
Lab ID: MB-25_170322C		Method Blank				Run: BAL-18_170322A		03/22/17 15:58		
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-26_170322C		Laboratory Control Sample				Run: BAL-18_170322A		03/22/17 15:58		
Solids, Total Dissolved TDS @ 180 C		1110	mg/L	11	100	90	110			
Lab ID: C17030631-001ADUP		Sample Duplicate				Run: BAL-18_170322A		03/22/17 15:59		
Solids, Total Dissolved TDS @ 180 C		310	mg/L	10				2.0	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 03/27/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B								Analytical Run: PHSC_101-C_170321A		
Lab ID: pH 6.86		Initial Calibration Verification Standard						03/21/17 07:48		
pH		6.88	s.u.	0.010	100	98	102			
Method: A4500-H B								Batch: R221025		
Lab ID: C17030600-001ADUP		Sample Duplicate						Run: PHSC_101-C_170321A		
pH		7.53	s.u.	0.010				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 03/27/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										Analytical Run: IC2-C_170324A
Lab ID: ICV		Initial Calibration Verification Standard								03/24/17 16:28
Fluoride		5.02	mg/L	0.10	100	90	110			
Method: E300.0										Batch: R221211
Lab ID: ICB		Method Blank								03/24/17 16:43
Fluoride		ND	mg/L	0.009						Run: IC2-C_170324A
Lab ID: LFB		Laboratory Fortified Blank								03/24/17 16:59
Fluoride		4.87	mg/L	0.10	97	90	110			Run: IC2-C_170324A
Lab ID: C17030588-002AMS		Sample Matrix Spike								03/24/17 21:21
Fluoride		27.6	mg/L	0.26	99	80	120			Run: IC2-C_170324A
Lab ID: C17030588-002AMSD		Sample Matrix Spike Duplicate								03/24/17 21:36
Fluoride		27.4	mg/L	0.26	99	80	120	0.6	20	Run: IC2-C_170324A

Qualifiers:

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ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Casper, WY Branch

Client: UR Energy USA Inc

Report Date: 04/04/17

Project: Lost Creek Class V

Work Order: C17030617

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: E200.8								Analytical Run: ICPMS4-C_170328A			
Lab ID: ICV		Initial Calibration Verification Standard								03/28/17 14:18	
Uranium		0.0496	mg/L	0.00030	99	90	110				
Method: E200.8										Batch: 49450	
Lab ID: MB-49450		Method Blank								Run: ICPMS4-C_170328A 03/28/17 14:47	
Uranium		ND	mg/L	2E-05							
Lab ID: LCS3-49450		Laboratory Control Sample								Run: ICPMS4-C_170328A 03/28/17 14:50	
Uranium		0.468	mg/L	0.00030	94	85	115				
Lab ID: C17030617-001CMS3		Sample Matrix Spike								Run: ICPMS4-C_170328A 03/28/17 14:59	
Uranium		0.545	mg/L	0.00030	95	70	130				
Lab ID: C17030617-001CMSD		Sample Matrix Spike Duplicate								Run: ICPMS4-C_170328A 03/28/17 15:01	
Uranium		0.565	mg/L	0.00030	98	70	130	3.5	20		

Qualifiers:

RL - Analyte reporting limit.

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Work Order Receipt Checklist

UR Energy USA Inc

C17030617

Login completed by: Tessa Parke

Date Received: 3/17/2017

Reviewed by: Kasey Vidick

Received by: kmk

Reviewed Date: 3/21/2017

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	3.6°C No Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Samples for dissolved metals and radionuclides were subsampled, filtered and preserved with nitric acid in lab upon receipt to pH <2. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **VR-ENERGY** Project Name, PWS, Permit, Etc.: **LOST CREEK CLASS V**

Report Mail Address (Required): **5800 ENTERPRISE DR SUITE 200 CASPER WY 82409** Sample Origin: **State: _____**

No Hard Copy Email: _____ Invoice Contact & Phone: _____ Purchase Order: _____

Contact Name: **MIKE SATHUR (307) 265-2373 X321** Cell: _____ EPA/State Compliance: Yes No

Sampler: (Please Print) **MS**

Special Report/Formats: DW EDD/EDT (Electronic Data) POTW/WWTP State: _____ Other: _____ LEVEL IV NELAC

Number of Containers: _____ Sample Type: A W S V B O DW Matrix: **W**

Vegetation Bioassay Other: _____ Air Water Soils/Solids: _____ pH/COND. ANALYSIS REQUESTED

DW - Drinking Water DW - Drinking Water PH/COND. ANALYSIS REQUESTED

Standard Turnaround (TAT)	Comments:	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by:
↑	R U S H		hand
SEE ATTACHED			Cooler ID(s): _____
			Receipt Temp: IR 2
			36 °C
			On Ice: Y N
			Custody Seal On Bottle: Y N
			On Cooler: Y N
			Intact: Y N
			Signature Match: Y N
			LABORATORY USE ONLY
			CL7030617

Received by (print): _____ Date/Time: _____ Signature: _____

Received by (print): **M. SATHUR** Date/Time: **3/17/2017 0948** Signature: _____

Received by Laboratory: _____ Date/Time: **3-17-17 9:49 AM** Signature: **R. Kampski**

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

Custody Record MUST be Signed

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly noted on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.



LOST CREEK ISR PROJECT
STANDARD FORM

CLASS V INJECTATE - QUARTERLY SAMPLING

Edifion: 17Feb2017

FORM Number: OPS-063B

Approval: MDG

CLASS V PARAMETER LIST

Analyte/Parameter	Analytical Method	Holding Time
pH (s.u.)	150.1 or SM4500H+B	asap
Specific Conductivity (uS/cm)	120.1	28 days
Specific Gravity	ASTM D1429	28 days
TDS (mg/L)	160.1 or SM2540C	7 days
U-nat (mg/L) (total and diss.)	E200.8	6 months
Pb-210 (pCi/L) (total and diss.)	E900.0 or E909.0	6 months
Po-210 (pCi/L) (total and diss.)	H Po-02-RC or EML HASL-300	6 months
Th-230 (pCi/L) (total and diss.)	E908.0	6 months
Ra226 + 228 (pCi/L) (total and diss.)	E903.0 and RA-05	6 months
Gross Alpha (pCi/L) (total and diss.)	E900.0	6 months
Gross Beta (pCi/L) (total and diss.)	E900.0	6 months
Selenium (mg/L) (diss.)	E200.8	6 months
Arsenic (mg/L) (diss.)	E200.8	6 months
Barium (mg/L) (diss.)	E200.8	6 months
Beryllium (mg/L) (diss.)	E200.8	6 months
Cadmium (mg/L) (diss.)	E200.8	6 months
Chromium (mg/L) (diss.)	E200.8	6 months
Copper (mg/L) (diss.)	E200.8	6 months
Fluoride (mg/L) (diss.)	E200.8	6 months
Lead (mg/L) (diss.)	E200.8	6 months
Mercury (mg/L) (diss.)	E200.8	6 months