



LOST CREEK ISR, LLC

**February 27, 2009 Responses
to the
NRC November 2008 Comments on the
Lost Creek Technical Report**

**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 2.0
Site Characterization**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

Section 2.5 Meteorology, Climatology and Air Quality

Please see Lost Creek ISR, LLC's (LC ISR, LLC's) responses of December 12, 2008 for all the comments on Section 2.5 of the Lost Creek Technical Report.

2.6 Geology and Soils

The analysis of the geology in the proposed license areas is currently insufficient to determine the relationship and isolation of the extraction layer from the overlying and underlying aquifers especially across the fault. Please provide:

- 1. The land surface elevation in mean sea level (msl) on all of the cross sections and the distance in feet between wells.***

Please see the attached cross sections for the land surface elevation and feet between wells (Plates 2.6-1b thru 2.6-1g).

- 2. Maps of the top elevation in msl for the following layers: The FG horizon, the Lost Creek Shale (LCS), the HJ horizon, the Sage Brush Shale (SBS), and the KM horizon. Include the location of the fault on all maps to enable reviewers to assess the change in elevation of these layers across the fault.***

Please see the attached structural contour maps (Plates 2.6-4a thru 2.6-4e).

Comments 3 and 4.

Please see LC ISR, LLC's responses of December 12, 2008.

Comment 5.

Please see LC ISR, LLC's responses of January 16, 2008.

Section 2.7.1 Surface Water

Please see LC ISR, LLC's responses of December 12, 2008 for all the comments on Section 2.7.1 of the Lost Creek Technical Report.

Section 2.7.2 Groundwater Occurrence

Comments 1.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 2.

Please see the comment for item 2.6 number 1.

Comments 3.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 4 through 15.

Please see LC ISR, LLC's responses of December 12, 2008.

Section 2.7.3 Groundwater Quality

Please see LC ISR, LLC's responses of January 16, 2008 for all the comments on Section 2.7.3 of the Lost Creek Technical Report.

2.9 Background Radiological Characteristics

Comments 1 and 2.

Please see LC ISR, LLC's responses of December 12, 2008.

Comments 3 and 4.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 5 and 6.

Please see LC ISR, LLC's responses of December 12, 2008.

Comment 7.

Please see LC ISR, LLC's responses of January 16, 2008.

**List of Information Included with the Responses
to
NRC Comments on Lost Creek TR Section 2.0
February 27, 2009**

For Comment 2.6 #1:

- Edited Plate 2.6-1b Geologic Cross Section B-C
- Edited Plate 2.6-1c Geologic Cross Section C-D
- Edited Plate 2.6-1d Geologic Cross Section D-E
- New Plate 2.6-1e Geologic Cross Section F-F'
- New Plate 2.6-1f Geologic Cross Section G-G'
- New Plate 2.6-1g Geologic Cross Section H-H'

For Comment 2.6 #2:

- New Plate 2.6-4a FG Sand Structural Contour Map
- New Plate 2.6-4b Lost Creek Shale Structural Contour Map
- New Plate 2.6-4c HJ Sand Structural Contour Map
- New Plate 2.6-4d Sagebrush Shale Structural Contour Map
- New Plate 2.6-4e KM Sand Structural Contour Map

**THIS PAGE IS AN
OVERSIZED DRAWING OR
FIGURE,**

**THAT CAN BE VIEWED AT THE RECORD
TITLED:**

**Drawing No.: NRCTR1.0 PLATES2.6-1b 10.11.07
“Plate 2.6-1b,Cross Section B-C
Lost Creek Permit Area.”**

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D-01

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**Drawing No.: NRCTR1.0 PLATE2.6-1c 10.25.07
“PLATE 2.6-1c
Cross Section C-D
Lost Creek Permit Area”**

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“PLATE 2.6-1d
Cross Section D-E
Lost Creek Permit Area.”**

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**Drawing No.: NRCTR1.0 PLATE2.6-1d 10.25.07
“PLATE 2.6-1e
Cross Section F-F’
Lost Creek Permit Area.”**

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“PLATE 2.6-1f

Cross Section G-G’

Lost Creek Permit Area.”

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“PLATE 2.6-1g

Cross Section H-H

Lost Creek Permit Area.”

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“PLATE 2.6-4a
Structural Contour Map
FG sand unit.**

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**Drawing No.: NRCTR1.0 PLATES2.6-4b 02.26.09
“PLATE 2.6-4b Structural Contour Map
Lost Creek shale unit.”**

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“PLATE 2.6-4c

Structural Contour Map

HJ sand unit.”

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“PLATE 2.6-4d,
Structural Contour Map
Sage brush shale unit.”**

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FIGURE,**

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Drawing No.: NRCTR1.0 PLATES2.6-4e 02.26.09

**“Plate 2.6-4e,
Structural Contour Map
KM sand unit.”**

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**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 3.0
Description of the Proposed Facility**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

Section 3.2 Mine Unit Process, Instrumentation and Control

Comments 1 through 3.

Please see Lost Creek ISR, LLC's (LC ISR, LLC's) responses of December 12, 2008.

Comment 4.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 5 through 8.

Please see LC ISR, LLC's responses of December 12, 2008.

Comments 9 and 10.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 11 and 12.

Please see LC ISR, LLC's responses of December 12, 2008.

Comments 13 and 14.

Please see LC ISR, LLC's responses of January 16, 2008.

3.3 Plant Processes, Instrumentation and Control

Please see LC ISR, LLC's responses of December 12, 2008 for all the comments on Section 3.3 of the Lost Creek Technical Report.

**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 4.0
Effluent Control Systems**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

Section 4.0 Effluent Control Systems

See individual sections below.

Section 4.1 Gaseous Emissions and Airborne Particulates

Please see Lost Creek ISR, LLC's (LC ISR, LLC's) responses of December 12, 2008 for all the comments on Section 4.1 of the Lost Creek Technical Report.

Section 4.2 Liquid Wastes

Comment 1.

Please see LC ISR, LLC's responses of January 16, 2008.

Comment 2.

Please see LC ISR, LLC's responses of December 12, 2008.

Comment 3.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 4 through 7.

Please see LC ISR, LLC's responses of December 12, 2008.

Section 4.3 Solid Wastes

Please see LC ISR, LLC's responses of December 12, 2008 for all the comments on Section 4.3 of the Lost Creek Technical Report.

**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 5.0
Description of the Proposed Facility**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

Sections 5.1 and 5.2

Please see Lost Creek ISR, LLC's (LC ISR, LLC's) responses of December 12, 2008 for all the comments on Sections 5.1 and 5.2 of the Lost Creek Technical Report.

Section 5.7.1 Effluent Control Techniques

Comments 1 and 2.

Please see LC ISR, LLC's responses of December 12, 2008.

Comment 3a.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 3b through 3d

Please see LC ISR, LLC's responses of December 12, 2008.

Sections 5.7.2 through 5.7.9

Please see LC ISR, LLC's responses of December 12, 2008 for all the comments on Sections 5.7.2 through 5.7.9 of the Lost Creek Technical Report.

**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 6.0
Groundwater Quality Restoration,
Surface Reclamation, and Facility Decommissioning**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

Section 6.2 Plans and Schedules for Groundwater Quality Restoration

Comments 1 and 2.

Please see Lost Creek ISR, LLC's (LC ISR, LLC's) responses of December 12, 2008.

Comment 3.

Please see LC ISR, LLC's responses of January 16, 2008.

Comment 4.

Please see LC ISR, LLC's responses of December 12, 2008

Comment 5. *An explanation of the timeline for restoration of nine months for sweep, nine months of RO, and one month for homogenization considering the low conductivity of the HJ horizon and the described stacked sand restoration approach.*

The timeline for each stage of restoration is based on a series of factors including: expected flow rate as determined from pumping tests; the expected number of pore volumes required to complete each stage of restoration; the method of well completion; and waste water disposal capacity. In response to the above question, LC ISR wishes to clarify how mining wells will be completed.

Section 3.2.2 of the Technical Report describes one of several potential techniques for mining and subsequently restoring an area with multiple mineralized sands. This appears to be the method described by the reviewer as the "stacked sand" approach. To utilize the stacked sand method, a well is recompleted during both recovery and restoration in order to gain access to the level of interest. While the "stacked sand" approach is valid and may be implemented at the site eventually, LC ISR should have also included a description of the "multiple well sets" method which will also be used at the site.

Most roll front style ore bodies consist of mineralization in several sands within a horizon. The sands may be separated from each other by localized or regional aquitards of varying quality. When these mineralized sands directly overlie each other the "stacked sand approach" may be an economic option. However, the mineralized zones are commonly separated from each other horizontally and vertically. In these cases, the multiple well sets method will typically be used. The multiple well sets method is essentially using separate sets of well patterns to mine each discrete sand. Since each well pattern is dedicated to a specific sand interval, there is no need to recomplete the wells to gain access to additional horizons. This allows the well to work for both mining and restoration of a single specific sand. If there are other ore bearing sands in the area, additional well patterns will be installed for access.

The HJ Horizon is not generally a system of stacked sands that will require wells to be recompleted for production and restoration. In fact, sufficient geologic data has been collected in Mine Unit 1 to support the conclusion that the "multiple well sets" approach will be used exclusively in this area. Most, if not all, patterns at the Lost Creek Project will utilize the multiple well sets approach. This will allow all affected sands to be restored at the same time with no need for recompletions. The bond for Mine Unit 1 restoration is based on the utilization of the multiple well sets method.

Regarding the "*low conductivity of the HJ Horizon*" portion of the above question, please refer to LC ISR's December 12, 2008 response to NRC's RAI Section 6.2 Item 10 for additional information.

Comments 6 and 7.

Please see LC ISR, LLC's responses of December 12, 2008.

Comments 8 and 9.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 10 through 17.

Please see LC ISR, LLC's responses of December 12, 2008.

Section 6.2 (Plans for Reclaiming Disturbed Lands)

Please see LC ISR, LLC's responses of December 12, 2008 for all comments on Section 6.2 (Plans for Reclaiming Disturbed Lands) of the Lost Creek Technical Report.

Section 6.3 Mine Unit Reclamation

Please see LC ISR, LLC's responses of December 12, 2008 for the comment on Section 6.3 of the Lost Creek Technical Report.

Section 6.5 Post-Reclamation and Decommissioning Radiological Surveys

Please see LC ISR, LLC's responses of December 12, 2008 for all comments on Section 6.5 of the Lost Creek Technical Report.

6.8 Financial Assurance

Comment 1.

Please see LC ISR, LLC's responses of January 16, 2008.

Comments 2 through 4.

Please see LC ISR, LLC's responses of December 12, 2008.

Comments 5 and 6.

Please see LC ISR, LLC's responses of January 16, 2008.

**RESPONSES TO NRC COMMENTS
of 11/6/2008 on**

**SECTION 7.0
Environmental Effects**

**in the Technical Report for the
LOST CREEK PROJECT
Wyoming**

7.2 Radiological Effects

Please see LC ISR, LLC's responses of December 12, 2008 for all comments on Section 7.2 of the Lost Creek Technical Report.

Section 7.4 Effects of Accidents

Please see LC ISR, LLC's responses of December 12, 2008 for all comments on Section 7.4 of the Lost Creek Technical Report.