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LOST CREEK ISR, LLC

February 23, 2010

Mrs. Melissa Bautz
State of Wyoming
Department of Environmental Quality
Land Quality Division
510 Meadowview Drive
Lander, WY 82520

Re: Response to 3rd Round Comments on Appendices D-5 and D-6 from December 21, 2009 and 2nd Round Comments from November 20, 2009
TFN 4 6/268

Dear Mrs. Bautz,

Please find behind this cover the complete set of responses to comments provided to Lost Creek ISR, LLC on December 21, 2009 and November 20, 2009.

If you have any questions regarding this submittal please feel free to contact me at the Casper Office.

Sincerely,
Lost Creek ISR, LLC
By: Ur-Energy USA Inc., Manager

John W. Cash
Manager EHS and Regulatory Affairs

Enclosures: Index Sheet
Responses to Comments
Pages for insertion into Application

Cc: Ms. Ramona Christensen, WDEQ-LQD Records Manager, Cheyenne Office
Mrs. Nancy FitzSimmons, Ur-Energy, Littleton Office
Ms. Tanya Oxenberg, PhD, Project Manager, U.S. NRC Rockville Office

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Date: 2/23/10
TFN: 4 6/268

MINE COMPANY: **Lost Creek ISR, LLC** MINE NAME: **Lost Creek ISR Project** PERMIT NO.: **N/A**

Statement: I, **John W. Cash**, an authorized representative of **Lost Creek ISR, LLC** declare that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date JWC 2/23/10

NOTES: 1) Include all revision or change elements and a brief description of or reason for each revision element.
2) List all revision or change elements in sequence by volume number; number index sheets sequentially as needed.

VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
1 of 5 Adj File	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
2 of 5 Apps D1-D5	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
	Pages D5-2 through D5-7	Pages D5-2 - D5-4, D5-4a, D5-5 - D5-7	Updated in response to LQD comments.
	Plate D5-1e	Plate D5-1e	Corrections to legend and fault displacement.
	Plates D5-2a through D5-2d	Plates D5-2a through D5-2d	Updated to show multiple fault locations.
	Plate D5-3	Plate D5-3	Corrected in response to LQD comments.
	Plates AD5-2a through AD5-2c	Plates AD5-2a through AD5-2c	Updated to include permit area boundary and conceptual mine units per LQD request.
3a of 5 App D6 through Attach D6-2b	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
	Figure D6-9	Figure D6-9	Updated in response to LQD comments.
	--	Plate D6-1a	Please apply sticker to cover Well 207 (should be Well 20).

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Date: 2/23/10
TFN: 4 6/268

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VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
3b of 5 Attach D6-3 & D6-4	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
	Notes for Attachment D6-3	Notes for Attachment D6-3	Updated in response to LQD comments.
	Well Logs for LC25M, LC29M, & LC31M	Well Logs for LC25M, LC29M, & LC31M	Updated in response to LQD comments.
4 of 5 Apps D7 - D11; App D References; & App D E&W Roads	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
	Pages D11-i & D11-1 through D11-2	Pages D11-i & D11-1 through D11-3	Updated in response to LQD comments.
	Figure D11-2	Figures D11-2a through D11-2c	Added additional photographs in response to LQD comnents.
	Appendix D References, Pages 11 through 14	Appendix D References, Pages 11 through 14	Updated in response to LQD comnents.

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

Date: 2/23/10
TFN: 4 6/268

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VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
5 of 5 Ops Plan & Rec Plan	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Pages viii through xi, xiii & xiv, xvii & xviii, xxii & xxiii, xxv, & xxviii	Updated General and Detailed Table of Contents.
	Pages OP-i through OP-v & OP-1 through OP-55	Pages OP-i through OP-v & OP-1 through OP-79	Updated Operations Plan Table of Contents. Revised text per LQD comments. While all pages of the plan were resubmitted due to pagination changes, the only changes to the text are those outlined in the responses.
	Figure OP-2c and Figure OP-3c	Figure OP-3c	As part of the October 2009 responses, Figure 2c (Road Design Features) should have been removed from the application and an updated version, renumbered to Figure 3c (Road Design Features), should have been inserted. It was renumbered to keep the first reference to each figure in numerical order in the text. However, the similarity of the old and new numbers has apparently created some confusion. Please double check that there is no longer a Figure 2c. The latest version of Figure OP-3c should have a revision date (in the title block) of 1/4/2010.
	Figure OP-4a	Figure OP-4a	Updated in response to LQD comments.
	Figures OP-6a & OP-6b	Figures OP-6a & OP-6b	Updated in response to LQD comments.
	Figure OP-9	Figures OP-8c & OP-9	Renumbered existing Figure OP-9 to Figure OP-8c and added a new Figure OP-9.
	Figure OP-10a	Figure OP-10a	Replaced in response to LQD comments.
	Figure OP-10b	Figure OP-10b	Replaced in response to LQD comments.
	FIgure OP-10c	--	Removed in conjunction with updated text.
	Table OP-2	Table OP-2	Updated in response to LQD comments.
	Table OP-9	Table OP-9	Existing Table OP-9 moved to Attachment OP-9; new Table OP-9 created.
	Table OP-10	Table OP-10	Updated in response to LQD comments.

INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS

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VOLUME NUMBER	PAGE, MAP OR OTHER PERMIT ENTRY TO BE REMOVED	PAGE, MAP OR OTHER PERMIT ENTRY TO BE ADDED	DESCRIPTION OF CHANGE
5 of 5 Ops Plan & Rec Plan (cont'd)	Plate OP-2	Plate OP-2	Updated in response to LQD comments.
	--	Plate OP-3	Added in response to LQD comments.
	Attachment OP-4	Attachment OP-4	Updated in response to LQD comments.
	Attachment OP-5b	Attachment OP-5b	Updated with new information.
	Attachment OP-6	Attachment OP-6	Revised per LQD comments & UR discussions with WGFD. While all pages of the plan were resubmitted due to pagination changes, the only changes to the text are those outlined in the responses.
	Attachment OP-7 - Except for Inberg-Miller Report (last part of attachment)	Attachment OP-7 - Except for Inberg-Miller Report (last part of attachment)	Updated Reclamation Plan Table of Contents. Revised text per LQD comments. While all pages of the plan were resubmitted due to pagination changes, the only changes to the text are those outlined in the responses.
	Attachment OP-8	Attachment OP-8	Updated in response to LQD comments.
	--	Attachment OP-9	Added in response to LQD comments.
	--	Attachment OP-10	Added in response to LQD comments.
	Pages RP-i through RP-iii & RP-1 through RP-27	Pages RP-i through RP-iii & RP-1 through RP-28	Added in response to LQD comments.
	Table RP-1	Tables RP-1a & RP-1b	Added Table RP-1a to address LQD comments.
	Table RP-3	Table RP-3	Updated in response to BLM letter..
	Table RP-4	Table RP-4	Updated in response to LQD comments.
	Table RP-5	Table RP-5	Updated in response to LQD comments.

RESPONSES TO WDEQ/LQD COMMENTS
of August 2008 and January 2009
and
NEW INFORMATION

for the
LOST CREEK PROJECT
Wyoming

February 2010

The responses are organized as follows:

If a comment has been resolved, that comment is no longer included; or

If a comment has not been resolved, then the complete series of comment and response text is included. The initial LQD comment is italicized, and the most recent LQD comment is in bold font.

This document combines two series of comments. The first began in August 2008 and focused on Appendices D5 and D6, and the second began in January 2009 and covered all of the permit application. The comments are separated first by permit section and then chronologically (i.e., August 2008 comments and then January 2009 comments).

ADJUDICATION FILE

JANUARY 2009 LQD COMMENTS

1) LQD (1/09) - *The Appendix E map (Plate E-1) must show all lands to be affected by the operation, including all proposed or potential well fields. The permit boundary should be reflective of the extent of proposed mining. The permit area should encompass all lands that are proposed to be affected and some reasonable buffer around the affected lands. Conversely, if an area is not going to be affected by the proposed operation then it shouldn't be in the permit area. Based on Figure OP-2a, there are large portions of the permit area (entire sections or half sections) where no proposed operations are shown. Unless there are reserves that are proposed to be mined in these areas, then these lands should not be included in the permit area. The "additional resources known to exist within the permit area", mentioned on page OP-6, must be shown in some fashion order to justify the size of the permit area. (**MM**)*

   LQD (4/09) - Regulatory citations provided in WDEQ-LQD's letter of April 1, 2009 to LC ISR, LLC: W.S. § 35-11-406(b)(v) and WDEQ-LQD Rules and Regulations Chapter 2, Sec. 1(c).

   LC ISR, LLC (10/09) - The size of the Permit Area was based on a number of factors, in particular: the necessary spacing for the deep disposal wells; potential development; and practical land use considerations.

   With respect to the deep wells, five wells are currently planned. To accommodate regulatory requirements and meet the necessary injection criteria, the wells are widely spaced and located in Sections 16, 18, and 19 of Township 25 North, Range 92 West and Sections 13 and 25 in Township 25 North, Range 93 West. Plate OP-1 has been updated to show the locations of the wells.

   With respect to potential development, LC ISR, LLC is interested in potential exploration and production targets in areas near (or vertical to) the proposed mine units. Rather than 'piecemeal' the baseline data for these areas, LC ISR, LLC considered it more effective to cover a larger area at one time. In addition, this approach provides more data for these areas than would be obtained for a Drilling Notification.

   With respect to practical land use considerations, the Permit Area boundaries are in some cases designed to coincide with 'claim block' or lease boundaries. These boundaries may extend outside areas of interest for exploration or production, but for easier administration, they were included in the Permit Area.

LQD (11/09) - Response not acceptable. Comment stands as written. (MM)

LC ISR, LLC (2/10) - WDEQ-LQD referenced a statute and regulation in April 2009 as the basis for this comment (W.S. § 35-11-406(b)(v) and WDEQ-LQD Rules and Regulations Chapter 2, Sec. 1(c)). However, both the statute and regulation relate to map contents; neither relate to restriction of the size of a permit area. For a similar comment (Comment V5, OP#7, WDEQ-LQD referenced W.S. §§ 35-11-406(a)(vi)(C) and 103(e)(xvi) and LQD Permit-to-Mine Form 1. The first citation states the number of acres, including "affected acres", needs to be identified in the permit application, and the second citation is the number of affected acres. However, neither indicate a restriction in the size of the permit area. A size restriction was also not found on Form 1-UIC.

LCI ISR, LLC selected the size of the Lost Creek Permit Area for the reasons stated in the October 2009 response. Additional information related to those reasons is provided below. As also outlined below, WDEQ-LQD did not object to the size of the Permit Area before January 2009. LCI ISR, LLC believes that the current size of the Lost Creek Permit Area is reasonable for the proposed operations. LCI ISR, LLC also believes that the ratio of the affected area to the proposed permit area for the Lost Creek Project is comparable to, or even less than, the ratio for most large mines in the State of Wyoming.

Meetings with WDEQ. LCI ISR, LLC personnel met with WDEQ-LQD staff on numerous occasions at the beginning of the permitting process (starting in 2006) and showed maps depicting the proposed Lost Creek Permit Area. A significant amount of effort and cost has been put into completing baseline characterization of the entire Permit Area as presented to WDEQ-LQD at the beginning of the process. It would seem that the appropriate time for WDEQ-LQD to limit the size of the Permit Area would have been at the beginning of the process. For example, there was no concern noted about the size of the Permit Area relative to the mine units in the Completeness Comments of April 2008. Further to this point, WDEQ-LQD stated in an August 26, 2008 WDEQ-LQD memorandum from Amy Boyle to Melissa Bautz, which was subsequently sent to LC ISR, LLC states that "...additional groundwater monitoring wells will need to be installed to better define the permit area, and the potentially impacted aquifers." In response to this comment, LCI ISR, LLC installed the additional wells and collected baseline water quality data. It is disconcerting that WDEQ-LQD is now stating that the areas of these baseline wells should be removed from the Permit Area because they will not be affected by operations.

UIC Class I Wells. Sections 16 and 25 were included within the Permit Boundary, in part, because of the technical requirement to spread out UIC Class I wells so the pressure wave generated by each well does not interfere with the operation of adjacent wells. By spreading the wells out sufficiently, they will operate more efficiently. Also, regulations require that each UIC Class I well have at least a ¼-mile area of review. The Permit Area allows for spacing of the wells and keeping the ¼-mile area of review within the Permit Area.

Extent of Mineralization. LCI ISR, LLC wishes to reiterate that mineralization within the HJ Horizon is widespread throughout the Permit Area and in fact is present in all complete sections. LCI ISR, LLC believes future exploration work will demonstrate that additional portions of the mineralization will be economic. However, this geologic data is confidential and is still being evaluated and will therefore not be presented in a public document. LCI ISR, LLC is willing to discuss these areas with WDEQ-LQD on a confidential basis. As noted in the October 2009 response, the current Permit Area reduces the 'piecemeal' collection of baseline data. However, LC ISR, LLC realizes that approval of the existing permit application is not *a priori* approval of mine units other than those already proposed. Should additional exploration work indicate economic mineralization, WDEQ-LQD review and approval of a permit revision would be required before mining could occur.

APPENDIX D-5 (GEOLOGY)

AUGUST 2008 LQD COMMENTS

4) *LQD (8/08) - Plates D5-1 a - D5-1 e. These plates provide one generalized and several detailed geologic cross sections down the centerline of the ore body, and across the centerline ofthe ore body. In addition, Figure D5-2a provides a very generalized geologic cross section across the northern portion of the permit area. LQD Non-Coal Rules, Chapter 11, Section 3(a)(viii) requires cross sections that show geologic features within the entire pennit area, and how they relate to the production zone. Extending cross sections F, G, and H to the boundaries of the permit area with any available drill hole data, will help to provide this information.*

LC ISR, LLC (4/09) - The cross sections have been updated with the information from new borings and wells completed in 2008. As noted on the Index Sheet for the changes to Appendix D-5, Plates D5-1b through D5-1e have been replaced, and two new plates (Plates D5-1f and D5-1g) have been added. The references in the text to these plates have also been updated.

a) LQD (6/09) - The northern (left) edge of cross section F-F', presented on Plate D5-1e appears to have 880 feet of extrapolation. What boring provides data for the northern extent of this cross section?

LC ISR, LLC (11/09) - An explanation of the projection and extrapolation of the geologic data from the borings to north-south and east-west planes has been added to Section D5.2 (Site Geology).

(LQD 12/09) - Given the variability of stratigraphy and faulting in the area, the projection of the cross section an additional 880 feet to the northern permit boundary could be misrepresentative. Although we have requested that cross sections represent the entire permit area, if there is no data available there can not be any confidence in the information presented. Please revise Plate D5-1 e to eliminate this extrapolation, and revise Section D5.2 to drop the statement that "endpoints of each cross section are projected to the permit boundaries".

LC ISR, LLC (2/10) - Extrapolation of the stratigraphy on the cross sections to the property boundaries is based on data from historic exploration drill holes located just outside of the permit boundary. These holes have not been identified on drill hole maps or cross sections as they are outside of the permit boundary. The extrapoloation was

removed from Plate D5-1e. Pursuant to discussions in the January 11, 2010 meeting of WDEQ-LQD and LC ISR, LLC personnel, the information on the drill holes used for the extrapolations for the plates has been added to the text at the beginning of Section D5.2.

b) LQD (6/09) - The piezometric surfaces are indicated for the DE, LFG, HJ and UKM aquifers, though it is not clear if there are any monitoring wells on the cross sections from which the water tables were derived. Please designate any monitoring wells on the cross section, and indicate their screened intervals and water levels with date.

LC ISR, LLC (11/09) - A reference to the cross-sections and an explanation of how the potentiometric surfaces were projected onto the cross-sections has been added to D6.5.2.2 (Potentiometric Surface, Groundwater Flow Direction and Hydraulic Gradient).

(LQD 12/09) - As stated previously, the cross section should indicate where specific groundwater elevation data is available from monitoring wells, and ifthe data points are close enough it can be extrapolated, otherwise projecting a potentiometric surface across an entire cross section could be misrepresentative. For example, on Plate D5-1e, cross section F-F', there are two clusters of monitoring wells that fall on the cross section yet are not indicated. Wells MB-01, MB-02, MB-03A, and MB04 lay in a cluster approximately 312 feet south of the North Fault. There is no groundwater data north of the fault yet the cross section assumes that the water level across the fault is consistent. Similarly, there is a well cluster (LC21M, LC22M, LC23M, and LC30M approximately 250 feet south of the Lost Creek Fault (Subsidiary) yet these wells are also not indicated on the cross section. The potentiometric surface is projected on the cross section, an additional 1.5+ miles to the south, with no data available. Granted, the surfaces appear as dashed lines or implied, however, please add the known groundwater elevations on the cross section for each available monitoring well, and indicate the screened interval and the date for the water elevation. Extrapolation should be limited to those areas on the cross sections where there is enough data available. Please also revise Section D5.2 by deleting the statement that "Depiction ofthese *(potentiometric)* surfaces on the cross sections were generated by tracking the intersection of the plane of the cross section profile with potentiometric contours plotted for the given horizons ... ".

LC ISR, LLC (2/10) - The original focus of the cross sections was to provide information on the stratigraphy in the Permit Area, so no monitor wells were included on the cross-sections. Illustration of water levels on the cross sections was requested by NRC (*see* LC ISR, LLC's December 2008 Response to NRC's November 2008 Comment #2 on Section 2.7.2 of the Technical Report) and subsequently included in documents submitted to WDEQ-LQD for consistency. The location of monitor wells with relation to cross sections is shown on Plate D5-3, 'General Location Map – Geology'. The data requested to be illustrated from adjacent monitor wells [water elevations, screened intervals,

measurement dates] is available in tables, appendices and Completion Logs elsewhere in the application therefore LC ISR, LLC does not believe that adding this specific information onto the cross sections is necessary.

Additionally, as with the potentiometric surface contour maps (Figures D6-11e through 11h), the potentiometric surfaces which are illustrated on the cross sections are generated from raw data collected from the monitor wells. The method of projecting this data onto the cross sections is explained in the statement: " Depiction of these (potentiometric) surfaces on the cross sections were generated by tracking the intersection of the plane of the cross section profile with the potentiometric contours plotted for the given horizons..." Where monitor wells are in close proximity to the plane of a cross section, this projection can be considered reasonably accurate. In regions of sparse data, the projection of the potentiometric surface can be considered more interpretive. In either case, the potentiometric surfaces illustrated on the cross sections can be considered as valid and accurate as those depicted on the potentiometic surface contour maps.

The DEQ comment stating that "There is no groundwater data north of the northern fault, yet the cross section [F-F'] assumes that the water level is consistent." makes a valid point. Therefore, Cross-Section F-F' has been revised by removing the potentiometric surfaces as shown north of the fault.

c) LQD (6/09) - Additional faults are indicated on the north/south trending cross sections. Please add these faults to the map key, as well as within the discussion of Section DS.2.2 the permit document. In addition, these faults should be indicated on all maps where the Lost Creek Fault is included, if they fall within the scale of the map.

LC ISR, LLC (11/09) - The text in Section D5.2.2 (Structure) has been replaced to discuss the newly identified faults, and the location of all the faults are illustrated on a new map as Plate D5-3 (General Location Map - Geology).

(LQD 12/09) - Plate D5-3 has been added and indicates the location of the other known faults in the permit area. The text states that the southern fault's downthrown block is on the north side, yet Plate D5-3 indicates that the downthrown block is to the south. Please correct this deficiency. As requested previously, any map (e.g. Plates D5-2a through D5-2d) which showed the location of the Lost Creek Fault needs to be revised to indicate the updated version of the multiple fault locations within those maps. The permit area template within the map legends will also need to be revised to include the additional fault locations.

LC ISR, LLC (2/10) - Plate D5-3 has been revised to show that the downthrown block is on the north side of the "South Fault".

Pursuant to discussions in the February 3, 2010 phone call between Melissa Bautz (WDEQ-LQD) and John Cash (LC ISR, LLC), only Plates D5-2a through D5-2d have been revised to include the multiple fault locations.

e) LQD (6/09) - No cross section has been provided for Section 16, which represents approximately 1/6 of the permit area. What is known about this section? Do the stratigraphic units extend to this part of the permit area? Are there any faults? Is there any potential mineral reserve? If not, why is this section included within the permit area? An additional cross section, which includes Section 16 should be added.

LC ISR, LLC (11/09) - As noted in the October 2009 Response to Comment V1, #1, the selection of the permit boundary is dependent on factors (e.g., claim block boundaries) in addition to mineral location. LC ISR, LLC's current knowledge of the mineral trend indicates that it extends into Section 16; but there are only a few, widely-spaced drill holes in this section (approximately 20 in total) which are not sufficient to allow for detailed evaluation. Because of the limited data and because no mine units are currently planned in Section 16, cross-sections were not prepared for this section.

(LQD 12/09) - No cross section was provided yet the response indicates that there are 20 widely spaced drill holes in this section. The 20 exploration holes from Section 16 should be sufficient to provide some geologic information for this part of the permit area. Please provide a baseline cross section for Section 16.

LC ISR, LLC (2/10) - Pursuant to discussions in the January 11, 2010 meeting of WDEQ-LQD and LC ISR, LLC personnel, paragraphs have been added at the end of Sections D5.2.1 (Stratigraphy) and 5.2.2 (Stucture) to provide information on the geology of Section 16. A cross section of section 16 was not provided because of the paucity of drill data in that section and because because no mining of that section is currently planned.

12) *LQD (8/08) - Plate D5-2a, and D5-2c Isopach Maps ofthe Lost Creek Shale and Sagebrush Shale(respectively). For areas where the isopachs indicate the unit thickness is less than ten feet thick, please indicate at specific drill hole sites, what the thickness is at that location, so thereviewer knows how much less than ten feet in thickness the aquitard is at a given location.*

LC ISR, LLC (4/09) - Isopach maps have been updated with the information from new borings and wells completed in 2008, and the actual unit thicknesses have been added where the thicknesses are less than 10 feet.

LQD (6/09) - There are a number of borings within the <10 ft. zone where no data is provided, in addition, the footage and the drill hole location overlap in many places on Plate D5-2c making them un-readable. Also, a statement should be added to Section D5.2.1 Stratigraphy, regarding the minimum known thickness of each of these aquitards. Please revise accordingly.

LC ISR, LLC (11/09) - Plate D5-2c has been revised to be more legible. The thicknesses of the Lost Creek and Sage Brush Shales are discussed in Section D5.2.1 as revised in response to the previous comment.

(LQD 12/09) - Plate D5-2c was revised to address the overlap issue, and additional thickness data was added to the map. Section D5.2.1 Stratigraphy now states that "the thinnest observed occurrences of these units are approximately five feet thick." The lowest number on the map is '5', yet the statement leads the reader to question ifthere are areas where the aquitard is less than five feet, and perhaps were rounded up to 5 feet. Please provide the smallest known thickness of the aquitard in tenths of a foot (e.g. 4.7 ft.) in the statement in Section D5.2.1.

LC ISR, LLC (2/10) - The reported thickness of all lithologies, including the aquitard in question, is based on the Geologists' interpretation of the down-hole geophysical logs (SP and resistivity and. to a lesser extent. gamma). The logs allow the Geologists to pick intervals to within 6 inches; plus or minus 6 inches. It is impossible to interpret the thickness of a lithologic unit to within one tenth of a foot as suggested in the WDEQ-LQD comment simply because some zones are transitional in nature and because the sensors in the logging tool have limitations. The thinnest area of the aquitard could be as thin as 4.5 feet or as thick as 5.5 feet. The text at the end of the 4th paragraph in Section D5.2.1 has been revised by adding a statement discussing the accuracy of the measurements.

13) *LQD (8/08) - Section D5.2.4 Historic Uranium Exploration Activities, and Plate AD5-2a-c Location Map of Historical Drill Holes. It is stated that there are at least 560 exploration holes in the area, and Attachment D5-2 lists the holes northing and easting, year drilled and ID. Please also include depth of hole and discuss further the efforts made to locate the old drill holes, and whether or not it was confirmed that the hole had been properly abandoned. Uthe hole was abandoned through recent efforts, the plugging procedure and date should be indicated as well. The map should be updated to indicate the status of each drill hole location. Once operations commence, it is important that these historic drill holes do not provide a pathway for production fluids to migrate to underlying or overlying aquifers.*

LC ISR, LLC (4/09) - Section D5.2.4 has been renamed (Subsurface Exploration Activities) because more than just historic uranium exploration is discussed in the section. It has also been divided into two subsections, the first of which describes uranium exploration and the second of which summarizes other exploration. The discussion in the first subsection has

also been expanded to include: the results of efforts to obtain information about the known historic holes, including hole depths; descriptions of re-abandonment efforts that have been needed to date; and steps that will be taken to identify any improperly abandoned drill holes in the mine units. Table D5-2 (Abandonment Information for Historic Exploration Holes) and Attachment D5-3 (Communication with WDEQ LQD related to Drill Hole Abandonment) have been also been added.

LQD (6/09) - Attachment D5-3 and the updating of Table D5-2 are welcome additions to the permit document.

However, essential to LQD's review is an understanding of the location of historic drill holes and their status as related to the location of proposed mine units. For this reason, Plates ADS-2a, AD5-2b, and AD5-2c (in Attachment D5-2) must include the location of the proposed mine units, a topographic layer, and the status of each known hole via a legend.

The efforts made by Tg in the early 80's were extensive, yet many holes were unlocatable, many holes had caps which had fallen downhole, and were therefore not probed, and the majority of holes probed had standing water. Yet, only those holes found with 200 ft or more of water above the mud seal, were re-sealed.

The information in Attachment D5-3 presented for the Tg NOV illustrates the significance of the problem created by historic drill holes. Due to the site conditions the majority of the drill holes were not sealed to the surface, and were also not sealed to a point above the first aquifer.

Texasgulf drill hole summary in response to LQD NOV

	No. of holes inspected	No. of holes recapped	No. of holes w/ standing water	No. of dry holes	Holes resealed	No . of holes unable to locate	Holes with cap slipped down hole, unable to probe
1982	79	79	79				
1983	269	111		21	10	noted but not tallied	?
1984	427	371	213	72	27	56 (13%)	86 (20%)
TOTAL	775	561 (72%)					

• 775 Total holes exceeds total Tg holes reported in Table D5.2. possibly due to holes outside the Lost Creek proposed permit area.

Dry holes could indicate that hole was properly abandoned above uppermost aquifer. or hole had caved or bridged

As previously stated, the Division will require that these holes be located and sealed to the surface, as per ASTM D-5299-99 standards, in order to ensure that these historic holes do not compromise the confinement of the production zone during mining.

In order to clarify which historic holes are located in or near which mine units, a column should be added to Table D5-2 that indicates which proposed mine unit (if any) each historic drill hole is located in. This approach would eliminate confusion and provide clarity to the efforts LC has made in addressing historic drill holes at the site. Attachment D5-2 Plates AD5-2a, 2b, and 2c should be cross referenced to the Table, and need to include topography, the mine unit boundaries, and the proposed permit boundary.

LC ISR, LLC (11/09) - Each mine unit data package will contain a map showing the location of all historic drill holes located within the respective mine unit patterns. Additional discussion of abandoned drill holes was included in LC ISR, LLC's October 2009 Response to Comment V5, OP #84.

Plates AD5-2a, 2b, and 2c in Attachment D5-2 have been revised to show topography, conceptual mine unit boundaries and the permit boundary.

(LQD 12/09) - Plates AD5-2a, 2b and 2c were revised and now include the topography and mine permit boundary. Please also include the conceptual mine unit boundaries and include the permit boundary and mine unit boundary on the map's legends. The individual mine unit data packages must include the historic drill holes information relative to that mine unit.

LC ISR, LLC (2/10) - Plates AD5-2a, 2b and 2c have been revised to include the permit boundary and conceptual mine units as requested.

NEW INFORMATION

A) Corrections have been made to the legend and the fault displacement on Plate D5-1e.

APPENDIX D-6 (HYDROLOGY)

AUGUST 2008 LQD COMMENTS

14) *LQD (8/08) - Section D-6. Detailed stratigraphic and well completion logs should be provided within the permit document for all monitoring wells. It is preferable if this information can be compiled on one log form. Notation of each horizon within the stratigraphic column would also be helpful. LQD Guideline 8, Appendix 5 describes the information to be included for each well.*

LC ISR, LLC (4/09) - A new attachment has been added with the well completion logs for the permit area monitoring wells. The existing Attachment D6-3 (Groundwater Quality Laboratory Results) has been renumbered to Attachment D6-4, and the title page and CD changed. Attachment D6-3 is now titled Well Completion Logs. A list of the wells for which logs are included in the attachment is at the beginning of the attachment.

Cross references to the new attachment have been added at the end of Section D6.2.2 and in Attachment D6-2a (Comment #44). Because of the size of the new Attachment D6-3 (Well Completion Logs), Volume 3 of the application has been separated into Volume 3a, which contains all of Appendix D6 through Attachment D6-2b, and Volume 3b, which contains Attachments D6-3 and D6-4.

LQD (6/09) - The following comments have been generated from a review of the well logs:

b) LQD (6/09) - Figure D6-9, Lost Creek Monitoring Wells, should include all monitoring well locations. There are 85 monitoring wells included in Attachment D6-3, and listed on Table D6-5, Monitoring Well Data, yet Figure D6-9 only has 46 monitoring wells shown. All 85 monitoring wells should be shown. Figure D6-9 should also be at a scale so that all well locations are clearly defined.

LC ISR, LLC (11/09) - The new Plate D5-3 shows the locations of all 85 monitoring wells, and the last paragraph in Section D6.2.2 has been revised to include a cross-reference to Plate D5-3. The M-25-92 series of wells are not included on that plate. Due to the proximity of some of the wells, the locations had to be shown on a plate rather than a figure for legibility. Rather than remove Figure D6-9, the last paragraph in Section D6.2.2 has also been updated to indicate that Figure D6-9 shows the locations of historic M-25-92 wells, i.e., the Conoco (or Texasgulf) wells mentioned in Section D6.4.2.1, and the existing monitor wells that were used for collection of the baseline groundwater quality data and in the LC16M and LC19M aquifer tests. Figure D6-9 has been updated

to show five additional wells (HJMP-113, HJMP-114, UKMO-101, UKMO-102, and UKMO-103) which were used in the LC16M and LC19M pump tests.

(LQD 12/09) - There still needs to be additional clarity. Plate D5-3 is titled 'General Location Map - Geology' yet indicates the locations of all existing monitoring wells. It also shows exploration drill holes yet from the legend, it is not clear which exploration holes are being represented. Please note on the legend, "Exploration drill holes (pre *YYYY)*" Figure D6-9 is titled "Location Map, Lost Creek Monitor Wells", yet includes historic Tg monitor wells which are not designated as abandoned. It also does not include the additional wells installed in 2008. Figure D6-9 should be retitled, since the current monitoring wells are on Plate D5-3, and there should be some indication in the legend that the Tg wells no longer exist.

LC ISR, LLC (2/10) - The legend on Plate D5-3, which shows geologic features such as mineralization and structure, has been revised to clarify the age of the exploration holes. The monitor wells were left on the map simply as reference points for reviewers and because they, like exploration holes, served as data points to characterize the geology.

Figure D6-9 was revised to satisfy the comment during the last round of responses but failed to make it into the document. The legend has been revised to: indicate which wells were the Conoco (TexasGulf) wells, which have been abandoned; clarify which Lost Creek wells are on the map; and include a cross-reference to Plate D5-3, which shows the Lost Creek Project wells. The title of the figure has been changed to 'Early Lost Creek Monitor Wells.

c) LQD (6/09) - Figure D6-9 includes 1982 monitoring wells with the designation M-25-92-181S. These wells were abandoned by Tg in 1985, and should not be included in a Figure titled 'Lost Creek Monitoring Wells'. (LQD 12/09) If the Tg wells are to be included on Figure D6-9 then the legend should indicate that they are historic well locations and no longer viable monitoring points. If someone was currently reviewing the Figure title Lost Creek Monitoring Wells, they would be led to assume that all of these wells indicated are existing wells.

LC ISR, LLC (11/09) - Please see response to the above comment.

(LQD 12/09) - If the Tg wells are to be included on Figure D6-9 then the legend should indicate that they are historic well locations and no longer viable monitoring points. If someone was currently reviewing the Figure title Lost Creek Monitoring Wells, they would be led to assume that all of these wells indicated are existing wells.

LC ISR, LLC (2/10) - Please see response to the above comment.

e) LQD (6/09) - A number of wells indicate no well development efforts, yet there is water in the hole. (e.g. LC29M, LC31M, LC21M, LC25M, LC27M...) Chapter 11, Section 6(f) requires that the wells be developed and LQD Guideline 8, Appendix 5 discusses efficiency testing during well development. Development of these wells should be documented and submitted as part of the application.

LC ISR, LLC (11/09) - All monitor wells are airlifted with the drill rig after placement of the screen. Before sampling, each monitor well is swabbed to provide further development. Finally, wells are purged of at least three casing volume prior to collecting a baseline sample. This information has been added to the notes at the beginning of Attachment D6-3.

(LQD 12/09) - LC indicates that all wells were airlifted after placement of the screen, swabbed prior to sampling, and three casing volumes removed prior to sampling. If this is the case, why do some of the well logs indicate that there was no development done on the well? Well development needs to be documented for all monitoring wells.

LC ISR, LLC (2/10) - The wells in question were drilled in 2006 when field records were limited. Completion Logs in which the "WELL STIMULATION" method is shown as "N/A" represent cases where no well-specific information (e.g., the amount of water produced) was available at the time the Completion Logs were created. A subsequent search has uncovered field notes with some additional information, which has been included in the "Notes on the Well Completion Logs in Attachment D6-3". The Completion Logs for those wells for which additional information has been found (Wells LC25M, LC29M and LC31M) have also been updated.

f) LQD (6/09) - If airlifting produced poor yields, were any additional efforts made to develop these wells?

LC ISR, LLC (11/09) - Please see response to previous comment.

(LQD 12/09) - LC refers to the fact that all wells were airlifted. Yet, this response does not answer the question of whether any additional efforts were made to develop the wells in those cases where there was poor yield (HJT-106, MB-O1, MB-07, MB-I0, I-IJMO-I09, HJMO-II0, I-IJMO-ll, MB-03B, LC23M. UKMP102, UKMU-I03).

LC ISR, LLC (2/10) - The "Notes on the Well Completion Logs in Attachment D6-3" has been edited with information as to why no additional well development efforts were made for wells with poor yield.

i) LQD (6/09) - There are many wells where there is additional footage between the base of the well screen and the bottom of the hole, yet it is not indicated on the well diagram (e.g. LC29M, MBOl, MB07, MBIO, HJMO-I05, HJMO-I06, HJMO-112, HJMO-113, MB-02, MB-05, MB-08, HJMP-IOl, HJMP-I02, HJMP-I09, HJT-I02, MB-06, MB-09, HJMU-I05, HJMU-113, HJMU-114, UKMP-I02, UKMP-I03, MB-04, UKMU-IOl, UKMU-I03). Please indicate on the schematic if the boring caved into this level, if there is a sump below the screen, or if it is an open hole.

LC ISR, LLC (11/09) - Notes on the well completion logs have been added at the beginning of Attachment D6-3.

(LQD 12/09) - LC added a page at the beginning of Attachment D6-3 to explain some of the drill log discrepancies. The page is titled "Notes on the Well Completion Logs in Attachment D6-3".. In the first paragraph, please explain in further detail the penetration into the EF shale at wells MB-1 and MB-7. Specifically, how far into the shale did each drill hole penetrate, and what is the approximate thickness of the shale at the location.

LC ISR, LLC (2/10) - The page titled "Notes on the Well Completion Logs in Attachment D6-3" has been updated with the requested information.

j) LQD (6/09) - There are a number of holes where the bottom of the well screen (or under reamed interval) is deeper than the total depth recorded for the drill hole. (e.g. HJMP-I05, UKMO-IOl, UKMO-I03, HJMU-IOl, HJMU-I04, HJMU107, UKMP-IOl). Please correct the well logs accordingly. LQD (12/09) This discrepancy is explained in the new page titled "Note on the Well Completion Logs in Attachment D6-3". In the second paragraph, for those wells with a discrepancy with Total Depth, please provide details (a Table) indicating the true Total Depth vs. the Total Depth indicated on their well log.

LC ISR, LLC (11/09) - Notes on the well completion logs have been added at the beginning of Attachment D6-3.

LQD (12/09) - This discrepancy is explained in the new page titled "Note on the Well Completion Logs in Attachment D6-3". In the second paragraph, for those wells with a discrepancy with Total Depth, please provide details (a Table) indicating the true Total Depth vs. the Total Depth indicated on their well log.

LC ISR, LLC (2/10) - A table with the depth information has been added to the "Note on the Well Completion Logs in Attachment D6-3".

16) *LQD (8/08) - Figure D6-27a, Piper Diagram - Average Water Quality at Individual Monitoring Wells. The legend designates which well is represented by which symbol, and the wells are grouped by color, yet it does not indicate which horizon the wells are monitoring. Please add the horizon noted by each color. (The colors are not consistent with which formation they represent, i.e. other Figures use green to indicate the DE horizon wells, whereas the Piper diagrams use red).*

LC ISR, LLC (4/09) - The figure has been revised to clearly indicate which horizon each well is monitoring.

LQD (6/09) - There are 27 baseline monitoring wells, yet the two Piper Diagrams are only based on data from 17 wells. Please add the additional baseline information to the diagram, or provide an explanation as to why certain wells were not included.

LC ISR, LLC (11/09) - Data from the MB wells is still being collected so the Piper Diagrams have not been updated. The first round of sampling results from the MB wells have been received and inserted into Table D6-15a. Once all of the data is received the Piper Diagrams will be updated. Please note that the order of the entries in Table D6-15a has also been updated, which is intended to make review and reference easier. Before, the table was grouped first by type of parameter (e.g., major cations and anions, radionuclides, and so forth) and then by completion interval. The table is now grouped by completion interval and then by type of parameter.

(LQD 12/09) - The diagrams will be updated once the data becomes available. This comment will remain open until that time. In addition, Comments 35, 36, and 37 have been dropped and are noted here. Table D6-15a and Section D6.4.2.2 will also need to be updated when the 2009 groundwater monitoring data is finalized and incorporated into the permit.

LC ISR, LLC (2/10) - The diagrams, tables, and text will be updated once the data is available.

24) *LQD (8/08) - Section D6.3, Table D6-12a. There are numerous Kennecott, Tg and BLM/Tg groundwater permits within or adjacent to the permit area. The status is listed as adjudicated, abandoned, or cancelled. Further discussion regarding the status of these permits needs to be included in Section D6.3 and Table D6-12a. Were wells drilled under all of the permits listed? Are there abandonment records for any of the wells? Has any effort been made to locate these wells and verify their status? There needs to be assurances that these wells will not act as a potential conduit for the movement of production fluids between aquifers.*

LC ISR, LLC (4/09) - In response to this comment, Tables D6-12a and D6-12b (and the associated Plates D6-1a and D6-1b) were modified for clarity, as outlined below. However, the responses to Comments #13 and #30 address the concerns about efforts to locate drill holes and wells and the potential for wells outside the Permit Area to act as conduits for movement of production fluid, respectively.

The formatting of Tables D6-12a and D6-12b was modified to distinguish between a well and a point of use, and Plates D6-1a and D6-1b were modified accordingly. All of the wells have at least one associated point of use. According to W.S. §41-3-930(a), "Any person who intends to acquire the right to beneficial use of any underground water in the state of Wyoming, shall," . . . "file with the state engineer an application for a permit to make the appropriation" . . . "The application shall contain" . . . "the location by legal subdivision of the proposed well or other means of obtaining the underground water" and "the location by legal subdivision of the area or point of use". Therefore, WSEO maintains records of permitted wells with associated point(s) of use. The tables present wells *and* the points of use associated with the wells, which may be difficult to observe with the previous formatting. During this modification, it was notable that certain points of use were within the area of interest but their associated wells were outside of that area. To accommodate any questions that may arise, these wells *not* within the area of interest were included in the table and highlighted to differentiate them from the wells within that area.

b) LQD (6/09) - Well ID 21 is shown on Plate D6-1a, but is not listed in Table D6-12a.

LC ISR, LLC (11/09) - The Well ID 20 was incorrectly labeled Well ID 21 on Plate D6-1a, which has been corrected.

(LQD 12/09) - Well ID 20 was incorrectly labeled as Well ID 21. The correction was made to the map. However, the map now reads as Well "207" Please correct the map to read as Well 20.

LC ISR, LLC (2/10) - Rather than reprinting the entire plate, a sticker with the well number '20' has been provided to put over the well number '207', which is just to the northwest of the Permit Area.

47) ***LQD (12/09) - Section D5.2.2 Structure, Paragraph 1. Please change the reference to the Plates to also include Plates D5-1f and D5-1g.***

LC ISR, LLC (2/10) - The reference in the 1st paragraph of Section D5.2.2 has been updated to indicate Plates D5-1a through D5-1g show the cross-sections.

JANUARY 2009 LQD COMMENTS

8) *LQD (1/09) - Please submit the station site information for the thirteen surface water monitoring stations (LC1 through LC13) shown on Figure D6-5 in Appendix D-6. An Excel spreadsheet template for surface water stations will soon be available on the LQD website, http://deq.state.wy.us/lqd/Uranium_Data.htm. A copy of this file is also attached to this memo. In particular, please provide the station type (stream station, reservoir, stockpond, etc.), stream or waterbody name, and the location coordinates for each station. Also please note that a separate spreadsheet (also attached and on the LQD website) can be used to submit surface water flow data if this type of monitoring will occur.* ***(MK)***

LC ISR, LLC (10/09) - The requested surface water information is provided in digital form (Microsoft Excel) on a CD attached to these responses.

LQD (11/09) - Response conditionally acceptable. The Cheyenne Office has not received a copy of the Compact Disc from District II. Once received and reviewed final acceptability will be determined. (MK)

LC ISR, LLC (2/10) - LC ISR, LLC sent a separate copy of the CD to Cheyenne under separate cover on February 1, 2010. (This comment was originally Comment 1 from Mr. Matthew Kunz in a memorandum dated August 8, 2008, which was incorporated by reference in WDEQ-LQD Comments of 1/30/09.)

9) *LQD (1/09) - Please submit the baseline lab water quality data that were collected on April 17, 2007 at seven of the surface water monitoring stations. The lab data are shown in the permit application in Table D6-4 and Attachment D6-1 of Appendix D-6.*

LC ISR, LLC (10/09) - The requested surface water information is provided in digital form (Microsoft Excel) on a CD attached to these responses.

LQD (11/09) - Response conditionally acceptable. The Cheyenne Office has not received a copy of the Compact Disc from District II. Once received and reviewed final acceptability will be determined. (MK)

LC ISR, LLC (2/10) - LC ISR, LLC sent a separate copy of the CD to Cheyenne under separate cover on February 1, 2010. (This comment was originally Comment 2 of those from Mr. Matthew Kunz in a memorandum dated August 8, 2008, which was incorporated by reference in WDEQ-LQD Comments of 1/30/09.)

APPENDIX D-7 (SOILS)

JANUARY 2009 LQD COMMENTS

3) *LQD (1/09) - The soils on lands to be affected must be mapped at an Order 1-2 level.(MM)*

LC ISR, LLC (10/09) - Order 1 soil surveys were conducted in 2008 and 2009 for the Plant site (2008), the deep injection well locations (2009), and Mine Unit One (2008). The results of the surveys for the Plant site and the deep well locations are discussed briefly in Section D7.4 and in more detail in Attachments OP-5a and OP-5b. The results of the survey of Mine Unit One will be included with the mine unit package. As the areas for additional mine units are delineated in more detail, Order 1 surveys will be conducted and the results submitted with the respective mine unit packages.

LQD (11/09) - Response partially acceptable. The soils information for the deep well locations has not yet been provided. Also it does not appear that the deep well location in the SW ¼ of section 25 was surveyed. The survey for mine unit no. 1 has not yet been submitted. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#23.

4) *LQD (1/09) - A map must be presented to show topsoil suitability/stripping depths. (MM)*

LC ISR, LLC (10/09) - Topsoil suitability/stripping depths are included in Section OP 2.5.

LQD (11/09) - Response not acceptable. The objective is to have a map that clearly shows the depths of soils that will be salvaged from each site-specific area to be affected. This information is currently not readily available in the permit document. Comment stands as written. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#23.

6) *LQD (1/09) - The volumes of soil to be salvaged and stockpiled from the various major affected areas (plant site, ponds, roads, etc.) should be listed. (MM)*

LC ISR, LLC (10/09) - Please see Section OP 2.5.

LQD (11/09) - Response not acceptable. The objective is to determine the amount of soil that will be salvaged and stockpiled on a site-specific basis. The information presented is very general in nature and does not accurately reflect site-specific soil depths. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#23.

APPENDIX D-11 - WETLANDS

JANUARY 2009 LQD COMMENTS

5) *LQD (1/09) - Section D11-4: From on-site inspections during exploration, etc., I would agree that no wetlands exist within the proposed permit area, however the documentation provided to render this decision is lacking as alluded to in the first three comments. Please re-write this section to better support the supposition that no wetlands exist within the proposed permit area.* ***(BRW)***

LC ISR, LLC (10/09) - As noted in the revised text, hydrology is apparently a limiting factor at one of the three potential wetlands identified under the National Wetlands Inventory. Battle Spring Well No. 4551 may have been the water source supporting another of the potential wetlands, but the well had not been in use for some time prior to the April 2006 field work, so hydrology may have also been a limiting factor at this location. As noted above, the text has been clarified, and photographs added, to provide more information about all three of the potential wetlands.

LQD (11/09) - Response not acceptable. **The reviewer would agree that the site in Section 24 is not a wetland. It is also agreed that the site in Section 21 is not a wetland as the hydrology is artificially sustained through the well. However, specific to Crooked Reservoir, based on the photos provided I would guess that the hydrology criteria is met (reference the text in Comment D11-3) and most likely there is probably some gleying or mottling in the soils, thus meeting soils requirement. Vegetation appears to be the limiting factor in the wetland designation. The only clue to this is the statement at the top of page D11-2 that states "Had wetlands been identified in the field using indicator species...". The reviewer would like some expansion in the text regarding the vegetation present (e.g. a short list of the major species present) because it appears there is more than just Sagebrush and an ocular estimate of the percentage of upland species present to validate that the wetland vegetation criteria were not met. Please revise the text accordingly. (BRW)**

LC ISR, LLC (2/10) - The text has been further revised (and additional pictures have been included) to support the interpretation that Crooked Well Reservoir is not a wetland under the three 1987 ACOE criteria (hydrology, soils, and vegetation).

OPERATIONS PLAN

JANUARY 2009 LQD COMMENTS

4) *LQD (1/09) - Section OP 1.1, Site Facilities Layout: should include a detailed facilities site plan map presented on a topographic base at a scale of 1"=100' with a 2' contour interval. All facilities and structures should be shown, including lay-down yards, parking areas, site drainage control features, ponds and topsoil stockpiles. (MM)*

LC ISR, LLC (10/09) - Plate OP-2, which shows the locations of the facilities within the Plant, has been added to the permit.

LQD (11/09) - Response partially acceptable. Plate OP-2, Plant and Shop Detail, should be revised to address the following:

a. The plant, shop and ponds should be labeled.
b. The 6975' contour line is mislabeled as 6970' inside the plant building.
c. The location of the plant water well should be shown.
d. Miscellaneous features, such as the two small squares located southeast of the plant, should be labeled.
e. Drainage and diversion ditches, runoff control and containment structures should be shown.
f. The location of the staging area illustrated on the in-set drawing should be shown relative to the plant, or Plate OP-1 should be referenced.
g. The two parallel fence lines east of the ponds may pose a hazard to wildlife and could probably be replaced by a single fence. (MM)

LC ISR, LLC (2/10) - Plate OP-2 has been updated as requested.

6) *LQD (1/09) - Section OP 1.0, Overview of Proposed Operation (Page OP-1) and Section OP 2.3, Land Use (Page OP-7): These sections state that the operation will affect approximately 285 acres. Form 1 also lists 285 acres. Does this figure include all affected lands such as roads? On page OP-3 it is stated that each well field will cover about 50 acres. Six well fields @ 50 acres would total 300 acres. Table OP-2 only lists 58 acres to be affected, which is inconsistent and unrealistic. Table OP-2 should be removed. Table OP-4 contains a better accounting of affected areas (285 acres). Well fields should be considered to be affected and should be accounted as such (the monitor well ring is a reasonable affected area boundary). An accurate estimate of affected lands for the life of the mine, within the proposed permit boundary, is required. (MM)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP Comment 3.

LQD (11/09) - Response partially acceptable. The estimate of affected area has been revised upwards from 285 to 324 acres. This appears to be a reasonable estimate based on the information included in Table OP-2, however the assumptions used to develop the estimate should be clearly described. For example: it appears that for pipelines and drilling outside of the wellfield pattern areas only the area of the excavation was counted, not the associated area affected by topsoil and subsoil piles or the area affected by backfilling and regrading operations. This should be clarified. As another example: it is stated in the comments column on page 2 of the table that the estimates did not account for pre-existing road disturbance even though new roads will follow existing two-tracks where possible. Is this true of all roads? Please describe all assumptions used in the acreage estimates. (MM)

LC ISR, LLC (2/10) - Information on the assumptions used to construct Table OP-2 have been added to the table footnotes.

7) *LQD (1/09) - Section OP 1.0, Overview of Proposed Operation: The text indicates that the proposed permit area encompasses 4,220 acres and the disturbance area will encompass approximately 285 acres. The application goes on to state that each well field will consist of a reserve block of approximately 50 acres and there are six proposed well fields. This later figure does not include the disturbance associated with the facilities area. None of the above figures account for the access road. Needless to say, all of the above is contradictory. While it is understood that there will be some need for ancillary areas, Lost Creek has not demonstrated by the permit area must be 10 times greater than the proposed disturbance. Please address the above.* ***(BRW)***

LC ISR, LLC (10/09) - The size of the Permit Area was based on a number of factors, in particular: the necessary spacing for the deep disposal wells; potential development; and practical land use considerations. With respect to the deep wells, five wells are currently planned. To accommodate regulatory requirements and meet the necessary injection criteria, the wells are widely spaced and located in Township 25 North, Range 93 West, Sections 13, 17, 18, 19, and 25. Plate OP1 has been updated to show the locations of the wells.

With respect to potential development, LC ISR, LLC is interested in potential exploration and production targets in areas near (or vertical to) the proposed mine units. Rather than 'piecemeal' the baseline data for these areas, LC ISR, LLC considered it more effective to cover a larger area at one time. In addition, this approach provides more data for these areas than would be obtained for a Drilling Notification.

With respect to practical land use considerations, the Permit Area boundaries are in some cases designed to coincide with 'claim block' or lease boundaries. These boundaries may extend outside areas of interest for exploration or production, but for easier administration, they were included in the Permit Area.

LQD (11/09) - **Response not acceptable. None of the maps indicate the potential presence of ore in Sections 16 and 25, thus to include the entire section just for the sake of one deep disposal well or for exploratory purposes does not hold merit. Baseline information (e.g., soils, vegetation, and hydrology) can be collected outside the permit area without inclusion of such lands. In addition, Figure OP-2A indicates that Well Field 6 will abut the permit area boundary without sufficient permitted lands available for monitoring well ring installation. Please provide further justification for the permit area boundary as presented. (BRW)**

LC ISR, LLC (2/10) - With respect to the size of the Permit Area, please see Response to Comment V1, ADJ#1. With respect to the location of Mine Unit 6 relative to the permit boundary, please see Comment V2, D5#6, which was resolved as of December 2009 (letter of December 21, 2009 from A. Boyle (WDEQ-LQD) to J. Cash (LC ISR, LLC). As part of that resolution, language indicating a mine unit boundary is conceptual until the respective mine unit package is submitted to WDEQ-LQD was added to the last paragraph of Section OP 1.1.

9) *LQD (1/09) - Plate OP-1: The pond designs are unacceptable for several reasons including, but not limited to the following:*

- *No location map was provided; Plate OP 1 is not considered a location map as it is of unacceptable scale and is not tied to any coordinate system;*
- *No contour interval is provided on schematics;*
- *No description or detail as to what part of the pond is above and below existing grade;*
- *No details concerning the piping system for the supply of water to the ponds and transfer of water between ponds;*
- *No specifications concerning seaming of the liner system and QA/QC procedures to be employed to evaluate the seaming; and*
- *Pond sizing calculations to address evaporative loss, inflows, etc. under a variety of conditions to demonstrate that adequate redundancy in disposal exists.*

Please present a complete set of designs and specifications for the two proposed ponds. (BRW)

LC ISR, LLC (10/09) - Plate OP-1 has been updated and revised to show the Plant and pond locations relative to the Permit Area as a whole. Plate OP-2 has been added to show more detail in the area of the ponds, including topographic contours. Design details for the ponds

are included in Attachment OP-A6 to the Operations Plan. The two reports in the attachment are "Design Report, Ponds 1 & 2", dated January 2009, and "Technical Specification", dated April 2008, both by Western States Mining Consultants. Appendix B of the Design Report provides the results of the geotechnical investigation at the proposed pond location ("Subsurface Exploration and Geotechnical Engineering Report" by Inberg Miller Engineers dated September 2008).

The storage ponds will be filled from the plant waste water tank(s) via a buried line except where it is above grade to cross the storage pond embankment. The storage pond fluid will be transferred between Ponds 1 and 2 by above grade transfer pumps and piping with suctions in the storage pond fluid. Fluid will be transferred back to the waste water tank(s) for disposal via the same methods.

The primary purpose of the storage ponds is to allow for maintenance of the disposal wells not for evaporation of waste water. (The "Operations Plan, Sections OP 2.9.4 and OP 5.2.3.1 detail that purpose.) Therefore, evaporative loss is not included in the water balance calculations, and any evaporative losses will simply enhance the disposal capacity of the waste water system. See Figures OP-5a through OP-5f for water balance diagrams.

Pond sizing was based on a normal maintenance or testing schedule for the disposal wells, or two weeks of 1% bleed from the production stream at maximum design capacity (6,000 gpm).

Single Pond Capacity = 1% x 6000 gpm x 1440 min/day x 14 days
= 1,209, 600 gallons / 7.48 gal/cu. ft.
= 161,711 cubic feet

Pond Fluid Depth= 161711 cu. ft. / (160 ft. wide x 260 ft. long)
= 3.9 feet deep

The ponds are redundant in capacity allowing for maintenance of the ponds in the event of a liner problem.

LQD (11/09) - Response not acceptable. The original comment stated that the pond designs were not acceptable for several reasons, but not limited to several items identified above. The proposed designs do not meet the criteria as outlined in 40 CFR 264, SubPart K (see attached). In addition, no details were provided concerning QA/QC criteria that would be used to evaluate seam quality, only that a factory representative would be on hand. Please make the appropriate revisions to the designs. (BRW)

LC ISR, LLC (2/10) It is unclear what WDEQ-LQD's authority is to regulate pond design under 40 CFR 264, Subpart K, especially since this portion of regulations applies only to the storage of hazardous waste and not to 11e(2) byproduct material pursuant to the RCRA Beville Amendment. Nor did the reviewer specify with what portion of the cited regulation the pond design does not comport. Nonetheless, Attachment OP-7 has been revised to include a new Pond Design Report, Technical Specifications, slope stability calculations, and engineering drawings. The Technical Specifications address the ASTM Standards that will be used for QA/QC of the liner installation.

11) LQD (1/09) - *Figure OP-2a Site Layout: A much more detailed Mine Plan map will need to be included in the permit. It should indicate all roads, fencing, topsoil pile locations, stormwater diversion structures, chemical storage areas, lay down yards, easements, utilities, pipelines, monitor well locations, air and weather monitoring stations, etc. There should be one comprehensive map that indicates where any surface disturbance or feature is planned. (**AB**)*

LC ISR, LLC (10/09) - Plate OP-1 has been updated and revised to show the life-of-project disturbance, and Plate OP-2 has been added to show more detail at the Plant. Plate OP-1 also shows estimated locations of disturbance within the mine units, based on currently available information. The specific locations of all the surface features in the mine units have not yet been determined and will be based on the ore distribution within each mine unit. Therefore, the Mine Unit packages will include the details requested above as they pertain to the individual mine units.

LQD (11/09) - Response not acceptable. Culvert locations are shown on Plate OP-1 for the main E/W road, but no culverts have been designated on the roads within the well fields, although drainages are crossed. Please indicate whether the Monitor Well Ring and its access road will be located inside or outside the fence for each wellfield. (AB)

LC ISR, LLC (2/10) - The MU-1 Application submitted on December 21, 2009 includes detailed drawings of the MU-1 layout. Specifically, Figure MU1 1-3 details the locations of planned roads, fences, and culvert installations.

12) LQD (1/09) - *Section OP1.1 Site Facility Layout: The underground power lines should be in conduit, as opposed to direct burial. This should be specified in the plan. (**AB**)*

LC ISR, LLC (10/09) - All powerlines to the point of transform from 34,500 volts to 480 volts will be overhead lines built compliant to regional raptor specifications (see Response to Comment V5, OP#34). After transform, lines will be installed per the NEC 2008 Handbook. Specifically, Table 300.5 details the depth of burial and Article 340, Section II, 340.10, (1) specifies the use of Type UF cable for direct burial.

LCI ISR, LLC plans to use direct burial cable as allowed in the NEC 2008 Handbook to deliver power to the header house and to the production wells as needed.

LQD (11/09) - Response not acceptable. LC's response is acceptable, however, the reviewer could not find where the basic information in the response was incorporated into the text. Please make the appropriate updates to the text and/or direct the reviewer to where the information is located. (BRW for AB)

LC ISR, LLC (2/10) - Section OP1.1 (Site Facility Layout) has been revised to include the requested information.

13) *LQD (1/09) - Section OP 2.1 Project Schedule - How is the amount of time for mine unit development, production, ground water sweep, reverse osmosis etc. determined. Calculations should be presented which indicate the time it will take to perform each step, based on the hydrologic conditions of the ore body. (**AB**)*

LC ISR LLC (10/09) - The time frames associated with development, production, restoration and reclamation are based on numerous factors. The main factors in determining the progression of mining at a site are hydrologic conditions, corporate production expectations and corporate capabilities which include knowledge and experience in the application of in-situ uranium production and restoration operations. The following information details how LC ISR, LLC has determined the time requirements for the ISR steps in Figure OP-4a.

Development is defined herein as the installation of mining facilities associated with a discrete ore resource. The end goal of development is commonly the installation of a mine unit. The time requirement for mine unit development is a function of manpower and drill rigs dedicated to the task. The under-riding driver for the development timeline is the production schedule requirements. Many aspects of the development time line can be adjusted as needed by increasing or decreasing the quantity of drilling rigs and people dedicated to the effort. Development starts with the installation, pump testing and sampling of the mine unit monitor well ring. Development also includes the installation of the mine unit pattern wells, pipelines and associated header houses. Figure OP-4a reflects an approximate twenty-four month plan to complete the development work as follows:

A. Monitor Well Installation: Typically 60 to 70 wells, plan two drill rigs for five months.
B. Pump Test and Sampling: Allow for three months.
C. Mine Unit Application Preparation: Allow for two months.
D. Injection/Production Well Installation: Typically nine header houses per unit, 60 wells per header house. Requires 10 drill rigs to complete one header house in approximately 40 days. Allow for 13 months total.
E. Construction – Allow one month per header house (final header house completed in Month 24).

Production is defined herein as the recovery of the developed resource of a mine unit. The time requirement for mine unit production is a function of the size of the mine unit, the hydrologic properties of the formation, the available capacity of the Plant and the economic cut-off point for uranium grade and recovery.

Mine units are generally developed and activated in stages. Commonly, new production is staged in on the level of header houses (also called 'modules') rather than staging in complete new mine units. Depending on available pipeline and process plant capacity, an operator may initiate new production in areas as discrete as individual patterns. Production begins once injection of fortified groundwater (lixiviant) begins. The total time for production of a pattern is dependent on the efficiency of the areal sweep of the lixiviant, the effectiveness of the oxidation of the uranium in place and the injectivity and productivity of the formation (well flow rates). The factors listed below were incorporated into the estimation of the average time for economic production from a pattern at the proposed project.

A. Production Rate: 32 gallons per minute per production well. This is based on hydrologic results of several formation characterization tests.
B. Pore Volumes (PV): The estimated number of PVs processed to achieve economic depletion of the pattern is approximately 60 PV for the purpose of the production model.
C. Recovery Percentage: 80%. "NI-43-101 Preliminary Study for the Lost Creek Project" prepared by Lyntek, Inc., presents an 84 to 93% recovery rate for Lost Creek ore from laboratory tests. The 80% recovery rate as used for calculations in the production model is regarded as conservative and reasonably achievable.
D. Production Grade: The grade at which a pattern is expected to be turned off because the lixiviant grade has diminished to an uneconomic level was selected to be 10 milligrams per liter U_3O_8 for the purpose of the production model.

The assumptions above have been used in conjunction with a proprietary production model. The production model indicates that required time for the economic depletion of a single pattern is 12 months. Therefore, production in a mine unit is modeled to be completed 12 months after the initiation of production in the last developed header house in the unit. There is commonly a delay between the completion of development and the commencement of production at a given header house as determined by the availability of flow capacity within the process facility, specifically the ion exchange section.

Figure OP-4A (Lost Creek Project Development, Production and Restoration Schedule) was developed on the premise that the header houses within a mine unit will be activated in stages and that the final header house will be activated approximately one year after the first. Consequently, each mine unit has an expected production life cycle of approximately two years.

Groundwater Restoration, when completed, is defined in WDEQ-LQD Guideline 4 as the condition achieved when the quality of all groundwater affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology. Schedule OP-4A is based on 0.30 PV of groundwater sweep, six PVs of reverse osmosis treatment, and one PV of recirculation followed by one year of stabilization and sampling. Refer to Figures OP-5A through OP-5F for detailed scenarios of the water balance. The determination of the anticipated required amount of treatment for each restoration stage is discussed in detail the Responses to Comments V5, RP#1 through RP#3 and summarized below.

A. **Groundwater Sweep (GWS)**: The flow rate for groundwater sweep is anticipated to be typically 30 gallons per minute (gpm). The selection of this flow rate is consistent with the principles of timely and efficient ground water restoration, i.e., Best Practicable Technology, as discussed in the Responses to Comments V5, OP#16, OP#97, and OP#101. The following calculations determine the twelve month per mine unit time requirement for GWS.

Pattern PV = Area x Completion Interval x Flare (horizontal & vertical) x Porosity x Gallon Conversion Factor
Pattern PV = 9000 ft^2 x 12 ft x 1.44 x 0.25 x 7.48 gal/ft^3 = 290,822 gallons

Time per Pattern = Pattern PV x Number of PV / GWS Flow Rate/ Time Conversion factor
Time per Pattern = 290,822 gallons x 0.30 PV / 30 gpm / 1,440 minutes per day
Time per Pattern = 2.0 days

Time per Mine Unit = Time per Pattern x # of Patterns per Header House x # of Header Houses per Mine Unit
Time per Mine Unit = 2.0 days per Pattern x 20 Patterns per Header House x 9 Header Houses per Mine Unit
Time per Mine Unit = 360 days (or about 12 months)

B. **Reverse Osmosis (RO)**: The life of project average recovery flow rate for RO as it relates to groundwater restoration is anticipated to be 600 gpm. As water balance Figures OP-5A to 5F indicate, the Mine Unit recovery rate for restoration areas undergoing reverse osmosis treatment will range between 570 and 800 GPM with the 570 GPM being the most common rate (Figure OP-5C). The total number of pore volumes of reverse osmosis required is estimated to be six as discussed in Responses to Comments V5, RP#1 and RP#3. The following calculations determine the thirteen-month requirement for RO treatment of a typical Mine Unit:

Pattern PV = Area x Completion Interval x Flare (horizontal & vertical) x Porosity x Gallon Conversion Factor
Pattern PV = 9000 ft^2 x 12 ft x 1.44 x 0.25 x 7.48 gal/ft^3 = 290,822 gallons

Time per Pattern = Pattern PV x Number of PV / Flow Rate / Time Conversion Factor
Time per Pattern = 290,822 gallons per PV x 6 PV / 570 gpm / 1,440 minutes per day
Time per Pattern = 2.1 days

Time per Mine Unit = Time per Pattern x # of Patterns per Header House x # of Header Houses per Mine Unit
Time per Mine Unit = 2.1 days per Pattern x 20 Patterns per Header House x 9 Header Houses per Mine Unit
Time per Mine Unit = 378 days (or about13 months)

Recirculation: The groundwater within each Mine Unit (1 PV by definition) will be homogenized by distributing the cumulative recovery flow back to the injection well system without treatment or deduction for bleed. In theory, this activity could take as few as seven days (see calculation below). To reflect the time required for implementation and execution, Figure OP-4a indicates a one month schedule for recirculation.

Pattern PV = Area x Completion Interval x Flare (horizontal & vertical) x Porosity x Gallon Conversion Factor
Pattern PV = 9000 ft^2 x 12 ft x 1.44 x 0.25 x 7.48 gal/ft^3 = 290,822 gallons

Time per Pattern = Pattern PV x Number of PV / Flow Rate / Time Conversion Factor
Time per Pattern = 290,822 gallons per PV x 1.0 PV / 32 gpm / 1,440 minutes per day
Time per Pattern = 6.3 days

Time per Mine Unit = Time per Pattern = 6.3 days

Stabilization: Per Guideline 4, Section III(D)(1)(d) a stability period of "at least six months will begin". The guideline specifies that the restoration samples are to be taken monthly over the six month period to insure that the water quality within the wellfield has stabilized. LCI ISR, LLC has committed to an extended stabilization period with a reduced sampling frequency to ensure geochemical stability. Samples will be taken at the outset of Stabilization and at the end of each of three calendar quarters (four total sampling events).
3 quarterly samples: 3 samples x ¼ year x 12 months per year = 9 months

LQD (11/09) - Response not acceptable. The assumptions outlined in the steps provided in the response should be provided as part of the permit application. They could be added to a Figure OP4-c, or incorporated into the text of Section OP2.1, Project Schedule. (AB)

LC ISR, LLC (2/10) – The information not incorporated into the application as part of the October 2009 responses has been added to various sections of the application. Specifically, the information on which the schedules for Development and Production is based is included in Section OP2.1. The information on which the schedules for groundwater sweep, reverse osmosis, and recirculation is based is included in Sections RP 2.3.2, 2.3.3, and 2.3.4, respectively.

19) *LQD (1/09) - Section OP 2.2, Additional Regulatory Requirements. Reference is made to the SWPPP, yet a complete hydrologic control plan for the facilities area and associated appurtenances as well as the first mine unit must be included in the Operations Plan. Will water from the facilities area be diverted to a lined site containment pond. The hydrologic control plan for the remaining well fields maybe submitted with the individual well field packages. **(BRW and AB)***

LC ISR, LLC (10/09) - The drainage plan, stamped by a Professional Engineer, is included as Attachment OP-4 to the Application. It is important to note that the drainage plan was developed to ensure that surface water runoff will not cause undue soil erosion or excessive pooling of water. The drainage plan was not developed to prevent the migration of chemical spills. Due to the low relief of the area, lack of contaminant sources, and arid conditions, no lined containment ponds for runoff or other substantial erosion surface water control structures are required. No diversion structures are anticipated. When roads cross an ephemeral drainage a culvert will be installed. The culvert will be designed by a professional engineer in accordance with WDEQ-LQD Guideline 15 (see Sections OP 1.1 and 2.5.2).

During construction activities, erosion of topsoil into drainages will be minimized as required by the use of silt fence, hay bales, or other similar systems. There are no plans to alter the natural drainage within the wellfield areas.

LQD (10/09) - Response not acceptable. The only material presented concerns the WYDES Stormwater Permit and some general maps that illustrate drainage / flow direction. In the reviewer's opinion the material presented does not meet the intent of W.S. § 35-11-406(b)(v). Specifically, generic designs of the proposed Alternate Sediment Control Measures to be utilized should be furnished as well as the approximate installation location on one of the drainage maps provided. Please provide a complete hydrologic control plan as originally requested. (BRW)

LC ISR, LLC (2/10) - The previous drainage plan submitted as Attachment OP-4 has been replaced with a more detailed plan that meets the requirements of W.S. § 35-11-406(b)(v). Also, the text in Section OP 2.2 has been revised. In addition, the reviewer must keep in mind the difference between an ISR facility and a coal mine when it comes to runoff and drainage. Because of these differences, hydrologic control plans for each facility will differ significantly.

20) *LQD (1/09) - Table OP-2 and the text on Page OP-7: Section "OP 2.3 – Land Use" states that a total of approximately 285 acres will be affected throughout the project. However, Table OP-2 only indicates 58 acres as being affected. This inconsistency should be clarified. It should be noted that Table OP-2 should include all disturbed areas throughout the life of the mine including all "tertiary roads". **(MLB)***

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#3.

LQD (11/09) - Refer to LQD's review of Comment OP6 for acceptability determination. (MLB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#6..

22) *LQD (1/09) - Section OP 2.5, Topsoil Management, Page OP-8: The second paragraph of this section reiterates that only 58 acres will be affected. However, this value disagrees with the previously stated value of 285 acres (in the Land Use section of the Operations Plan, Page OP-7). Please clarify which value is accurate: 58 acres or 285 acres. **(MLB)***

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#3.

LQD (11/09) - Refer to LQD's review of Comment OP6 for acceptability determination. (MLB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#6.

23) *LQD (1/09) - Section OP 2.5, Topsoil Management, Page OP-8: The text on page OP-8 states that detailed soil surveys will be conducted at the plant site as well as each mine unit to provide specific information for topsoil protection and management. Given that the first well field package must be included with the application, this is not acceptable. The detailed soil survey(s) necessary for topsoil management decisions and commitments at the first mine unit must be included in the Permit Application. **(BRW and MLB)***

LC ISR, LLC (10/09) - With respect to the life-of-mine disturbance, the detailed soil survey information is included in Attachments OP-5a and 5b. With respect to Mine Unit One, please see Response to Comment V5, OP#2.

LQD (11/09) - Response not acceptable. The reviewer agrees that the soil survey for Mine Unit 1 could be submitted prior to permit approval. However, the long-term facilities area surveys are incomplete (reference Attachment 5b). In addition, the surveys lack clarity in terms of specifying salvage depths. The comment remains outstanding until the survey in Attachment 5b is complete and salvage depths are clearly identified. (BRW)

LC ISR, LLC (2/10) - The soil survey for Mine Unit One was submitted as Attachment MU1 3-1 to the Mine Unit One application in December 2009.

Please see Attachment OP-5b for the updated soils information for access corridors and the deep well locations. The text in Section OP 2.5 has also been updated, and Plate OP-3 (Topsoil Stripping Depths) has been added.

The deep well in the SW¼ of Section 25 (Well WDW1) was installed in late 2008 to provide the necessary information for the WDEQ-WQD Class I permit application. Because the well area had already been disturbed and reclaimed and because no upgrades to the existing road to the well area are planned, no sampling was conducted. Please see Response to Comment V5, OP#29 for discussion of the approach that will be used for the other deep well access roads.

24) *LQD (1/09) - Section OP 2.5, Topsoil Management: should include a plan for well field layout and installation to accompany Figure OP-7c. (MM)*

LC ISR, LLC (10/09): Pursuant to discussions at the June 22, 2009 meeting in Casper with WDEQ and LCI, a generic discussion of wellfield design criteria is included in Section OP 2.5 of the permit application.

LQD (11/09) - Response not acceptable. Please provide a written plan and revisions to Fig. OP-6 describing and illustrating in detail the specific measures to be employed during wellfield development operations to minimize disturbance and protect the native vegetation and soils. These measures should include up-front planning and installation of roads to header houses (with topsoil salvage); establishment of designated temporary off-road traffic routes; construction of appropriate drainage crossings, culverts or graveled low-water crossings; centralization and co-location of pipelines and utility lines; restricting off-road operations during wet or muddy conditions; orderly and sequenced installation of wells and utilities, designation of zones or corridors of "no disturbance"; use of low-round pressure vehicles; and

appropriate enforcement of these protective measures. The goal is to preserve a substantial portion (at least 50%) of the native vegetation in the wellfield. If this is not achievable then topsoil stripping may be required prior to wellfield development. (MM)

LC ISR, LLC (2/10) - Sections OP 2.5 thru 2.7 of the application already address several measures that will be employed to minimize disturbance and preserve 50% of the native vegetation within the mine unit as measured by the area inside the monitor well ring; including most of the items requested in the latest WDEQ comment. In addition, the individual mine unit packages provide location-specific details for LQD review. However, in response to this item, Sections 2.5.2.2, 2.6, and 2.7 of the Operations Plan were further strengthened.

26) *LQD (1/09) - Section OP 2.5.2 Long Term Topsoil Protection, Section OP2.6 Roads, Figure OP-2c. Topsoil stripping of roads has not been mentioned but is required for topsoil protection. The text should commit to topsoil stripping for roads and Figure OP-2c should also indicate that topsoil will be stripped. The amount of topsoil to be stripped should be specified and the height, dimensions, and locations of topsoil piles should be detailed. In addition, the seed mixture for the topsoil piles should be specified. (**AB**)*

LC ISR, LLC (10/09) - The text in Section OP 2.6 has been revised to state primary and secondary roads (as defined in WDEQ-LQD Guideline 4 Attachment III Section III(B) will be stripped of topsoil. Figure OP-2c is intended to show road design and therefore has not been revised to discuss topsoil removal.

Topsoil depths in the areas around the plant facility, primary and secondary roads, and the first wellfield have all been characterized by Order 1-2 soil surveys. The results of the soil surveys in the area of the plant facility and roads is provided in Attachments OP-5a and 5b of the permit application. Results of the soil survey for the first mine unit will be provided in the mine unit package.

The long-term seed mixture to be used on long-term topsoil piles is given in Table RP-3 with the exception that shrubs will be removed from the mix. An initial vigorous cover crop, such as sterile rye, may be planted to stabilize the topsoil pile and then the final long-term seed mixture interseeded.

LQD (11/09) - Response not acceptable. Section OP2.6 has been revised to include a commitment to strip primary and secondary roads. Please include a statement clarifying that soils in and adjacent to existing two-track roads that will be upgraded to secondary roads will be stripped. Soil survey information has been provided in Attachments OP-5a and OP-5b. No changes were made to Figure OP-2c, yet in the cross sections of the road designs these figures indicate "original grade" with gravel

applied on top of the original grade. This seems to imply that no topsoil is stripped. Please change "original grade" to a term that indicates that the topsoil has already been removed. (AB)

LC ISR, LLC (2/10) - Section OP 2.6 has been revised to clarify that before upgrading a two track road the topsoil will be stripped and stockpiled. Figure OP-3c (see note below) has been revised as requested.

Note: As part of the October 2009 responses, Figure 2c (Road Design Features) should have been removed from the application and an updated version, renumbered to Figure 3c (Road Design Features), should have been inserted. It was renumbered to keep the first reference to each figure in numerical order in the text. However, the similarity of the old and new numbers has apparently created some confusion. The figure references in the text have been checked and a note included on the Index Sheet to address this issue.

29) *LQD (1/09) - Section OP 2.6, Roads, Page OP-10 and Figure OP-2a: The first paragraph of Section OP 2.6 as well as Figure OP-2a neglect to acknowledge and/or depict the roads that will be needed to access monitoring wells (sometimes referred to as "tertiary" roads). These roads must be discussed in the text and must be depicted on Figure OP-2a. Tertiary roads must also be depicted on any other figures depicting the project's roads. (**MLB**)*

LC ISR, LLC (10/09) - Plate OP-1 has been updated to show the approximate location of all proposed roads. The location of roads will be need to be adjusted as the ore body is further delineated. LC ISR, LLC will submit the proposed changes to WDEQ-LQD for review and approval. The site road map will subsequently be adjusted to accurately reflect road locations.

Please note that the first paragraph in Section OP 2.6 is intended to discuss primary and secondary roads. The fourth paragraph discusses two track roads that will be used to access monitor wells.

Each figure within the application serves a specific purpose(s). For example, Figure OP-1 shows the site layout including the roads. Therefore, it is not reasonable to put all the roads on all of the figures. This would result in illegible figures.

LQD (11/09) - Response not acceptable. The text discussion is generally acceptable. However, the text indicates that Secondary Roads will be utilized to access the various deep well injection sites. Figure OP-1 shows a Secondary Road that accesses a deep disposal well in the SESE of Section 19 that connects to nothing. Additionally, the Secondary Road that connects to the deep well injection site in Section 16 connects to an existing two-track. According to the reviewer's interpretation of the text this two-track would be upgraded to a secondary road and should be illustrated as such. The

map legend should differentiate between Primary, Secondary, and Tertiary Roads as they will be constructed to different standards. Finally, Figure OP-1 and others which illustrate road locations do not illustrate the same alignment as what is shown on Plate OP-1. Please revise the submittal accordingly. (BRW for MLB)

LC ISR, LLC (2/10) - The primary and secondary roads on Plate OP-1 were drawn at their respective widths. However, as noted by the reviewer, despite the differences in width, it is difficult to distinguish primary from secondary. Therefore, the various types of roads have been color coordinated on Plate OP-1.

Deep well locations were selected based on several criteria including the availability of existing two track roads so the installation of new roads can be minimized. The deep well locations referenced in the comment are mostly accessible by existing two-track roads as shown on the Plate OP-1. (In the plate legend, gray lines are two-track roads.) Because the traffic on these existing two-track roads will be relatively light, LC ISR, LLC is not proposing to upgrade them to secondary roads. However, in locations where new roads must be built, LC ISR, LLC is proposing the installation of secondary roads. The text in OP 2.6 has been revised to reflect this approach.

Figure OP-1 presents a regional view of the Project Area including existing roads shown on a USGS topo sheet. Figure OP-1 does not show the location of planned roads other than to show that a significant portion of the east and west access roads will overlay existing two track roads. Plate OP-1 and Figure OP-2a show existing and planned roads. A review of each of these maps shows that the roads, existing and planned, are aligned correctly and consistently.

30) *LQD (1/09) - Section OP 2.6, Roads, Page OP-11: The fourth paragraph acknowledges that tertiary (two-track) roads will be needed and used to access the monitoring wells and header houses at the project. The text indicates that some pre-existing two tracks can and will be used for these purposes. However, the text also refers to the routes that will be taken to some monitoring wells and header houses as "travel routes". The inference of this reviewer is that these are paths beaten through the sage brush where there is no preexisting two-track. Travel routes will quickly become two-tracks which will, in turn, require reclamation at the end of the project. All of the site's roads, two-tracks, and travel routes must be accounted for in the text as well as site maps. (**MLB**)*

LC ISR, LLC (10/09) - Figure OP-1 has been updated to show the approximate location of all new two-track roads. The text in Section OP 2.6 has also been updated to discuss the two track roads.

LQD (11/09) - Response not acceptable. The LQD accepts LC's response that the exact location of roads with respect to specific mine units will be submitted with the

corresponding wellfield package. However, the text within Section 2.6 does correlate with Figure OP-6A. See also Comment 31 below. Please update the figure accordingly. (BRW for MLB)

LC ISR, LLC (2/10) - The text in Section OP 2.6 has been revised to clarify that secondary roads will connect header houses. Figure OP-6a has been revised to correct the width of secondary roads to 14 feet.

31) *LQD (1/09) - Section OP 2.6, Roads: discusses the primary access road to the plant and secondary access roads to the mine units. Figure OP-2c illustrates the main access road with a 20' wide surface and secondary access road with a 12' surface. Figure OP-7b is somewhat inconsistent. It shows a "main road" with a 20' surface accessing the well field and a 15' wide secondary road in the well field. Table OP-4 lists main access road, main roads and secondary roads. Clarification is needed relative to road classifications and widths. (MM)*

LC ISR, LLC (10/09) - Figures OP-2c and OP-7b are incorrect based on the Bureau of Land Management publication "Engineering Road Standards, Excerpts From BLM Manual, Section 9113, 1985". Figure OP-2c has been revised to show the "Secondary Access Road" width as 14 feet and the borrow ditches as 3 feet each. Figure OP-7b has been revised to show the "Secondary Road" as 14 feet wide. Table OP-4 has also been revised based on the above as well as the Response to Comment V5, #3.

LQD (11/09) - Response not acceptable. There is still inconsistency regarding road widths. Figures OP-2c and 3c show the secondary roads being 12' wide. Figures OP-6a and 6b show secondary roads being 15' wide. (MM)

LC ISR, LLC (2/10) - Figures OP-3c (see note below), OP-6a and OP-6b have been revised to show the correct dimensions. The main access roads will be 20 feet wide with 6 foot borrow ditches on either side (32 feet total width). Secondary roads will be 14 feet wide with 3 foot borrow ditches on either side (20 feet total width). Two track roads will have a total width of 8 feet 8 inches.

Note: As part of the October 2009 responses, Figure 2c (Road Design Features) should have been removed from the application and an updated version, renumbered to Figure 3c (Road Design Features), should have been inserted. It was renumbered to keep the first reference to each figure in numerical order in the text. However, the similarity of the old and new numbers has apparently created some confusion. The figure references in the text have been checked and a note included on the Index Sheet to address this issue.

35) *LQD (1/09) - Section OP 2.8.1.3, Fencing and Screening: Fencing design and specifications should be presented in the Operations Plan. Wildlife fencing, mud pit fencing and security fencing should each be specified. (AB)*

LC ISR, LLC (10/09) - The specific provisions of the Wildlife Protection and Monitoring Plans have been moved from Section OP 2.8 to Attachment OP-6. Section OP 1.3.3 of Attachment OP-6 discusses fencing. Based on preliminary discussions with Mr. Scott Gamo of WGFD on August 18, 2009, use of fencing that is intended to preclude access by all wildlife to the mine units (e.g., Type I and II fencing) is not recommended due to mortality and injury concerns. Use of Type III fencing (to restrict access by cattle and wild horses) would be consistent with the approach used at other ISR operations. The exception would be in areas of the Plant, such as around the Storage Ponds.

LQD (11/09) - Response not acceptable. Section 1.3.3 of Attachment OP-6 has been added to address wildlife fencing around the Mine Units (Type III fencing) and around the storage pond (Type I fencing). What type of security fencing will be utilized around the processing plant? This should be addressed as part of the Operations Plan as well. (AB)

LC ISR, LLC (2/10) - Type III fencing will be used around the Plant. Section 1.3.3.3 of Attachment OP-6 has been updated to include this. A cross-reference to that section of Attachment OP-6 has been added to Section OP 2.3.

36) *LQD (1/09) - Section OP 2.8.1.3, Fencing and Screening. As water in the ponds becomes concentrated over time, it is likely that screening will be required. US Fish and Wildlife Service (USFWS) and Wyoming Game and Fish (WG&F) should be consulted regarding the ponds and their requirements. Pond sampling schedule, the type of analysis to be performed, and screen design should all be presented in the Operations Plan. (AB)*

LC ISR, LLC (10/09) - Table OP-5 includes the anticipated water quality in the pond, and Section OP 1.3.3 of Attachment OP-6 discusses the pond water quality relative to wildlife. Because the ponds are not evaporation ponds and because the water in the pond will be replaced periodically, the parameter concentrations are not anticipated to increase as would the concentrations in an evaporation pond. The pond sampling parameters and schedule are discussed in Section OP 2.9.4. As noted in the Response to Comment V5, OP#54, a copy of Attachment OP-6 will be sent to WGFD and USFWS for review.

LQD (11/09) - Response not acceptable. Pond sampling schedule and the parameters to be monitored were provided in Section OP2.9.4. However, the need for any deterrents to birds landing on the ponds and ingesting the water is under review of WGFD and USFWS. This comment will remain unresolved pending the review of WGFD and USFWS. (AB)

LC ISR, LLC (2/10) - The permit application will be updated as necessary in response to the WGFD and USFWS comments.

44) *LQD (1/09) - Section OP 2.8 Wildlife Monitoring. Only monitoring of raptors and sage grouse is listed, yet vertebrates are also required to be monitored. (AB)*

LC ISR, LLC (10/09) - The Wildlife Monitoring Plan is presented in Attachment OP-6 Section 2.0. LC ISR, LLC commits to monitoring: big game; sage grouse/upland birds; raptors; Migratory Birds of High Federal Interest; and lagomorphs (as prey abundance for raptors, Section 1.2.3). When completing other wildlife surveys, incidental observations of federally listed Threatened and Endangered Species, non-game mammals, non-game birds, and reptiles and amphibians made will be recorded, and these will be summarized in the Annual Report.

LQD (11/09) - Response not acceptable. Attachment OP-6, Wildlife Protection Plan and Wildlife Monitoring Plan has been added to the permit. Big game (pronghorn), lagomorphs, raptor, sage grouse and migratory birds are all included as part of the monitoring plan. This plan has been submitted to USFWS and WGFD and the permit will need to include their recommendations. The monitoring will need to comply with the recommendations. The LQD (Steve Platt) will need to review the written responses from these agencies. This item is unresolved pending submittal and review of the USFWS and WGFD recommendations. (AB)

LC ISR, LLC (2/10) - Please see response to previous comment.

48) LQD (1/09) - Section OP 2.8.2.1 Raptors. The potential need for wildlife mitigation measures should be outlined in the Operations Plan. Approval from USFWS and WGF will be required for taking a nest, or any raptor deterrence plan. (**AB**)

LC ISR, LLC (10/09) - Attachment OP-6 Section 1.2.3 describes the potential need for mitigation measures, if a raptor nest is found within the area covered by surface activity restrictions. That section also commits to consulting USFWS and WGFD to determine appropriate mitigation measures. Attachment OP-6 Section 1.1.2.2 commits to using agency-approved designs for anti-roosting raptor deterrents.

LQD (11/09) - Response not acceptable. Attachment OP-6, Section 1.3.1 Locations and Disturbance Area. states that if a raptor nest if found within 0.5 miles of project activities, that USFWS and WGFD will be consulted and if needed appropriate mitigation permits will be obtained. Following USFWS and WGFD review, they may require that a nesting deterrence plan or other mitigation be in place prior to mining.

This comment is unresolved, pending the review of Attachment OP-6 by USFWS and WGFD. (AB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#36.

57) LQD (1/09) - *Section OP 2.9, Prevention and Remediation of Accidental Releases: This section needs significantly more detail. What is the specific training that will be provided all employees? What is the frequency of the training? What is the frequency of the inspections to be conducted? How will the inspections be documented? The detailed procedures to be outlined in the Environmental Management Programs should be presented as part of the mine permit. Surface and pipeline spills have been a common occurrence at ISL facilities in the past. The Division is requiring that detailed, documented, training and inspections be clearly outlined in the Operations Plan. (**MLB**)*

LC ISR, LLC (10/09) - Pursuant to discussions during the June 22, 2009 meeting in Casper between LQD and LC ISR, LLC, Standard Operating Procedures (SOP) addressing spill prevention and mitigation will be developed and implemented at the site. The SOPs will specifically address: pipeline installation and testing; automated system monitoring and alarming; site inspections; spill mitigation; and employee training.

LQD (11/09) - Response not acceptable. LC has significantly updated the text in this section; however, there is no indication that SOP's will be developed as indicated in the response. The text in Section 2.9 should be revised to indicate that SOP's will be developed to address various critical issues from pipeline installation to spills and indicate that the SOP's will be available on-site for review by the LQD. (BRW for MLB)

LC ISR, LLC (2/10) - Section OP 2.9 has been revised to add commitments to write and implement SOPs addressing spill prevention and remediation.

58) LQD (1/09) - Section OP 2.9, Prevention and Remediation of Accidental Releases: This section must include a discussion of how contaminated soils resulting from a spill are to be delineated horizontally and vertically. Gamma ray and SAR must be included in the parameters measured in the soil. Specifics on how the depth of contamination will be determined and mapped must be provided. Treatment protocol must also be addressed in this section. Additionally, the permit must contain a commitment to report and track annual releases from the site via a map in the WDEQ/LQD Annual report. The map should be a cumulative map indicating the footprint of the recent year's spills in addition to any previous spills. This map should be accompanied by a table outlining the history of each release, including the estimated amount (gallons) of the release, footprint of contamination, depth of

contamination, initial contamination levels, their sample locations, and any history of remediation efforts. **(MLB and AB)**

LC ISR, LLC (10/09) - Section OP 2.9 has been revised to address this comment.

LQD (11/09) - Response not acceptable. Section OP 2.9.1 Pipelines, Fittings, Valves, and Tanks has been revised to include a discussion regarding spill investigation and reporting. Spills greater than 420 gallons will be reported to the DEQ within 24 hours, however any spill, including those less than 420 gallons will need to be investigated and included in the Annual report. This could be more clearly stated in Paragraph 5 of this section, which states "Within 24 hours of the discovery of a lixiviant spill...." But could be changed to read "Within 24 hours of the discovery of any lixiviant spill (regardless of the volume)" Also, does lixiviant refer to the solution being injected as well as the pregnant solution? This should be clarified. (AB)

LC ISR, LLC (10/09) - The text in the first sentence of paragraph 5 in Section 2.9.1 has been revised as suggested. Lixiviant in ISR mining is synonymous with mining solution. Therefore, lixiviant refers to both the injection and production solutions. This is clarified in the text in the first sentence of Paragraph 1 of Section 2.9.1.

60) LQD (1/09) - Section OP 2.9.1, Pipelines, Fittings, Valves and Tanks Page OP-16: *In the first paragraph, more detail on how the flow through pipelines will be monitored must be provided. Specifically, there should be as commitment to having a central control room where monitoring of pressure and flow of individual wells and pipelines and system balance on a mine wide and unit basis is automated. It is expected that there will be alarms requiring a response by a human being and documentation that the alarm was answered and by whom it was answered, etc. It is the reviewers' belief that a human being should not have to occupy a header house to monitor what is occurring in that particular sector of a given well field. A central control room will also minimize traffic across the site, a stated goal of the project. Other items to be addressed include how the alarm system will be tested to verify its integrity; use of tolerance limits to account for nominal deviations in flow and pressure, who/how the entire system will be monitored, whether the system will be monitored 24 hours per day and seven days per week by a human. Will the system have redundancy? In the earliest meetings among LQD and Lost Creek ISR personnel (along with AATA personnel), a central control room style of monitoring was explained (by AATA to LQD) to be an integral part of this project's design. **(MLB and BRW)***

LC ISR, LLC (10/09) - The following response is grouped by topic (Leak Detection, System Integrity, Tolerance Limits, Oversight, and Redundancy).

Leak Detection:
The basis for monitoring flow and pressure in pipelines is the prevention of leaks. There will be three layers of protection associated with the wellfield instrumentation:

1. Monitoring and Data Output
2. Alarm and Notification
3. Control and Shutdown

1. Monitoring and Data Output:

a. Oxygen: Oxygen pressures will be monitored for abnormal operating conditions.
b. Production Systems: The main header pressure and flow rate will be monitored as well as the flow rate of each of the production wells for abnormal operating conditions. The On/Off status of each of the pumps will also be monitored.
c. Injection Systems: The main header pressure and flow rate will be monitored as well as the flow rate of each of the injection wells for abnormal operating conditions.
d. Header House Sumps: Sump levels and the operating status of the sump pumps in the header house basements will be monitored and transmitted to the Plant for review/alarm.

2. Alarm and Notification:

a. Oxygen: High and low data points will be set for oxygen injection piping within the header houses. If pressures are outside the set points, Operators will be notified via alarm and Wellfield Operators will address the upset condition.
b. Production Systems: The main header pressure and flow rate will have high and low set points. If there is an upset condition, Operators will be notified via alarm and Wellfield Operators will address the upset condition. The same is true for individual production well flow rates as well as the On/Off status of the pumps. Differential flow algorithms may be utilized to review differential flow status to determine if there is a potential problem. Production wellheads will have fluid detection systems to alarm of a leak. The fluid will close a circuit that will generate an alarm either locally, at the plant, or both.
c. Injection Systems: The main header pressure and flow rate will have high and low set points. If there is an upset condition, Operators will be notified via alarm and Wellfield Operators will address the upset condition. The same is true for individual injection well flow rates. Differential flow algorithms may be utilized to review differential flow status to determine if there is a potential problem. Injection wellheads will have fluid detection systems to alarm of a leak. The fluid will close a circuit that will generate an alarm either locally, at the plant, or both.
d. Header House Sumps: If sumps have fluid in them, the sumps will be activated and the fluid pumped into the production header. Anytime the sumps are activated, the Plant Operator will receive an indication. If a high level in the sump is received, the

Operator will receive an alarm and the Wellfield Operator will address the upset condition.

3. Control and Shutdown:

a. Oxygen: Pressure switches and interlocks with the injection system will be utilized to insure that oxygen injection cannot occur without adequate flow and pressure in the injection header. The concept being that if oxygen is only allowed to enter the injection header when water is present, then dangerous concentrations cannot build up in the piping.
b. Production Systems: There are several levels of control and shutdown within the production system. The PLC will be connected to the Plant and will allow for shutdown/startup of all production wells in upset conditions. The main valve will be capable of being shut based on operating conditions, i.e. sump overflow, ruptured flowline, etc. The motor control center (MCC) will typically be interlocked with the sump high level shutoff to shut down operating pumps. The wellheads will typically utilize any leaking fluid to complete a circuit and initiate an alarm in the form of either an audible/visible alarm locally or by transmitting an alarm to the operations center. Simple systems included in the piping include check valves to insure that pipeline production fluid cannot enter shutdown sections of pipe.
c. Injection Systems: Control of this system begins with the control valve where the injection fluid enters the header house. This valve will maintain the appropriate pressure and flow for the local operating conditions as well as allow for complete shutdown of injection. Data from the main flow line and the individual injection wells will be transmitted to the Plant for review. If there is an upset condition, operators will be notified and suspect area will be shut down for maintenance. The wellheads will typically utilize any leaking fluid to complete a circuit and initiate an alarm in the form of either an audible/visible alarm locally or by transmitting an alarm to the operations center.
d. Header House Sumps: High sump levels will initiate a shutdown in the production wells and alarm the Operators.

System Integrity:

As with any system, one of the keys to the overall integrity is a regular presence of Operators in the mine units. The Operators will be responsible for taking measurements and looking for leaks and problems at the header houses. In addition, their regular routine will include checking each of the wellheads for leaks or salts and repairing them as needed. They will also be required to the drive the pipeline right-of-way and check the valve stations for leaks and signs of moisture. Also key to the proper operation is the additional review of operational data by managers and engineers. Verifying data through calculation and providing technical support to the operators will be routine to their activities.

Tolerance Limits:
Differential flow algorithms may be utilized to review differential flow status to determine if there is a potential problem.

Oversight:
The facility will have coverage 24 hours a day, 7 days a week from both Wellfield Operators and Plant Operators.

Redundancy:
The system has multiple components with varying points of redundancy, including:
- Flow data capture/analysis and sump alarms and wellhead leak detection in header houses;
- Flow data capture/analysis from the plant to the disposal well and from the disposal well pump to the wellhead;
- Pipelines have flow measurement at the distribution and reception points as well as pressure comparison.

LQD (11/09) - **Response not acceptable. The response is, to a degree, nebulous. For example, there is nothing specific in the response to indicate where the alarms will be located (i.e., within a central control facility, within the wellfield proper, or ?). Suffice as to say the discussion under Item 2 is open-ended regarding this subject. Additionally, a substantial portion of the response has not been incorporated into the application text. An operation that relies solely on field monitoring is unacceptable. The system operation should be constructed such that pressure and flow of each well can be monitored, individual well flow rates can be adjusted, and individual wells can be turned on or off from a central location. A brief discussion as to how the entire system will work should also be provided (e.g., is everything hard-wired or is telemetry being used for all or part). Please also see the original comment and revise the text accordingly. (BRW)**

LC ISR, LLC (2/10) - The text is Section OP 3.6 has been updated with additional information about the system controls, and a cross-reference to that section has been added in the 3rd paragraph of OP 2.9.1

61) LQD (1/09) - *Section OP 2.9.1 Pipelines, Fittings, Valves and Tanks. Preventive maintenance procedures should then be described. Visual inspection of pipelines, fittings and valves should be conducted to detect seeps or deteriorating conditions. Preventive maintenance schedule for replacement of pumps or valves, should also be discussed. **(AB)***

LC ISR, LLC (10/09) - Information on equipment design life and inspection has been added to Section OP 2.9.1.

LQD (11/09) - Response not acceptable. Section OP 2.9.1 Pipelines, Fittings, Valves, and Tanks states that "visual inspection of pipelines, valve stations... is the daily responsibility of all mine site staff" and that "it is the responsibility of mine unit operators to inspect these items on a routine basis" It is recommended that a formal inspection program (e.g., develop an SOP) and inspection checklist be implemented on a set schedule in order to document that these inspections are being conducted. (AB)

LC ISR, LLC (2/10) - Operators will be task-trained in the proper inspection of piping systems. SOP's, including checklists, will be utilized in the inspection of all operating systems (Section OP 2.9). As with all SOP's, they will be utilized in standard activities but are not generally included in the permit application. Operators will routinely travel pipeline routes looking for leaks but will also be required to perform inspections on a set basis, typically weekly.

62) *LQD (1/09) - Section OP 2.9.1 Pipelines, Fittings, Valves, and Tanks. What will be considered a significant change in flow rate or pressure to activate the alarm? Which will actually be monitored – flow rates or pressures? (**AB**)*

LC ISR, LLC (10/09) - The minimum detectable leakage will typically depend on the area, the system and the location of the leak. For example:

LCI is planning on installing wellhead leak detection inside the wellhead covers. This detection system will typically use simple circuit completion as the tool to alarm in the event of a leak. In this case, anything from a drip to a small leak will be detectable if it will "puddle" water.

LCI is also planning on installing sumps in the wellfield header houses. The sump pumps will provide notification to the main system when they become operational. Again, if the leak is large enough to generate two or more gallons, the alarm should initiate. This will alarm and contain all leaks within the header houses. In the case of a catastrophic type failure within the header house, the sump pump will not be able to keep up and a high level shut down point will be reached. At that time, the injection and production line control valves will shut and the pumps associated with that motor control center will shut down.

Leaks between the header house and the wellhead are the hardest to detect and at the same time the rarest. There are typically no fittings outside the header house or the wellhead cover, only High Density PolyEthylene (HDPE) pipe. Typical failures occur at connections or fusion joints. The flow rates and pressures for injection and production wells will normally be monitored and compared against themselves through the main system. This is

what is normally referred to as differential flow and pressure analysis. An upset will usually be defined in the 10% to 25% range and generate an alarm for the operator's attention. It is percentage based, so the individual alarm status will depend on the flow and pressure input/output.

As with all leak detection systems, they are augmented by a strong operations and field presence with routine checks on pipelines, wellheads and other production components.

LQD (11/09) - Response not acceptable. Section OP 3.6.1describes the alarm systems that will be utilized. Paragraph 4 states that "During mine operations, injection pressures shall not exceed the MIT pressures, yet the MIT pressures are to be 120-125% of the injection pressure. This statement needs to be corrected to state that the pressure will not be within 80% of the MIT pressure. In addition, a formal inspection program of the leak detection alarm system should be outlined in the permit application. The program should commit to a frequency level of formal documented inspection with a checklist and which personnel will be responsible for the inspections should be specified. (AB)

LC ISR, LLC (2/10) - The discussion of MIT pressures in the fourth paragraph in Section OP 3.6.1 has been revised. Please see Response to Comment V5, OP#57 for development of a formal inspection program.

63) *LQD (1/09) - Section OP 2.9.3 Buildings. Header house and pumphouse details should be presented which indicate the inclusion of a sump and fluid detection sensors. **(AB)***

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#60.

LQD (11/09) - Response not acceptable. The response to OP#60 details the leak detection alarm system with discussions on Leak Detection, System Integrity, Tolerance Limits, Oversight and Redundancy. This detailed information should be included in Section OP3.6 of the Operating Plan. (AB)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 3.6.1.1, as requested.

64) *LQD (1/09) - Section OP 2.9.3 Buildings: The height of the concrete curbing, the capacity and location of the sumps in the buildings, and the sloped curb at the overhead doors should all be described in greater detail. What will the storage capacity be of the building acting as a secondary containment should there be a leak, spill, or tank failure. i.e. how many tank failures can the storage capacity accommodate? **(AB)***

LC ISR, LLC (10/09) - The Plant design incorporates concrete berms designed to contain a spill of one or more vessels. The largest tanks in the plant are approximately 21,000 gallons each and the total berm containment volume is approximately 163,000 gallons. The berms will also contain waste fluid released if either the piping or the transfer pumps were to fail. All the systems will use instrumentation in the form of level indication and pump operation indication to support leak detection. The volume of containment in each of the main areas of the Plant is:

Precipitation Room:
Area of precipitation room: 39 ft x 178.5 ft ≈ 6961 ft^2
Area taken up by tanks/filter presses/pumps/ramps: ≈700 ft^2
Total useable area: 6961 ft – 700 ft = 6261 ft^2
Volume of sloping foundation: (0.5) x (6261 ft^2) x (.396 ft) ≈1240 ft^3
Minimum height of berm: 0.5 ft
Volume of bermed area: 0.5 ft x 6261 ft^2 ≈3130 ft^3
Volume of sumps (2 at 18 ft^3 each) = 36 ft^3
Total containment volume: 3130 ft^3 + 1240 ft^3 + 36 ft^3 = 4406 ft^3 or ≈ 33,000 gallons

Chemical Room:
Area of chemical room: 39 ft x 77 ft ≈ 3003 ft^2
Area taken up by tanks/pumps/berms: ≈ 1075 ft^2
Total useable area: 3003 ft – 1075 ft = 1928 ft^2
Volume of sloping foundation: (0.5) x (1928 ft^2) x (.396 ft) ≈ 382 ft^3
Minimum height of berm: 1 ft
Volume of bermed area: 1 ft x 1928 ft^2 = 1928 ft^3
Volume of sumps (2 at 9.5 ft^3 each) = 19 ft^3
Total containment volume: 1928 ft^3 + 382 ft^3 + 19 ft^3 = 2329 ft^3 or ≈ 17,400 gallons

MAINTENANCE/FUTURE DRYER/AREA:
Area of interest: 39 ft x 178.5 ft ≈ 6961 ft^2
Area taken up by tanks/pumps/berms: ≈ 1030 ft^2
Total useable area: 3003 ft – 1075 ft = 5931 ft^2
Volume of sloping foundation: (0.5) x (5931 ft^2) x (.396 ft) ≈ 1175 ft^3
Minimum height of berm: 0.5 ft
Volume of bermed area: 0.5 ft x 5931 ft^2 = 2966 ft^3
Volume of sumps (3 at 9.5 ft^3 each) = 28.5 ft^3
Total containment volume: 2966 ft^3 + 1175 ft^3 + 28.5 ft^3 ≈ 4170 ft^3 or 31,200 gallons.

Ion Exchange / Elution / Restoration:
Area of interest: ≈ 18563 ft^2
Area taken up by tanks/pumps/berms: ≈ 2927 ft^2
Total useable area: 18563 ft – 2927 ft = 15636 ft^2
Volume of sloping foundation: (0.5) x (15636 ft^2) x (.396 ft) ≈ 3096 ft^3

Minimum height of berm: 0.5 ft
Volume of bermed area: 0.5 ft x 15636 ft^2 = 7818 ft^3
Volume of sumps (2 at 9.5 ft^3 each) = 19 ft^3
Total containment volume: 3096 ft^3 + 7818 ft^3 + 19 ft^3 ≈ 10,933 ft^3 or 81,780 gallons

TOTAL STORAGE VOLUME OF BERMS = 21,838 ft^3 or ≈ 163,350 gallons

LQD (11/09) - Response not acceptable. This information should be presented in Section OP 2.9.3 of the Operations Plan. (AB)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 2.9.3 (Buildings), as requested.

65) *LQD (1/09) - Section OP 2.9.4, Storage Ponds, Page OP-16: In the first paragraph of this section it is stated that pond capacity will be designed to accommodate two weeks of plant operation. However, the sixth paragraph of this section (on Page OP-17) states that the ponds will be kept full at all times to maintain the integrity of the liner (due to exposure of the elements including UV from sunlight). It appears, then, that at any given time the pond will actually have no capacity if it is full all the time. Please explain. Additionally, actual pond design plans must be provided. The schematic view of the ponds provided in Plate OP-1 are not sufficient. (**MLB**)*

LC ISR, LLC (10/09) - The discussion of the ponds being kept full is misleading as the permit states that "water will be kept in the ponds at all times" to "reduce" (not prevent) liner exposure to sun, wind, and freezing temperatures. LC ISR, LLC's primary intent is to maintain a small amount of water in the bottom of the ponds to insure the liner stays in place during elevated winds. The depth of fluid is expected to be no more than one foot. The normal use of the storage ponds will be for waste water holding during a "Falloff Test" of a disposal well. Pond use will only be required if the remaining wells will be used to their capacity. The response to Volume 5, Comment # 9 discusses in detail the specifications for the storage ponds as well as the construction drawings and supporting engineering information.

LQD (11/09) - Response not acceptable. The text is still misleading. The text in Section 2.9.4 should be revised to indicate LC's response and that sufficient capacity will be maintained in each pond to accommodate two weeks of production while maintaining adequate freeboard. Please revise the text accordingly. (BRW for MLB)

LC ISR, LLC (2/10) - Each of the two pond's freeboard levels are designed to handle two weeks of waste fluid storage at 60 gallons per minute. In the event of a pond failure during this maximum storage period, the freeboard of one pond will hold the contents of the other

pond. Thus, sufficient capacity is built into each pond to accommodate two weeks of waste fluid storage at 60 gallons per minute.

66) LQD (1/09) - *Section OP 2.9.4 Storage Ponds: The ponds are said to be designed to store two weeks of plant operations at a rate of 60 gpm, yet according to the water balance on Figure OP-5c, the maximum capacity should be based on 115 gpm of flow during maximum operations. (**AB**)*

LC ISR, LLC (10/09) - The water balance (Figures OP-5a–5f) details the anticipated normal operating scenarios at the Lost Creek Project. Testing or a failure of a disposal well when operating at maximum capacity would not be considered a normal scenario. During this case, non-essential activities would be reduced, all other disposal wells would be brought up to full injection capacity and only mandatory flows to disposal would be maintained. In the case of Figure OP-5c, these might include:

- A temporary shutoff of low production wells not necessary to maintain wellfield balance;
- A reduction in groundwater sweep flow while still maintaining a cone of depression, and
- A reduction in reverse osmosis flow and treatment while still maintaining restoration balance.

This reduction is estimated to be as much as 55 gpm, yielding a maximum flow to the storage ponds of 60 gpm. The pond design is for redundant capacity to allow 4 feet of storage in one pond with the other on standby.

LQD (11/09) - Response not acceptable. Please incorporate the information presented in the response into Section OP 2.9.4 of the Operations Plan. (AB)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 2.9.4 (Storage Ponds), as requested.

71) LQD (1/09) - *Plate OP-1, Plant Site Plan: This plate must be upgraded to an actual design including a conventional scale (the current scale is 1" = 16') and the location of the Plant Site must be depicted on a topographic map with township, range, and section lines as well as roads and other pertinent landmarks. (**MLB**)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#4.

LQD (11/09) - Response not acceptable. LC has provided revised plates to address the items outlined in the comment. However, the contour labeling on Plate OP-2 is incorrect. Please revise and resubmit Plate OP-2. (BRW for MLB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#4.

72) *LQD (1/09) - Section OP 2.9.2, Fuel Storage Area: More detail is needed in this section. Specifically, secondary containment must be addressed and explained. Additionally, the weekly inspection criteria should be stated here. If an inspection checklist is to be used, the items on the checklist should also be listed. (**MLB**)*

LC ISR, LLC (10/09) - Fuel storage at the site will consist of an above ground gasoline tank with a maximum volume of 5,000 gallons and an above ground diesel tank with a maximum size of 5,000 gallons (Plate OP-2). The tanks will be within a lined spill containment system sized to contain at least 110% of one of the largest tank. A Spill Prevention Control and Countermeasure Plan is required and will be in place before the tanks are placed into service. The tanks and the containment area will be checked at least weekly for vessel, piping and containment integrity as well as indications of leaks or spills. All are planned to be documented as part of the routine inspection process.

LQD (11/09) - Response not acceptable. Section OP 2.9.5, Fuel Storage Areas, needs to be revised to include the information outlined in the above response. (MLB)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 2.9.5 (Fuel Storage Areas), as requested. However, commitment to the Spill Prevention Control and Countermeasure Plan has been removed since the EPA regulations in 40 CFR 112 do not apply to a closed basin like the Great Divide and because WDEQ has not implemented state regulations pertaining to Spill Prevention Control and Countermeasure Plans. Nonetheless, the commitments for the design and routine inspection of the fuel storage facility stand.

74) *LQD (1/09) - Section OP 2.10, Air Monitoring: Please indicate the source and quantity of water expected to be used for dust suppression, potable water supply, etc. for the proposed mine activity. (**BRW**)*

LC ISR, LLC (10/09) -

Dust Suppression:
The Air Quality Permit submitted to WDEQ-AQD addresses dust suppression and/or the use of a chemical suppressant such as magnesium chloride (Attachment OP-1). The need for dust suppression will be highly variable dependant on weather conditions, moisture content in the soil/roadbase, drilling density and construction activities. It is anticipated that some water will be used for dust suppression during the late summer months. The normal anticipated volume during a calendar year is estimated at 8 to 80 barrel water trucks per suppression event and 4 suppression events per year. The total usage is estimated at 110,000

gallons per year or 300 gallons per day. The source for the water supply is planned to be one of the permitted water supply wells within the Permit Area.

Potable Water:
For the Lost Creek Project, potable water is defined as that which will be used for drinking, handwashing or showering. That volume is estimated at 250 gallons per day. The supply will typically be from the water well installed adjacent to the Plant (well LC229W).

Non-Potable Water:
1. Toilets/Urinals: is estimated at 270 gallons per day and the supply will be from the Plant water well.
2. Plant Use: will consist of water for process and wash water. That amount is estimated at 10 gallons per minute or 14,400 gallons per day and will come from the Plant water well or treated water from the production stream as is appropriate.
3. Drill Water: LCI estimates it will use 10 drill rigs per week day during the drilling phase of the project. Each drill rig will typically use 150 to 200 barrels of water per day while drilling. Estimated drill rig productivity is four days per week for 50 weeks per year. Therefore, the total estimated drill water usage is 34,500 gallons per day. Supply will normally come from any/all of the permitted water supply wells on the Lost Creek Permit Area.

LQD (11/09) - **Response not acceptable. None of the information provided above has been incorporated into the permit application. Additionally, there is no indication as to what formation the well(s) will be completed in. Please provide. (BRW)**

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 2.11.2, as requested, along with information on the horizons in which the wells are completed.

76) LQD (1/09) - Section OP 2.11.2 Off-Site Wells. The BLM stock wells are said to be analyzed quarterly at a minimum for natural uranium and radium-226, yet if the mine operations are going to impact these off-site wells there are other parameters that would be early detectors of a problem that should be analyzed. Quarterly analysis should also include Cl, sulfate, bicarb, TDS, and pH. If these elements are showing trends, then action will be required, similar to the monitoring well ring. Please revise the text accordingly. (**AB**)

LC ISR, LLC (10/09) - The commitment to sample operational BLM stock wells near the Permit Area was made in order to comply with NRC Regulatory Guide 4.14 Table 2 and is not intended to satisfy any WDEQ requirements. The commitment was placed in the state permit to mine application to maintain consistency across the agencies. The monitor well system surrounding each respective mine unit is the sole detection system for excursions. The stock wells near the permit area (within 2 kilometers of an active wellfield pursuant to the standard interpretation of Regulatory Guide 4.14) will be so far from active mining that

it is not reasonable to expect an undetected excursion to reach the wells within the life of the project; especially given a natural groundwater flow rate of approximately 4 feet per year. Therefore, the analyte list presented in OP 2.11.2 will be maintained to comply with NRC requirements.

LQD (11/09) - Response partially acceptable. Please add water level to the list of monitoring parameters. (MM for AB)

LC ISR, LLC (2/10) - Section OP 2.11.2 has been revised to include a commitment to collect water level information for each sampling event of an off-site well. However, a water level reading will only be collected if the wellhead design allows. For example, some of the wellheads on the BLM wells in the Great Divide Basin preclude the use of e-lines or sounders without disassembling the wellhead, which may be in poor condition.

77) *LQD (1/09) - Section OP 2.11.2 Off-Site Wells Section OP 3.6.4.1 Mine Unit Baseline Water Quality and Upper Control Limits. These sections reference Lost Creek's Environmental Manual, and states that it discusses the sampling protocols. What is and where is this document? Sampling protocols need to be outlined in the permit document, as stated in Comment 28 from my August 26, 2008 comments on Appendix D-5 and D-6. (**AB**)*

LC ISR, LLC (10/09) - The Lost Creek Water Well Sampling Procedure is attached as Attachment OP-8.

LQD (11/09) - Response not acceptable. Attachment OP-8 is a welcome addition to the application. Please include a Table which lists the monitoring wells, grouped by category, and includes their screened interval, which formation is being monitored, and the frequency and constituents to be monitored. In addition, please address Chain of Custody procedures and the disposal of purged water on the ground. If the monitoring well is impacted in any way the purge water may need to be disposed in either the storage ponds or deeper injection wells. Section III, Part C-iii, the text stating that if a parameter is below detection limit during the initial round of sampling that no additional analysis will be performed during quarterly sampling is unacceptable and should be removed from the text. Section IV, note 1 in both tables should be revised to indicate water level as a field parameter. Section 5, Part E should indicate that all sampling will follow the preservation and holding time procedures as outlined in Methods for Chemical Analysis of Water and Wastes, USEPA, 1983. Section VII regarding the use of compositing is not acceptable for several reasons, which include the fact that compositing tends to mask the presence of analytes at low levels and it will be impossible to detect if there are only parts of the wellfield are problematic. See also the text in Section RP 2.4. (AB and BRW)

LC ISR, LLC (2/10) -

- Generic sampling frequencies for each type of operational monitor well are provided in Section IV of the Lost Creek Water Well Sampling Procedure. Tables and completion reports which list the specific monitor wells, grouped by category, and includes their screened interval, which formation is being monitored, and the constituents to be monitored have been included with the MU1 data package submitted December 21, 2009. These types of tables and reports will be included with each successive mine unit data package. LC ISR, LLC believes that providing this information in these data packages will eliminate the need to update a monitor well table included in the Lost Creek Water Well Sampling Procedure which would require a permit amendment each time a new mine unit is proposed. Please also see Section OP 2.11.1 as well as the Response to Comment V5, OP#89.The requested information for these wells has been previously provided in the main permit document in Attachment D6-3 and Section D6.4.2.2.

- A discussion about the use of a Chain of Custody form has been added to Section VI of the Lost Creek Water Well Sampling Procedure.

- A discussion about the disposal of affected well purge water has been added to Section V(C) of the Lost Creek Water Well Sampling Procedure.

- The text stating that if a parameter is below detection limit during the initial round of sampling then no additional analysis of that parameter will be performed during quarterly sampling in Section III(C) (iii) has been removed from the text.

- In Section IV of the Lost Creek Water Well Sampling Procedure, note 1 of both tables has been revised to include water level as a field parameter.

- Section V (E) of the Lost Creek Water Well Sampling Procedure has been revised to indicate that all sampling will follow the preservation and holding time procedures as outlined in Methods for Chemical Analysis of Water and Wastes, USEPA, 1983.

- Please see LC ISR, LLC's response to Comment RP-7, which contains a discussion on the use of composite samples.

Additional revisions to the Lost Creek Water Well Sampling Procedure were made to match the text in the main permit document. The revisions include the following:

- The first sentence of the first paragraph of Section III(C) (iii) was changed to "During restoration the perimeter and underlying and overlying monitor wells will

continue to be sampled at least twice per month, and no less than ten days apart, for UCL parameters". Also, the second sentence was deleted.

- The second and third sentences of the second paragraph of Section III(C) (iii) were changed to "Each production monitor well will be sampled at the beginning of stabilization and once per quarter for a period of 12 months and analyzed for Guideline 8 parameters. This will yield a total of 5 sample rounds".

- The last sentence of the second paragraph of Section III(C) (iii) was changed to "The monitor ring, overlying, and underlying monitor wells will be sampled for the UCL parameters once every two months throughout stabilization". Also, the following sentence was added to the end of the second paragraph "If an excursion occurs during stabilization, then the sampling will revert to weekly for the affected monitor well until the excursion is resolved".
- In Table C, the text was changed in the Wellfield row under the Frequency column to match the text in Section III(C) (iii).

78) *LQD (1/09) - Section OP 3.2, Mine Unit Design: LQD Chapter 11, Section 6(d), states that casing requirements must be specified to prevent casing collapse during installation; convey liquid at the predicted injection / recovery rate and pressure; and allow for sampling. (**AB**)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#90.

LQD (11/09) - Response not acceptable. The information detailed in the response to OP Comment #90 should be incorporated into Section OP3.3 of the application. (AB)

LC ISR, LLC (2/10) - Section OP 3.3 has been revised to include the response.

80) *LQD (1/09) - Figures OP-8a, 8b, and 8c. How far is the sand trap and base of the well bore expected to extend into the lower aquitard? With the Sage Brush shale pinching out to five feet in some locations, this aquitard should not be intersected if its integrity could be questioned. (**AB**)*

LC ISR, LLC (10/09) - The typical screen and trap assembly is less than three feet in length. Figures OP-8a, 8b and 8c depict worse case scenarios where the desired screen interval is immediately above the underlying aquitard. This is typically not the case. Every effort will be made to insure production and injection well assemblies do not penetrate through the lower aquitard. In the unlikely event that the wellbore penetrates the lower aquitard into the underlying zone, the penetrating portion of the wellbore will typically be plugged with the appropriate sealing material (grout or cement). In addition, the wellbore is typically resealed

during the casing and cementing phase as the cement is pumped down the casing and up the annulus.

Also, because baseline water quality and water levels are obtained in the underlying sand prior to operational activities, injection or production from the underlying sand would typically be seen in the nearest underlying monitor well. This would typically be seen first in the water level changes and second in water chemistry.

LQD (11/09) - Response not acceptable. In areas where the Sage Brush Shale is thin, there should be a commitment not to place the screened interval directly above the aquitard, or to penetrate the aquitard risking the integrity of the confining layer. Please add language to the permit document which provides these assurances that the lower aquitard will not be compromised. (AB)

LC ISR, LLC (2/10) - LC ISR, LLC (2/10) - Section OP 3.3 has been revised to address this concern.

82) *LQD (1/09) - Section OP 3.2 Mine Unit Design. Mine Unit 1's monitoring wells will require at least four sampling events to establish the upper control limits for the indicator constituents. The process to develop the UCL's, the number and spacing of the samples required should be outlined in the Operations Plan. **(AB)***

LC ISR, LLC (10/09) - Please see OP Section 3.6.4.1

LQD (11/09) - Response not acceptable. Well spacing will be submitted as part of the first wellfield package. Four rounds of sampling at 14 day intervals and establishing the UCL's as the mean plus five standard deviations is presented. This is consistent with Guideline 4. However, text concerning an evaluation of the data collected to determine outliers, etc. has not been included. Please revise the text to indicate that the procedure for establishing UCL's will follow the outline in Attachment I of LQD Guideline 4 (rev. 3/2000) prior to the last sentence in Section 3.6.4.1. (BRW for AB)

LC ISR, LLC (2/10) - The procedures for evaluating outliers and calculating UCLS, in accordance with WDEQ-LQD Guideline 4, have been incorporated into Section OP 3.6.4.1.

84) *LQD (1/09) - Section OP 3.2 Mine Unit Design. The last paragraph of this section states that the operator has made an effort to properly abandon historic drill holes or wells. As noted earlier regarding Section D5.2.4 Historic Uranium Exploration Activities, all historic drill holes must be located and a determination made if they were properly abandoned. If they were not, then they must be re-entered and grouted from the bottom up to the surface. All of this effort must be clearly documented in the permit, on a hole by hole basis. **(AB)***

LC ISR, LLC (10/09) - Pursuant to discussions during the June 22, 2009 meeting in Casper between WDEQ and LC ISR, LLC, the letter from Don McKenzie to the Wyoming Mining Association dated February 25, 2009 will serve as the guidance document with regard to re-abandonment of historic holes. Item 1 of this memo states, *"Re-entering and re-plugging old drill holes within a proposed mine unit boundary area is not warranted unless there is evidence of poor plugging practices determined either through record review or pump tests results."* In order to satisfy this requirement two separate issues must be satisfactorily addressed: a record review and a pump test.

LC ISR, LLC has submitted to WDEQ-LQD all records in its possession with regard to historic abandonment of holes and wells at the Lost Creek Project. Included within the records is a Notice of Violation issued to Texasgulf on May 20, 1982 for improper hole abandonment and surface capping as well as memos from Texasgulf to WDEQ-LQD describing their corrective actions. The Texasgulf memos describe the depth to water and drill mud in each hole they could locate. Although the specific details of the corrective actions are unknown, it appears that WDEQ-LQD and Texasgulf agreed to re-abandon all holes where the mud depth was greater than about 200 feet below the water surface. A review of these memos reveals that Texasgulf attempted to locate and collect subsurface data on a total of 261 historic holes. This number does not include holes where a surface cap was replaced but no subsurface data is provided in the historical record. Of these 261 holes, 230 (88%) were located. Of the 230 located, a total of 16 were re-plugged with grout because the grout level was greater than about 200 feet below the water surface. The above statistics are based only on those holes for which we have complete and reliable records. Texasgulf also installed new surface caps on a large group of holes. WDEQ-LQD subsequently approved the corrective work and released the bond for the entire project. Based on WDEQ-LQD approval, one could conclude that the record clearly demonstrates the historic holes were abandoned using acceptable plugging practices and further effort is not warranted.

Additional efforts to relocate historic holes will likely meet with limited success. The historic holes in question were mostly drilled between 1968 and 1980. After 29 to 41 years of vegetation growth and additional drilling disturbance, only a portion of the holes are locatable. Today it is rare to find the wooden markers placed so many decades ago. Any attempt to relocate the historic holes will result in considerable surface disturbance will little to no benefit.

Pump tests performed to date, including the 2008 Mine Unit One pump test, reveal that there is minor communication between the overlying and underlying aquifers and the HJ Horizon. The drawdown in the overlying and underlying aquifers is on the order of one magnitude or less than the drawdown in the HJ Horizon The majority of hydrologic communication is likely through the displacement of the Lost Creek Fault and not through improperly

abandoned drill holes. LC ISR will employ engineering controls to prevent migration of mining solution through the fault and into a USDW.

The historical record suggests the holes were properly abandoned by the original operator pursuant to regulations that were in place at that time. LC ISR, LLC believes WDEQ-LQD, as the agency with regulatory authority over uranium exploration, should have enforced existing regulations and required the grout column to extend above the water table. If WDEQ-LQD approved improper hole abandonment, the WDEQ-LQD is now transferring the liability onto a company with no responsibility, and in fact WDEQ-LQD's actions may jeopardize one of the state's uranium resources.

Today's WDEQ-LQD comments suggest improper oversight by WDEQ-LQD in the past. LC ISR, LLC understands WDEQ-LQD's request for the holes to be re-abandoned and hereby proposes the following path forward. This proposal is intended to provide a framework for this situation, which will undoubtedly be encountered at this and other sites as uranium resources are developed in the future. LC ISR will agree to re-abandon and re-surface cap all historic holes within pattern areas that have not already been re-abandoned by a previous operator or by LC ISR, LLC and which may impact LC ISR, LLC's operations in a given mine unit, based on pumping test results for that mine unit. For other historic holes, LC ISR, LLC will agree to re-abandon and re-surface cap all historic holes within pattern areas that have not already been re-abandoned by a previous operator or by LC ISR, LLC; however, WDEQ-LQD must take on the responsibility of locating each of the holes and either perform surface reclamation or advance funds for LC ISR, LLC to conduct surface reclamation. WDEQ-LQD and BLM must agree in writing that LC ISR, LLC takes on no liability, financial or otherwise, for the re-abandonment and associated work. Nor shall LC ISR, LLC have to bond for the work since it is being performed largely for the benefit of the state and BLM.

WDEQ-LQD will have the following responsibilities and absorb the associated costs:

- Locate the holes based on historic survey records before November 30, 2009.
- Either perform surface reclamation at the appropriate season or reimburse LC ISR, LLC to perform the surface reclamation work. Surface reclamation includes leveling of the site and reseeding with an approved mixture of native seed.

LC ISR, LLC will perform the following tasks and absorb the associated costs:

- Provide WDEQ-LQD with a backhoe and one backhoe operator for a total of 40 hours at no charge for the purpose of locating the holes. Any use of the backhoe and operator above 40 hours will be charged at a rate of $75/hour;
- Excavate the surface cap;
- Enter the hole with HDPE tremmie and go as deep as possible without drilling or washing out the hole.
- Tremmie grout into the hole until the hole is filled to surface;

- Return to the hole no sooner than two days later and top the hole off to approximately 17 feet below ground surface;
- Dump two bags of bentonite chips into the hole;
- Dump one bag of cement or concrete into the hole;
- Backfill the final two feet of hole with native vegetation;
- Mark the hole with a piece of HDPE pipe with a metal name plate.

WDEQ-LQD must agree that its inability to locate all holes will not result in the denial of the permit to mine or subsequent mine unit packages.

The commenter states that the re-abandonment effort must be documented in the permit on a hole by hole basis. This request is unreasonable since the work will take place over a number of years as additional mine units are brought into production and the permit will have to be revised accordingly. LC ISR, LLC proposes that the information regarding re-abandonment efforts be documented in the annual reports.

LQD (11/09) - **Response not acceptable. Drilling currently taking place in the Battle Springs formation has illustrated the problem with plug gel loss down the hole. The plug gel will fall 100-300 feet, often exposing the water table. If past practices were to inject plug gel to the surface and cap the hole then there is no documentation of the plug gel falling back down the hole. The Tg NOV provides some documentation that historically the holes were left in various stages of abandonment. It can be stated with fair certainty that many of the historic drill holes are open more than a hundred feet below any surface cap, and many of them most likely are in at least the first water table. Ur Energy has made an effort to locate these holes, without much success (only finding 2 out of 20 which were searched). The DEQ will make an independent effort to locate the holes within the first mine unit, with the commitment by Lost Creek to plug them if we find them. (AB)**

LC ISR, LLC (2/10) - LC ISR, LLC appreciates the WDEQ-LQD's willingness to assist with this issue. It is important that work on this project begin during the spring of 2010 so the holes can be plugged in a timely manner that does not impact the operations schedule. We look forward to discussing this schedule with you in the coming weeks.

87) *LQD (1/09) - Section 3.2.2 Monitor Well Locations. Section OP 3.6.3.3 states that mining of the overlying FG and underlying KM sands is anticipated in the future. Baseline conditions for the aquifer underlying the KM sands, should be conducted prior to any mining at the site. Regional monitoring wells of this lower aquifer will need to be installed prior to mining the HJ horizon. (AB)*

LC ISR, LLC (10/09) - This permit application specifically addresses mining within the HJ Sand. Therefore, characterization of all aquifers potentially impacted by operations have been characterized (DE, FG, HJ, and KM). It is not necessary to characterize a deeper aquifer that will not be impacted by mining performed under this permit application. If in the future LC ISR, LLC desires to recover mineral from the KM Horizon then the underlying horizon will be characterized.

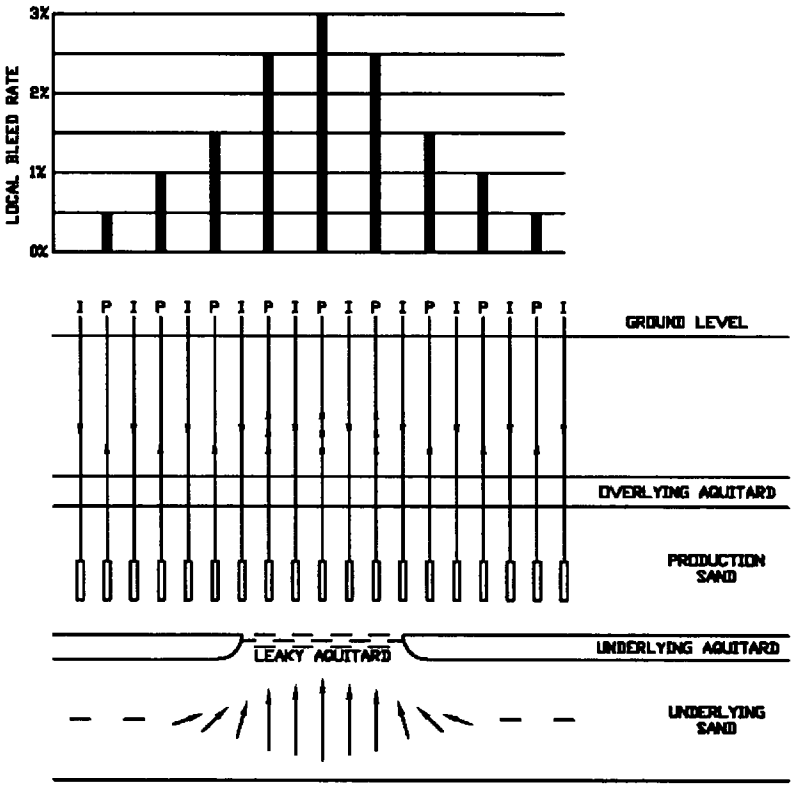
LQD (11/09) - Response not acceptable. Section OP 3.6.3.3 still states that the "LC ISR LLC will apply for a permit revision to conduct ISR in the overlying FG and underlying KM sands" If is know that these units will be mined, then appropriate baseline studies must be conducted prior to any mining, which would likely result in disruption of the baseline conditions. If mining in these units is not anticipated, then the statement in Section OP 3.6.3.3 should be dropped. (AB and MM)

LC ISR, LLC (2/10) - The reference to mining in other sands has been removed from Section OP 3.6.3.3.

88) *LQD (1/09) - Section OP 3.2.2.4 Overyling and Underlying Monitor Wells: Paragraph 2 states that operational controls, such as higher production rates may be used to control fluid migration when vertical confining layers are thin or absent. How would higher production rates control fluid migration? Would a higher bleed rate be required? How would a higher bleed rate affect the water balance and facility capacity projections. (**AB**)*

LC ISR, LLC (10/09) - Section OP 3.2.2.4 discusses the use of "higher production rates" as one operating scenario to control fluid through a thin or leaky aquitard. In essence, higher localized production rates without increasing injection rates provides a more focused bleed rate and therefore greater localized control of production and injection fluids.

A higher overall bleed rate is not required as the overall bleed will typically remain the same, therefore the water balance would not change. An example of localized higher production rates is shown below:



LQD (11/09) - Response not acceptable. Please include this added discussion and diagram to Section OP 3.2.2.4 of the permit application. (AB)

LC ISR, LLC (2/10) - Per the LQD request, the text has been incorporated into Section OP 3.2.2.4 (Overlying and Underlying Monitor Wells), and the figure has been incorporated as Figure OP-9.

89) *LQD (1/09) - Section OP 3.2.2.4, Overlying and Underlying Monitoring Wells: Given the discussion that ensued in the September 22, 2008 meeting at the LQD Lander office among your staff and LQD staff regarding Ms. Boyle's preliminary technical comments, the third paragraph of this section may need to be reevaluated/reworded. The third paragraph of this section discusses the shallowest water table at the site. Specifically, LQD staff understands that in Fall 2008 Lost Creek ISR installed several new monitoring wells closer to the extents of the permit boundary in order to generate a potentiometric surface across the entire*

*permit boundary. Some wells were installed at a relatively shallow depth of approximately 50 feet below ground surface (bgs) in order to assess the presence/absence of an aquifer at that depth. The results of the Fall 2008 well installation activities are not reflected in the version of the application reviewed here. This reviewer requests that Lost Creek ISR provide documentation regarding the presence/absence of water at depths shallower than 150' bgs in Section OP 3.2.2.4. Some of your staff may recall that during the summer 2006 drilling, one of Lost Creek ISR's field staff (Dawn Schippe) contacted Ms. Bautz at the LQD Lander office via telephone explaining that a shallow (potential) aquifer had been encountered during drilling at approximately 50' bgs. (**MLB**)*

LC ISR, LLC (10/09) - The ten new monitor wells installed in 2008 were completed in various horizons to provide additional pieziometric and water quality data. The shallowest water level in any of the wells was at 123 feet in Well MB-07 which is completed in the DE sand; the uppermost aquifer. Section OP 3.2.2.4 was revised to reflect the most up to date information.

The installation of over 80 monitor wells to date has not shown the presence of any perched water tables. Ms. Dawn Schippe was contacted to determine the nature of the conversation with Ms. Bautz which is referenced in the comment. Ms. Schippe had maintained her field notes from the conversation in question and they are attached to this response for review. The following two paragraphs from Ms. Schippe describe the events in question.

> *On Thursday, August 17, 2006, monitor well LC29M was airlifted to evaluate if there is any water in the targeted completion formation (the DE sand/the anticipated shallowest aquifer on site). The pilot hole on this well was 171 feet deep. The driller tripped in his drill pipe to the bottom of the hole and turned on his air compressor to force all of the drilling mud and any water the formation produced to the surface. After the drilling mud had been evacuated, the well produced approximately ¼ gallon per minute. Due to the extremely low flow rate of the DE sand based on the airlifting of LC29M from a depth of approximately 171', Dawn Schippe (Lost Creek ISR's field staff) contacted Ms. Melissa Bautz at the WDEQ-LQD office in Lander to advise her of the situation. Ms. Bautz indicated that a yield of ¼ gallon per minute is sometimes sufficient for watering cattle, therefore the DE sand is indeed an aquifer. Ms. Bautz re-emphasized the need for LC ISR to install the three agreed-upon monitoring wells in the DE sand, which Ms. Schippe promised to do. Subsequently, LC29M had slotted casing and a gravel pack installed from 140-164' (the target sand completion interval) with the rat hole from 164-171' filled in with drill cuttings as this depth was dominated by a non-water-bearing lithology. Also, LC30M and LC31M, the two remaining DE sand wells, were installed at other locations across the property.*

Ms. Schippe also took photographs and a video of the airlifted yield of LC29M, which she believes she emailed to Ms. Bautz. These photos and video are available to WDEQ-LQD. However, the water was coming from a depth of approximately 164 ft bgs, not 50 ft bgs, as casing was later cemented in place from surface to 140 ft bgs at this location with no change in the yield. Therefore, this water could not have come from 50 ft bgs.

LQD (11/09) - Response not acceptable. The text has been revised to reflect the findings LC's exploratory and monitoring well drilling efforts. However, the text indicating that no monitoring will be performed at that level (the DE Sand) is unacceptable. Text in Section 3.6.3.3 indicates that the FG Sand is being considered for mining in the future and that a revised mine plan will be submitted to accommodate such. Thus, not only from an aquifer protection standpoint during the existing proposed mining, but also from a point of establishing baseline for future mining it is imperative that monitoring of the DE Sand be performed. Please revise the text accordingly. (BRW for MLB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#87. Pursuant to discussion during the January 11, 2010 meeting between LQD and LC ISR LLC, all monitor wells completed within the DE horizon in unrestored wellfields will be sampled quarterly and analyzed for pH, conductivity, and chloride. These parameters were selected because they are reliable indicators of mining lixiviant. The text in OP 3.2.2.4 and Attachment OP-8 "Groundwater Monitoring Plan" was revised to reflect this commitment.

90) *LQD (1/09) - Section OP3.3 Well Completion: The burst pressure and collapse pressure of the SDR 17 pipe to be used is presented. Please also provide information on the pressures to be experienced with the well depths in the ore zone, i.e. at what depth and/or pressures will the SDR 17 be unsuitable for use. (**AB**)*

LC ISR, LLC (10/09) - The HJ Production Zone is approximately 425 feet below surface while the static water level for the same formation is approximately 175 feet below surface. A typical casing will be CertainTeed's spline-locking standard dimension ratio (SDR) 17 PVC well casing, which has a nominal 4.5 inch diameter, 0.291 inch minimum wall thickness, and is rated for 160 pounds per square inch (psi) burst pressure and 224 psi collapse pressure.

The maximum external pressure possible is represented by the calculation below. A rare example of this would be if the well were to pump dry with no recharge, especially given the hydrologic properties of the HJ sand unit.

External Pressure = (Depth of Casing – Depth to Water) x Weight of Fluid x 0.052
= (425 ft – 175 ft) x 8.33 lbs/gal x 0.052
= 108.3 psi which is less than the 224 psi collapse pressure

The maximum internal pressure or injection pressure will be governed by the fracture pressure, which is governed by the regional fracture gradient, or 0.7 psi/ft.

Injection Pressure= Depth to Injection Zone x (Fracture Gradient – Water Gradient)
= 425 ft x (0.7 psi/ft – 0.433 psi/ft)
= 113.5 psi which is less than the 160 psi burst pressure

The pressure ratings provided by the manufacturer are at ambient conditions without the benefit of cement supporting the casing or the lower temperatures typically seen subsurface at the Lost Creek Project. Experience at other ISR operations has shown that, using the proper weighting materials during cementing, PVC casing can be used at depths in excess of 1,000 feet below ground surface. In addition, each well must pass a mechanical integrity test prior to operation.

LQD (11/09) - **Response not acceptable. The burst pressure and collapse pressure values and calculation for the SDR17 pipe should be presented in the permit document. The reviewer does not necessarily agree with the calculations presented for external pressure. For example, Well LC24M is cased for 478 feet with a static water level of 204 feet. The grout used was Portland Cement and assuming a mixture of 1 sack per six gallons of water gives a unit weight of approximately 10.7 lbs/gal. So (478 feet x 10.7 x 0.052) – (274 x 8.34 x 0.052) = 266 – 119 = 147 psi net collapse pressure. While the estimated collapse pressure is less than the CertainTeed specification of 224 psi, the Factor of Safety (FOS) is estimated at approximately 1.5 which is less than the factory recommended FOS of 2.0. Please address the above. (BRW for AB)**

LC ISR, LLC (2/10) - LC ISR, LLC's engineers and well installation personnel understand that many variables can affect a successful well installation. Some of these include static water level, installation water level, grout density, chase fluid density, depth of casing and environmental conditions such as fluid temperatures. LC ISR, LLC also understands that the most critical time for mechanical integrity of the well typically occurs during installation, particularly during grouting. The time of highest risk occurs when either:

- the casing is full of grout and the annulus is full of drilling mud/formation water, (failure mode is burst), or
- the annulus is full of grout and the casing is full of chase fluid (failure mode is collapse).

LC ISR, LLC designs its well installations to minimize failure during these times.

LC ISR, LLC's design personnel are experienced in the design and installation of many PVC cased wells and have a deep understanding of the factors that can cause well failure.

The defining criteria for success of the installation is the passing of the mechanical integrity test. Regardless of safety factor, well design or installation practices, the each well must pass this test prior to its use.

The calculation provided as an example by the reviewer assumes that the static water level inside the casing is equal to the static formation water level. However, this is not the case because the water or "chase fluid" in the casing is used to push the cement into the annulus and maintain it there. Therefore, the casing is always full. The calculation should be:

(478 feet x 10.7 x 0.052) – (478 x 8.34 x 0.052) = 266 – 207 = 59 psi net collapse pressure

224/59 = 3.8 Factor of Safety for this application.

Regardless of the calculation, the well must still pass the MIT.

As for inclusion of the casing data in the permit application, LC ISR, LLC believes that this data should not be included as the manufacturer or the pressure ratings may routinely change during the course of the Project. However, the data will be available on site for review during inspection. .

92) *LQD (1/09) - Section OP 3.4 Well Integrity Testing: Paragraph 2 states that the pressure in the sealed casing is then increased to a specified test pressure. Please indicate what that test pressure will be, e.g. 125% of operating pressure (**AB**)*

LC ISR, LLC (10/09) - The mechanical integrity test (MIT) pressure is determined by the well properties and the type of well. As noted in Section OP 3.4, there are three types of wells that will be tested at the Lost Creek Project: monitor well; production well; and injection well. The following discusses the MIT tests for each:

Monitor Well – The purpose of an MIT on a monitor well is to insure casing integrity and that the samples received are only from the zone of interest; not from fluid leaking into the wellbore from other zones sealed off by the casing. Because a monitor well is only used for pumping fluid out of the well, no pressure is seen on the casing. Therefore, the MIT pressure cannot be based on the maximum operating pressure. Typically a representative MIT pressure will be chosen that will insure the well has mechanical integrity. Normally this pressure will be at least 50 pounds per square inch (psi) as measured at the wellhead.

Production Well – The purpose of an MIT on a production well is to insure casing integrity below the static and pumping fluid level and for potential future use as an injection well. Because a production well is used for pumping fluid out of the well, no pressure is seen on the casing other than that generated by the production fluid in the wellbore. Therefore, the MIT pressure cannot be based on the maximum operating pressure. However, during the

operational life of a wellfield, injection and production wells may be switched to modify production flow paths and increase overall recovery. Because of this, the production well MITs are performed at the same pressure as the injection wells within the same header house. That pressure is detailed in this response under "Injection Well".

Injection Well – The purpose of an MIT on an injection well is to insure casing integrity through the entire cased well. The MIT will typically be performed at 125% of the maximum injection pressure as dictated by the fracture gradient and the casing depth. An example is shown below:

MIT Pressure = *Casing Depth x (Fracture Gradient – Water Gradient) x 1.25*
= *425 ft x (0.7 psi/ft – 0.433 psi/ft) x 1.25*
= *142 psi*

LQD (11/09) - Response not acceptable. This information should be incorporated into Section OP 3.4 of the Permit document. (AB)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 3.4 (Well Integrity Testing), as requested.

93) *LQD (1/09) - Section OP 3.4, Well Integrity Testing: should describe protocols for investigating, evaluating and tracking MIT failures and also determining the impacts of the casing failure and any resulting leakage from the well. (MM)*

LC ISR, LLC (10/09) - As with any operational or engineering activity, any abnormal or unexplained failures will be investigated. A variety of measures may be used during the investigation including subsequent tests at varying depths and pressures. In addition, a downhole camera may be used to support data obtained during the MIT(s). Also, typical to any investigation will be the correlation of materials, equipment, personnel and downhole conditions to the failure to determine if there is an ongoing problem. Any documentation associated with investigations will typically be kept in the well files and may be included as part of the Quarterly MIT Report to the WDEQ-LQD.

In the event of a casing failure on an operating well, investigations will typically include all of the above as well as a determination of the extent of the leakage. Once the areal/vertical extent of the release has been determined, a program of remediation will be reviewed with the WDEQ-LQD and appropriate measures determined for containment and/or recapture. Once approved, the remedial action will be initiated and reported in the Quarterly MIT Report to the WDEQ-LQD

LQD (11/09) - Response not acceptable. Please incorporate the comment response into the permit, eliminating words such as "may" and "typically" to make the commitments more definitive. LQD is also requesting that a tracking system be implemented so that

records of MIT failures are compiled and can be reviewed over time to determine if there are common elements or factors that contribute to the failures. (MM)

LC ISR, LLC (2/10) - The information has been edited and incorporated into Section OP 3.4 (Well Integrity Testing), as requested.

94) *LQD (1/09) - Section OP 3.5, Mine Unit Piping and Instrumentation: should clearly specify the instrumentation that will be installed for each well (i.e. each well, production and injection, will have a flow meter, a control valve and a pressure alarm installed). (MM)*

LC ISR, LLC (10/09) - Each injection well and production well will have what is known as a "meter run" inside its associated header house. The meter run will include a control valve, a flow meter, and a pressure gauge. Each group of injection wells and production wells within a house will be attached to a header.

Fluid detection systems will be used in the header houses and at the wellheads to alarm the Operators of potential upset conditions. These systems will typically use the leaking fluid to complete a circuit and initiate an alarm in the form of either an audible/visible alarm locally or by transmitting an alarm to the operations center. The second component of fluid detection systems is a local shutdown of operations at a header house. This will typically occur in the case of a large failure where a sump level reaches the shut down point and flow is stopped and the Operators are notified via alarm at the Plant. As with all leak detection systems, they are augmented by a strong operations and field presence with routine checks on pipelines, header houses, wellheads and other production components.

There will be three layers of protection associated with the wellfield instrumentation:

1. Monitoring and Data Output
2. Alarm and Notification
3. Control and Shutdown

1. Monitoring and Data Output:
   a. Oxygen: Oxygen pressures will be monitored for abnormal operating conditions.
   b. Production Systems: The main header pressure and flow rate will be monitored as well as the flow rate of each of the production wells for abnormal operating conditions. The On/Off status of each of the pumps will also be monitored.
   c. Injection Systems: The main header pressure and flow rate will be monitored as well as the flow rate of each of the injection wells for abnormal operating conditions.
   d. Header House Sumps: Sump levels and the operating status of the sump pumps in the header house basements will be monitored and transmitted to the Plant for review/alarm.

2. Alarm and Notification:
   a. Oxygen: High and low data points will be set for oxygen injection piping within the header houses. If pressures are outside the set points, Operators will be notified via alarm and Wellfield Operators will address the upset condition.
   b. Production Systems: The main header pressure and flow rate will have high and low set points. If there is an upset condition, Operators will be notified via alarm and Wellfield Operators will address the upset condition. The same is true for individual production well flow rates as well as the On/Off status of the pumps. Differential flow algorithms may be utilized to review differential flow status to determine if there is a potential problem. Production wellheads will have fluid detection systems to alarm of a leak. The fluid will close a circuit that will generate an alarm either locally, at the plant, or both.
   c. Injection Systems: The main header pressure and flow rate will have high and low set points. If there is an upset condition, Operators will be notified via alarm and Wellfield Operators will address the upset condition. The same is true for individual injection well flow rates. Differential flow algorithms may be utilized to review differential flow status to determine if there is a potential problem. Injection wellheads will have fluid detection systems to alarm of a leak. The fluid will close a circuit that will generate an alarm either locally, at the plant, or both.
   d. Header House Sumps: If sumps have fluid in them, the sumps will be activated and the fluid pumped into the production header. Anytime the sumps are activated, the Plant Operator will receive an indication. If a high level is the sump is received, the Operator will receive an alarm and the Wellfield Operator will address the upset condition.

3. Control and Shutdown:
   a. Oxygen: Pressure switches and interlocks with the injection system will be utilized to insure that oxygen injection cannot occur without adequate flow and pressure in the injection header. The concept being that if oxygen is only allowed to enter the injection header when water is present, then dangerous concentrations cannot build up in the piping.
   b. Production Systems: There are several levels of control and shutdown within the production system. The PLC will be connected to the Plant and will allow for shutdown/startup of all production wells in upset conditions. The main valve will be capable of being shut based on operating conditions, i.e. sump overflow, ruptured flowline, etc. The motor control center (MCC) will typically be interlocked with the sump high level shutoff to shut down operating pumps. The wellheads will typically utilize any leaking fluid to complete a circuit and initiate an alarm in the form of either an audible/visible alarm locally or by transmitting an alarm to the operations center. Simple systems included in the piping include check valves to insure that pipeline production fluid cannot enter shutdown sections of pipe.

c. Injection Systems: Control of this system begins with the control valve where the injection fluid enters the header house. This valve will maintain the appropriate pressure and flow for the local operating conditions as well as allow for complete shutdown of injection. Data from the main flow line and the individual injection wells will be transmitted to the Plant for review. If there is an upset condition, operators will be notified and suspect area will be shut down for maintenance. The wellheads will typically utilize any leaking fluid to complete a circuit and initiate an alarm in the form of either an audible/visible alarm locally or by transmitting an alarm to the operations center.
d. Header House Sumps: High sump levels will initiate a shutdown in the production wells and alarm the Operators.

LQD (11/09) - Response not acceptable. LQD expects that systems will be installed to allow each individual production and injection well to be remotely monitored for pressure and flow rates and controlled remotely from the control room. Please revise the text so this point is clear. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#60.

95) *LQD (1/09) - Section OP 3.5 Mine Unit Piping and Instrumentation: Please also describe how the pressure and flow rate information will be managed at one control point. (AB)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#60.

LQD (11/09) - Response not acceptable. Please see the response to Comment OP-60. (BRW for AB)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#60.

97) *LQD (1/09) - Section OP 3.6.3.1, Water Balance: should contain an explanation for why the restoration flow rates are so low in comparison to production flow rates (i.e. less than 10%). Would it not be feasible to have higher restoration flow rates, perhaps equal to production flow rates? (MM)*

LC ISR, LLC (10/09) - It would not be technically feasible to have restoration flow rates equal to production flow rates. The restoration processes produce a higher ratio of waste water to produced water than production processes, creating a more pronounced drawdown of the aquifer's piezometric surface. Therefore, to avoid 'pulling in' considerable quantities of unaffected groundwater (i.e., a higher bleed rate), dropping water levels below pumps; and other consequences of pronounced drawdown, the flow rate during restoration is not the same as the production flow rate. Further, restoration is expected to be completed in a fraction ($2/10^{th}$) of the pore volumes it takes to complete production. If an operator restored wellfields at a flow rate equal to the production flow rate, the restoration circuit would be

idle nearly 80% of the time and the required waste water disposal rate would be many times higher (when operated) than the disposal rate included in the operating plan. This scenario could not be justified because of: the extreme rate and volume of waste water generated over short periods of time (estimated at 1,150 GPM); extreme and unsustainable drawdown and recharge during the periodic restoration activities; and economic considerations (capital requirements for a 6,000 GPM water purification facility).

It should however be feasible to maintain a rate of restoration progress equal to the rate of production progress. The result of a proper design would be that wellfields are restored in an equal amount of time as the production life of a typical wellfield. This is the design basis for LC ISR LLC's proposed mine plan (**Figure OP-4a**) and water balance (**Figures OP-5a through OP-5f**). LC ISR, LLC planned for a 60 pore volume (PV) production life at 6,000 GPM. The critical restoration stage (RO) is projected to require 10% of the production PVs (i.e., 6 PVs) and to thus operate at 10% of the production flow rate (average over life-of-project is approximately 600 GPM). The rate of completion of the groundwater sweep (GWS) phase of restoration would also match the rate of depletion of the production areas when properly designed and planned. Since GWS will involve less than one pore volume (see response to Response to Comment OP5, RP#1 for complete explanation), the required flow rate for GWS is designed to commonly be 30 GPM. Operating GWS at pre-determined/controlled flow rate will minimize the likelihood of excessive consumption of groundwater resources for this minimally effective restoration activity. The end result of proper design and planning is that there is adequate and appropriate restoration capacity available for each wellfield at the point in time that it is expected to be depleted and ready for restoration. When the restoration rate equals the production rate, operations would not be extended in one operational phase due to lack of capacity for the next sequential phase.

As required in LQD NonCoal R&R Ch. 3 Sec. 2(k) and Ch. 11 Sec. 5(a)(i), restoration is planned to occur concurrently with mining, the schedule demonstrates a coordinated sequence of mining and reclamation and there is a clearly demonstrated correlation between the capacity of the water/waste water treatment systems and of the capacity requirements of the mining and restoration operations.

LQD (11/09) - Response partially acceptable. The information included in the comment response should be incorporated into section OP 3.6.3.1 of the permit. Also, please identify which formation the plant water supply well will be completed in. (MM)

LC ISR, LLC (2/10) - The information in the response has been incorporated into Section OP3.6.3.1, as requested. The information about the water supply well has been added to Section OP 2.11 (see Response to Comment V5, OP#74).

99) *LQD (1/09) - Section OP 3.6.3.1 Water Balance. (Table OP-6): Are the flow capacity's presented in this Section, Table and in Figures OP-5a through 5f, for the first mine unit or for multiple mine units? Please clarify by indicating how many mine units will be in production and restoration at one time, and how the rates presented are a compilation of that information. A table detailing this information for each mine unit, at each stage of production and restoration, for each year in the life of the mine would be useful. (AB)*

LC ISR, LLC (10/09) - Figure OP-4a illustrates the Lost Creek Project Development, Production and Restoration Schedule. A review of the schedule reveals that normally two mine units are anticipated to be in production and up to three mine units are anticipated to be in various phases of groundwater restoration (GWS, RO, Recirculation and Stability), not including the time required for regulatory approval and surface reclamation.

Section OP 3.6.3.1 states; "The water balance discussion, figures and tables included in this section consider the production and restoration phases to be operating at maximum flow capacity. At maximum flow capacity, the full potential contribution of each unit operation to the water balance can be analyzed." LC ISR, LLC as operator, will have the full discretion to determine the actual operational flow rates that meet the economic objectives of the project. Since portions of mine units are brought into and out of production and restoration as a function of the daily operational control of the facility, a table detailing the contribution of each mine unit to each stage of production and restoration summarized for each year in the life of the mine, would not provide any more useful information than Figure OP-4a already provides.

LQD (11/09) - Response not acceptable. Text in the third full paragraph on page OP-34 states "The design basis for the Lost Creek Project is derived to provide the nominal maximum production plant capacity (6,000 gpm) from each typical mine unit. Therefore, each typical mine unit includes approximately 180 (32 x 180 = 5,760 gpm) production wells...". Figure OP-4A indicates that in year two there will be production in MU-1 and MU-2 with no restoration indicated. Given the description in the text above, it would seem that the plant would essentially be operating at capacity with one unit in production, let alone the additional production from a second wellfield. Therefore, the text does not appear to jive with the schedule. Additionally, though not stated in the text, but only in the response, that "LC ISR, LLC as operator, will have the full discretion to determine the actual operational flow rates that meet the economic objectives of the project." is not completely acceptable as the LQD has indicated to LC that restoration will not suffer at the hand of production. Please address. (BRW for AB)

LC ISR, LLC (2/10) - The text in Section OP 3.6.4.1 and Figures D6-5a through 5h describe the system which includes both the *production* circuit (6,000 gpm) and the *restoration* circuit (600 gpm), i.e., a production flow rate of 6,000 gpm does not preclude a restoration flow rate of 600 gpm (See Response to Comment V5, #97 for discussion of the differences

in the flow rates.) The text also includes a discussion of the progressive water balance (i.e., for bringing the first mine unit on line through restoration of the last mine unit), including the relative to production and restoration rates, and ties it to the schedule presented in Figure OP-4a. The text in Section OP 3.6.4.1 has been edited to clarify the progression.

104) *LQD (1/09) - Section OP 3.6.3.1 Water Balance - The required injection / disposal rate for the UIC Class I well(s) should also be included in the water balance. Once the aquifer characteristics are known, the capability of the aquifer to handle the disposal rate will need to be presented in detail. (AB)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#67.

LQD (11/09) - Response not acceptable. LC has provided general information supporting the use of 50 gpm in their assumption for disposal well capacity within the WyDEQ/WQD Class I application. However, in-situ stress tests have not been conducted to date to determine the actual capacity. Please revise the text in Section 5.2.3.2 to provide a commitment concerning the incorporation of test data once obtained. (BRW for AB)

LC ISR, LLC (2/10) - The requested commitment has been incorporated into Section OP 5.2.3.2 (UIC Class I wells).

105) *LQD (1/09) - Section OP 3.6.3.3, Cumulative Drawdown: W.S. 35-11-428(a)(iii)(E) requires an assessment of impacts to water resources on adjacent lands and the steps that will be taken to mitigate the impacts. Section OP 3.6.3.3 should include drawdown projections for all aquifers that could potentially be affected by the operation for the life of the mine, including drawdown maps to illustrate the horizontal and vertical extent of projected drawdown. (MM)*

LC ISR, LLC (10/09) - The parameters necessary to provide an estimate of drawdown during life of the mine include transmissivity, storativity, net extraction rate, and duration of operation. Transmissivity of the HJ Production Zone has been determined from pumping tests, conducted on either side of the Lost Creek Fault. Because of the influence of the fault, the transmissivity determined from this pumping test is viewed as an 'effective" transmissivity.

A value of transmissivity that is not influenced by the fault can be estimated using the principle of superposition and image well theory (Stallman 1952). The principle of superposition simply states that the total effect resulting from pumping multiple wells simultaneously is equal to the sum of the individual effect caused by each of the wells acting separately. The principle of superposition is commonly used to evaluate well

interference problems by summing the drawdown determined using the Theis equation for a homogeneous, isotropic, infinite extent aquifer. Image well theory is used to address hydraulic impacts of a bounded (non infinite extent) aquifer for either no flow or recharge boundaries (Domenico and Schwartz 1990). In the application of image well theory for a no flow barrier, an imaginary well is placed directly across the no flow boundary at an equal distance from the boundary as the pumping well. The image well is assigned a pumping rate equal to that of the real pumping well. Then the drawdown can be calculated at any point within the aquifer (on the side with the real well) by summing the impacts from both the real and image well, using a modification of the Theis equation:

$s = -s_p + s_i = Q/(4\Pi T) \times [W(u)_p + W(u)_t]$

where:

s is the observed drawdown at any point;
s_p - drawdown resulting from pumping the real well;
s_i - drawdown resulting from pumping the image well;
Q - the pumping rate;
T - aquifer transmissivity;
$W(u)_p$ - well function for the real well;
$W(u)_t$ - well function for the image well;

and:

$(u)_p - r_p^2 S/4Tt$
$(u)_t - r_t^2 S/4Tt$

where:

r_p is the distance from the pumping well to the observation point;
r_i is the distance from the image well to the observation point; and
S - aquifer storativity.

In the case of the Lost Creek Project, image well theory was applied using the drawdown resulting from the LC19M pump test. The pumping well LC19M is located 482 feet from the fault, based on mapped data. An image well was assumed at a distance of 964 from the pumping well, on the other side of the fault. The drawdown at the end of the pump test at three wells were used to back calculate the transmissivity and storativity of the aquifer. The LC19M pump test was run for a period of 8,252 minutes at an average rate of 42.9 gpm. The wells and respective drawdown (at the end of the test) used to solve the Theis equation for transmissivity and drawdown were LC19M (93.32 ft), HJMP111 (35.56 ft) and HJMP104 (36.44 ft). The distance from LC19M to HJMP-111 is 473 ft and from LC19M to HJMP104 is 637 ft. The distances from the image well to HJMP-111 and HJMP-104 are 1,043 and 847 feet, respectively. A series of calculations were performed varying the transmissivity and storativity to find the best fit to the observed drawdown at the end of the test. Results of the effort indicate that a transmissivity of 144 ft^2/d and a storativity of 7e-05 provide a very good fit to the data with residuals (difference between the observed and calculated drawdown) of 0.06 ft at LC19M, -1.04 ft at HJMP-111 and

1.00 ft at HJMP-104. Although this calculation does not account for the partial penetration effects of the pumping and observation wells or the minor leakage from overlying and underlying aquifers (as evidenced by the slight drawdown response in overlying and underlying observation wells during the test), it does provide a reasonable estimate of the aquifer properties within the vicinity of Mine Unit 1 (by removing the effects of the fault on the pump test results). Table OP-9 shows the best-fit drawdown calculations. Figure OP-10a shows the location of the wells used to calculate transmissivity with the image well method.

The transmissivity and storativity values 144 ft^2/d and 7E-05, respectively were used to predict drawdown at distances of 2 and 5 miles from the centroid of production after 8 years of production and restoration activities, for two scenarios. One case assumes that the impacts of the Lost Creek Fault are negligible at distances of 2 miles or greater. This case is supported by data from site borings that indicate that the Lost Creek Fault appears to extend less than 1 mile on either side of the centroid. The other case assumes that the fault acts as a no flow boundary. The second case assumes that the fault is of infinite extent (which it is not) and all of the production will occur on the same side of the fault (which it will not because the projected mine units are on both sides of the fault). This case would provide a maximum drawdown estimate. For both cases the average pumping rate is assumed to be 89 gpm for the 8-year mine life.

The predicted drawdown at the end of production/restoration operations at an average pumping rate of 89 gpm for the first scenario (neglecting the impacts of the fault) will be 45 ft at 2 miles from the centroid of production and 28 ft at 5 miles. A projection of drawdown at the end of production and restoration under that scenario is shown in Figure OP-10b. Note that the drawdown is less at 2 miles and 5 miles from the Permit Boundary than from the centroid of production which is near the center of the Permit Area. For the scenario where the fault is assumed to be of infinite extent and acting as a no flow boundary, the aquifer is essentially reduced by half and the drawdown is doubled to 90 ft at 2 miles from the centroid of production and 56 ft at 5 miles. A projection of drawdown at the end of production and restoration under that scenario is shown in Figure OP-10c. Note that if the infinite acting fault scenario is utilized, the drawdown would only occur on the side of the fault where pumping is occurring. While the fault will have substantial impacts on localized drawdown in the vicinity of the mine units, the effect at great distance will be noticeably reduced. Therefore, the calculated drawdown using the infinite extent fault should be considered as a worst case (maximum) value These two calculations provide a reasonable bounding limit to the drawdown that can be expected as a result of ISR activities at the projected rates. The drawdown at the 2 mile radius from the centroid of production should be between 45 and 90 ft, and the drawdown at the 5 mile radius should be between 28 and 56 ft.

The depth to water for the HJ Horizon in the vicinity of MU1 is generally 170 to 180 feet. The depth to the top of the HJ Horizon in the same area averages 360 feet. Based on these

values, there is approximately 180 to 190 feet of hydraulic head above the top of the HJ Horizon at MU1. Assuming that 150 to 200 feet of head are present within 5 miles of the center of the projected mining, the estimated drawdown from production and restoration should not result in dewatering of the HJ Horizon within that same area. A projection of drawdown at the end of production and restoration is shown in Figure OP-10b.

A calculation of the time required for water levels to recover to pre-mining or near pre mining levels following completion of the ISR project was also performed.

The analysis of recovery is based on the principle of superposition which was described previously. For this case it is assumed that after the pump has been shut down (at the centroid of production), the well continues to be pumped at the same discharge as before and that an imaginary recharge equal to the discharge is injected into the well. The recharge and discharge thus cancel each other resulting in a well that is effectively no longer being pumped. The recovery of the well is measured as "residual" drawdown. Applying the Theis equation to this problem the residual drawdown is

$s' = (Q/4\pi T)\{W(u)-W(u')$
where
$u = (r^2S)/(4Tt)$ and $u' = (r^2S')/(4Tt')$
where
s' = residual drawdown in ft
r = distance from well to observation point in ft
T = transmissivity of the aquifer in ft2/d
S' = storativity of the aquifer during recovery, unitless
S = storativity of the aquifer during pumping, unitless
t = time in days since start of pumping in days
t' = time in days since the cessation of pumping in days
Q = rate of recharge = rate of discharge in ft^3/d
The calculated residual drawdown (in feet) using the equation above for various times at 2 miles and 5 miles from the centroid is shown in the table below.

Residual Drawdown After End of ISR Operations

Distance	Time Since End of Operations			
	1 yr	2 yr	4 yr	8 yr
2 miles	20.5 ft	15.1 ft	10.3 ft	6.5 ft
5 miles	18.9 ft	14.4 ft	10.0 ft	6.4 ft

Average pumping rate of 89 gpm (or 17,134 ft3/d).
Distance measured from centroid of production.

LQD (11/09) - Response partially acceptable. Impacts to the HJ aquifer have been projected to extend well beyond five miles from the permit area. Other aquifers that may be affected must also be addressed. Drawdown maps must be provided to show the extent of projected drawdown in each affected aquifer. All known water resources (wells, lakes, wetlands, springs, etc.) within the projected 5 foot drawdown area must be identified on the maps. Monitoring plans must be presented for monitoring of impacts to these water resources. Actions to be taken to mitigate the impacts must be described. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, RP#5.

112) *LQD (1/10) - Section OP 5.2.1.3 Waste Petroleum Products and Chemicals. It is not clear from this section specifically where petroleum and chemical products, or hazardous and non-hazardous waste streams will be stored. Preferably these containers will be stored in-doors where they are not subjected to the elements and have adequate secondary containment. If they are to be stored outdoors, please indicate whether there will be roofing, locked fencing, and secondary containment. **(AB)***

LC ISR, LLC (10/09) - Storage of waste petroleum products is planned within the maintenance shop at the Lost Creek Facility. This shop will have a specific area adjacent to the maintenance area that will be bermed and adequately vented. The area will be indoors and will, therefore, be controlled and not subject to the elements.

Waste chemicals will typically be associated with the laboratory and its operations. All liquid wastes will be captured in the drains and/or sumps within the laboratory and will go straight to plant waste tanks for eventual deep well disposal.

LQD (11/09) - Response not acceptable. The text concerning the storage of waste petroleum products has not been revised as indicated in the response. Additionally, the Table OP-10 is in conflict with the text. Please make the appropriate revisions. (BRW for AB)

LC ISR, LLC (2/10) - Section OP 5.2.1.3 and Table OP-10 have been updated.

113) *LQD (1/09) - Section OP 5.2.1.4, Domestic Liquid Waste: The permit for the domestic sewage/septic system should be included in the mine permit application. Additionally the disposal of domestic waste must be addressed. **(MM and BRW)***

LC ISR, LLC (10/09) - A permit application for the installation of two septic systems with leach fields was submitted to Sweetwater County on June 29, 2009. The septic system to support the Maintenance Shop will be located north of the shop while the septic system for

the office will be located southwest of the Plant (Plate OP-2). Portable chemical toilets to support drilling and field staff will be placed in appropriate locations relevant to ongoing work and will be maintained by a licensed contractor.

Pursuant to discussions held on June 22, 2009 in Casper between WDEQ and LC ISR, LLC, Table ADJ-1 of the application has been updated to include the status of the various permits/licenses required to construct and operate the facility.

LQD (11/09) - Response not acceptable. Thank you for updating Table ADJ-1 that indicates an application for two separate septic system permits. It is assumed that the permit(s), once received will either be incorporated into Appendix E or as an attachment to the Operations Plan. The issue with the currently submitted information is associated with the inconsistencies between the text and Table OP-10. Please revise. (BRW)

LC ISR, LLC (2/10) - The permits for the septic tanks will be included in Attachment OP-10. Table OP-10 has been revised to correct the estimated amount of water to enter the septic system per month.

114) *LQD (1/09) - Section OP 5.2.1.4 Domestic Liquid Wastes. There is no previous discussion of a water supply well for potable water. Please provide a discussion within the permit of the proposed aquifer and location for the potable water supply. (AB)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, OP#74.

LQD (11/09) - Response not acceptable. Please see the response to Comment OP-74 and if Well LC229W is to be used as the potable water supply well furnish a copy of the UW-6 associated with this well. (BRW for AB)

LC ISR, LLC (2/10) - Please see the response to OP 74. It was LC ISR, LLC's original intent to use Well LC229W to supply potable water. However, LC229W is within ¼ mile of the anticipated aquifer exemption boundary, so a new well further to the north will need to be installed.

118) *LQD (1/09) - The operations plan should include a section detailing procedures for exploration and delineation drilling, including: topsoil protection measures; drill hole abandonment procedures, including provision for backfilling to the surface with bentonite chips; and surface reclamation procedures. (MM)*

LC ISR, LLC (10/09) - The following procedures are expected to be used during normal drilling operations:

Exploration Drilling: will typically occur prior to installation of fences or roads to an area. This type of drilling will occur at various depths and may or may not conform to a grid. Density of drilling is highly dependent upon the results of previous work. Drill locations should be modified, where possible, to reduce the need for drilling in major drainage ways and/or major modifications to terrain. If successful, exploration drilling will be followed by Delineation drilling at, typically, a higher density.

The steps in exploration drilling are normally as follows:

1. Surveying – initial target locations are surveyed in with stakes placed. For exploration drilling, very few locations are known initially.
2. Access Planning – the access routes for the initial holes are planned and the backhoe operator and drill contractor informed of the routes. If necessary, access may be delineated with markers or posts.
3. Drill Pits – will be installed by the backhoe operator.
   a. Install erosion protection as necessary;
   b. Excavate drill pit, segregating topsoil and subsoil;
   c. Clear/level drill pad as necessary.
4. Fence Drill Pit
5. Drill Exploration Hole
6. Geophysical Log
7. Abandonment – use drill rig or LCI equipment to plug the hole
   a. Initial – typically, grout or cement is pumped into the hole from the bottom up. Depending on hole conditions, bentonite chips may be used to assist in the plugging process. A temporary cover is placed over the hole after plugging is complete.
   b. Topoff – after the plugging material is allowed to settle, the hole will be revisited and the grout or cement will be topped off to approximately 17 feet below the ground surface. Approximately 10 feet of bentonite chips will be placed on top of the grout or cement column.
   c. Surface plug – A plug capable of supporting approximately 5 feet of cement or concrete will be placed on top of the plug. The remaining upper two feet of the hole will be backfilled with native soil.
8. Backfill Pit – the drill pit will be backfilled with subsoil so as not to allow the displacement of drilling fluid from the pit. The temporary fence will be permanently removed once the pit is backfilled. After the pit is backfilled and the fence removed, the topsoil will be evenly applied over the excavated area.
9. Seeding – surface preparation and reseeding will occur at the next available time period appropriate for planting.

Delineation Drilling: may occur prior to installation of fences or roads to an area or may occur in areas with significant infrastructure. This type of drilling will occur at various depths and may or may not conform to a grid. Density of drilling is reasonable dependent

upon the results of previous work. Drill locations may be modified, where possible, to reduce the need for drilling in major drainage ways and/or major modifications to terrain. Once completed, delineation drilling will be followed by monitor well and production well installation.

The steps in delineation drilling are normally as follows:

1. Surveying – initial target locations are surveyed in with stakes placed. Drilling may be expanded depending on results.
2. Access Planning – the access routes for the holes are planned and the backhoe operator and drill contractor informed of the routes. If necessary, access may be delineated with markers or posts. Existing access routes will be used wherever possible.
3. Drill Pits – will be installed by the backhoe operator.
   a. Install erosion protection as necessary;
   b. Excavate drill pit, segregating topsoil and subsoil;
   c. Clear/level drill pad as necessary.
4. Fence Drill Pit as necessary. If drilling is within existing wellfield fencing, then temporary fencing will not be required.
5. Drill Delineation Hole
6. Geophysical Log
7. Abandonment – utilize drill rig or LCI equipment to plug the hole
   a. Initial – typically, grout or cement is pumped into the hole from the bottom up. Depending on hole conditions, bentonite chips may be used to assist in the plugging process. A temporary cover is placed over the hole after plugging is complete.
   b. Topoff – after the plugging material is allowed to settle, the hole will be revisited and the grout or cement will be topped off to approximately 17 feet below the ground surface. Approximately 10 feet of bentonite chips will be placed on top of the grout or cement column.
   c. Surface plug – A plug capable of supporting approximately 5 feet of cement or concrete will be placed on top of the plug. The remaining upper 2 feet of the hole will be backfilled with native soil.
8. Backfill Pit – the drill pit will be backfilled with subsoil so as not to allow the displacement of drilling fluid from the pit. The temporary fence will be permanently removed once the pit is backfilled. After the pit is backfilled and the fence removed, the topsoil will be evenly applied over the excavated area.
9. Seeding – surface preparation and reseeding will occur at the next available time period appropriate for planting.

LQD (11/09) - Response partially acceptable. The discussion provided in LC's comment response should be incorporated into Section OP 2.12 of the permit. (MM)

LC ISR, LLC (2/10) - The information has been incorporated into Section OP 2.12 as requested.

119) *LQD (1/09) - The operations plan should include a section detailing procedures and a schedule for locating, investigating and properly abandoning all historical drill holes on the permit area. (MM)*

LC ISR, LLC (10/09) - Please see Response to Comment V5, #84.

LQD (11/09) - Response not acceptable. The issue of how to address old abandoned drill holes is one that will obviously require continuing evaluation and discussion. Questions relating to who is responsible for the old holes are irrelevant at this point. We are not blaming LC for the existence or the condition of the holes. We would not be asking LC to plug the holes, except for the fact that LC is proposing an ISL operation on a site that resembles Swiss cheese. ISL operators are responsible for controlling their production fluids and for restoring the groundwater affected by their operations. We believe that the old improperly abandoned drill holes will seriously impair these efforts and thus affect LC's ability to conduct a successful operation. LQD cannot ignore this issue. We acknowledge that locating old abandoned drill holes is problematic and that efforts involving extensive surface disturbance are not desirable. LQD will continue to evaluate information (e.g. pump tests) as it becomes available. It is hoped that we can jointly arrive at a reasonable approach to address the problem. (MM)

LC ISR, LLC (2/10) - Please see Response to Comment V5, #84.

NEW LQD COMMENTS - November 2009

NC1) ***LQD (11/09) - Section OP 2.8, Page OP-15: the citation, "(WGFD, 2008)" is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. (SP)***

LC ISR, LLC (2/10) - The reference for "(WGFD, 2008)", which is the "Stipulations for Development in Core Sage Grouse Population Areas" has been added to the References in both the Operations Plan (Page OP-66) and Attachment OP-6 (Attachment OP-6 Page 26).

All of the text references in Attachment OP-6 were checked, and commas inserted where necessary, for consistency with the other text references in the application.

NC2) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, Wildlife Protection and Wildlife Monitoring (WP&WM), Table of Contents (TOC): in the TOC on page ii, the last heading (i.e., "ADDENDUM") with the next two lines of text (i.e., ending with References) are inserted in the document after the text sections and should be moved to a position just ahead of "FIGURES". (SP)***

LC ISR, LLC (2/10) - For consistency with rest of the application (in which Attachments, Addenda, and similar additions are after the Figures, Tables, and Plates): the Table of Contents has been left as is; the pagination has been removed from the cover page for Addendum OP-6-A; and the cover page has been moved after the Figures and Tables.

NC3) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, TOC: tabbed and labeled dividers for "References", "Addenda", "Figures", and "Tables" should be included as was done with Appendix D-9 . (SP)***

LC ISR, LLC (2/10) - Tab dividers have been added for the Attachment OP-6 Figures, Tables, and Addendum OP-6-A.

NC4) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, TOC: figure OP-A6-2 is the same as Figure D9-6. Past LQD experience has found it is difficult to remember to change the information and more than on location, resulting in conflicting information being retained within the mine permit when future plan revisions are made. Please cite the same figure number in both (or more) places but only include the figure in its most logical location. (SP)***

LC ISR, LLC (2/10) - LC ISR, LLC acknowledges that duplicate entries can be difficult to keep consistent over time. However, in this instance, the duplicate entries were done for a specific reason (outlined below), and the notation in the Attachment OP-6 Table of Contents is intended to remind authors and reviewers of the need to update multiple entries. To that end, notations have also been added to the main Table of Contents, the Operations Plan Table of Contents, and the respective figures and tables.

The most logical place to include the figures and tables referenced in this comment would be in the main permit document. (The figure would only be in Appendix D9 and the tables would only be in the Operations Plan.) However, during a meeting with WGFD in August 2009, the decision was made to send WGFD and USFWS a printed copy of only portions of the WDEQ-LQD application, and an electronic copy of the entire application. Because the sage grouse are of particular concern, and the WGFD stipulations address area of disturbance, it was considered important to include the referenced figures and tables in the printed portion of the application sent to WGFD, as well as in the main permit document. It should also be noted that LC ISR, LLC is working with WGFD and USFWS to ensure the Protection and Monitoring Plans meet their requirements. Therefore, it may be necessary to make additional changes to the plans.

NC5) ***LQD (11/09)*- Section OP 2.8, Attachment OP-6, WP&WM, TOC: figure OP-A6-3e was added to the document; however, it was not added to the TOC. Please correct. (SP)**

LC ISR, LLC (2/10) - Figure OP-A6-3e has been added to the Table of Contents.

NC6) ***LQD (11/09) Section OP 2.8, Attachment OP-6, WP&WM, TOC: the titles on all but the first 2 Figures and several Tables are not the same as on the TOC. Please correct. (SP)***

LC ISR, LLC (2/10) - The figure and table titles in the Table of Contents have been updated to match the titles on the figures and tables.

NC7) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, TOC: tables OP-A6-3 and -4 are the same as Tables OP-3 and -5. Past LQD experience has found it is difficult to remember to change the information and more than on location, resulting in conflicting information being retained within the mine permit when future plan revisions are made. Please cite the same figure number in both (or more) places but only include the tables in its most logical location. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC4.

NC8) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.0: the citation, "(WGFD 2008)" appears twice on page 2 and is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC1.

NC9) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.1: the "WDEQ" is referenced twice and in both instances it appears that the Land Quality Division (LQD) is being referenced rather than the entire WDEQ and all its divisions. The "ABBREVIATIONS AND ACRONYMS" list on page OP-v identifies the "LQD" as the proper acronym to be consistent. Please correct the above 2 references here and the mine permit text accordingly. Please correct. (SP)***

LC ISR, LLC (2/10) - The reference to WDEQ, rather than specific divisions within WDEQ, was intentional given that it could be necessary for LC ISR, LLC to notify LQD, WQD, and/or AQD depending upon the concern. The text has been modified to indicate that WDEQ-LQD will be notified, along with other WDEQ divisions, as necessary. Sections 1.5.4 and 2.0 have also been modified for consistency with Section 1.1.

NC10) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.3.1 in the second to last paragraph "If the annual raptor nest survey locates a new...nest within 0.5 miles of projected activities...". The underlined words that follow should be added after the word "...activities..." (e.g., "...of projected mining activities and those activities proposed for the coming year"...). Please correct. (SP)***

LC ISR, LLC (2/10) - The sentence reads "If the annual raptor nest survey locates a new raptor nest within 0.5 miles of *project* activities...." (emphasis added). In keeping with the first sentence in the paragraph, the intended time frame for "project activities" was life-of-mine. The details of the raptor monitoring plan, which includes the entire Permit Area and surrounding one mile radius, are included in Section 2.3 of Attachment OP-6. The sentence has been modified.

NC11) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.3.3.1: the section cites "Section RP-4.5.5" regarding fence removal and mentions that "The fences will be removed after...and vegetation has become established in accordance with permit requirements"; however, this statement is not written in the referenced section. It should also be written in the RP text. Please correct. (SP)***

LC ISR, LLC (2/10) - The Reclamation Plan reference should have been to Section RP 4.5.4 and has been corrected.

NC12) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.3.3.3: the storage ponds are planned to be surrounded first by a 6 foot high chain link fence and then by a barbed wire fence. The text mentions that the amount of freeboard (3h:1v) should make it difficult for land birds to drink from the ponds. Northern sage grouse (NSG) are highly attracted to water and could easily fly over the fences to land inside it. NSG also find their way into "old tire" and vertical-sided metal tanks at livestock waters, often drowning. Escape ramps are being installed across the state. In this situation; however, exiting the pond area might be difficult, especially for waterfowl. LC ISL, LLC, should consider netting to cover the ponds and creating one or more water sources (i.e., off-site mitigation; generally to the north of the mine units and plant) to draw NSG and other wildlife to an alternate water source and potentially, increase NSG survival. Please correct. (SP)***

LC ISR, LLC (2/10) - On two separate occasions, WDEQ Director John Corra has stated that his agency will rely on the Wyoming Game and Fish Department (WGFD) to review wildlife aspects in a permit to mine application. LC ISR, LLC has submitted the Wildlife Protection and Monitoring Plans to both WGFD and the U.S. Fish and Wildlife Service (UFWS) for review and comment. Therefore, to prevent potentially conflicting requirements from multiple agencies, LC ISR, LLC will rely on the requirements from WGFD and USFWS. The WGFD and USFWS comments will be submitted to WDEQ-

LQD as part of Attachment OP-6, and LC ISR, LLC will update the permit application as necessary in response to those agency comments.

NC13) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.3.3.3: the section cites "Section 2.9.4" and it be "Section OP 2.9.4". Please correct. (SP)***

LC ISR, LLC (2/10) - In the last paragraph of Section 1.3.3.3, the reference to Section 2.9.4 has been changed to Section OP 2.9.4.

NC14) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.4.3: in the noise discussion and at the top of page 12, "OP-A6-5a" is cited. It should be "Table OP-A6-5a". Please correct. (SP)***

LC ISR, LLC (2/10) - At the end of the first paragraph in Section 1.4.3, the word "Table" has been inserted before "OP-A6-5a".

NC15) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.4.3: in the last paragraph of the noise discussion and on page 12, "Figure OP-A6-4" is cited. It should be "Figure OP-A6-5". Please correct. (SP)***

LC ISR, LLC (2/10) - The figure reference in the last paragraph of Section 1.4.3 has been corrected.

NC16) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.5.1.3: the WDEQ is composed of several divisions [i.e., air (AQD), land (LQD), water (WQD), etc.]. The use of "WDEQ" is listed in this section; however, if referencing a specific division (e.g., "LQD"; see "ABBREVIATIONS AND ACRONYMS" list on page OP-v) and not the department as a whole [(WDEQ)(i.e., all divisions)], specific divisions should be cited. Please correct throughout the permit document. (SP)***

LC ISR, LLC (2/10) - "LQD" has been added after "WDEQ".

NC17. Section OP 2.8, Attachment OP-6, WP&WM, Section 1.5.3.1: "birds of prey" or "raptors" should be included in the list of predators. Please correct. **(SP)**

NC18) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 1.5.4: the WDEQ is composed of several divisions [i.e., air (AQD), land (LQD), water (WQD), etc.]. The use of "WDEQ" is listed in this section; however, if referencing a specific division (e.g., "LQD"; see "ABBREVIATIONS AND ACRONYMS" list on page OP-v) and not the department as a whole [(WDEQ)(i.e., all divisions)], specific divisions should be cited. Please correct throughout the permit document. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC9.

NC19) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.0: the citation, "(WGFD 2007)" appears in the text on page 17 and is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC1.

NC20) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.3.1 the first 3 paragraphs of this section (i.e., all on page 21) do not adequately mirror the Appendix B requirements for raptor "Nest Status and Production Success". Please replace these 3 paragraphs with the following and more specific Appendix B language. "From on or before mid-February through March, surveys for golden eagle and great horned owl nests shall be initiated with ½ mile of existing mining activities and those activities proposed for the coming year. In areas of potential conflict situations LC ISL will document early courtship behavior because once eggs are laid, mitigation options become restricted. [End of Paragraph] In addition, three surveys covering the entire permit area and a one mile perimeter will be conducted within the following time frames. The first shall be conducted in March to check known and to locate any new golden eagle and great horned owl nests [i.e., territory: (a) not occupied (inactive), (b) occupied by one occupant (active), or (c) occupied by a pair (active)]. A second survey shall be conducted in April to check known nests most other raptor species [i.e., territory: (a) not occupied (i.e., inactive), (b) occupied by one occupant (active), or (c) occupied by a pair (active)]. A third survey shall be conducted from mid-May through mid-June to locate new raptor nests and to check the status of all known nests. [End of Paragraph] Follow-up visits to previously identified nests, as many as necessary, shall be timed to facilitate documentation of occupied territories (see above), nest building (if yes, record observation), incubation [i.e., the subject pair: (a) did not lay eggs [no reproductive attempt], (b) did lay eggs (made a reproductive attempt)], and fledging success [(a) eggs did not hatch or young did not fledge (the nesting attempt was not successful), (b) the number of young that reached that age of fledging (the nesting attempt was successful)] according to the biology of the species present and variations in breeding chronology." [End of Paragraph]. (SP)***

LC ISR, LLC (2/10) - The text has been modified, although the Appendix B language has not been copied verbatim, e.g., the proposed survey area includes the entire Permit Area and one-mile radius, not just the area proposed for disturbance the next year.

NC21) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.3.1: the previous comment causes Table OP-A6-6 to need revision regarding raptor monitoring which often continues into mid-July in order to make "age of fledging counts". Please update the figure accordingly, in addition on page 17 (i.e., end of Section 2.0) the table***

is cited as a "Figure" but is in-fact a table in the OP. This is probably because in D-9 it was labeled and listed as a "Figure" (i.e., not necessary to change it D-9). (SP)

LC ISR, LLC (2/10) - Table OP-A6-6 has been updated.

NC22) **LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.4: the WDEQ is composed of several divisions [i.e., air (AQD), land (LQD), water (WQD), etc.]. The use of "WDEQ" is listed in this section; however, if referencing a specific division (e.g., "LQD"; see "ABBREVIATIONS AND ACRONYMS" list on page OP-v) and not the department as a whole [(WDEQ)(i.e., all divisions)], specific divisions should be cited. Please correct throughout the permit document. (SP)**

LC ISR, LLC (2/10) - "LQD" has been added after "WDEQ".

NC23) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.4: the citation, "(WDEQ 1994)" appears in the text on page 23 and is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC1.

NC24) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.4: the citation, "(WDEQ 1994)" appears in the text regarding MBHFI non-game bird surveys. This type of survey is related to the USFWS and the methodology may not match the citation. Please correct as needed once a consultation response letter is received from the USFWS. (SP)***

LC ISR, LLC (2/10) - On November 2, 2009, Attachment OP-6 was received by USFWS. LC ISR, LLC received the consultation response letter from USFWS on December 22, 2009 approving the WDEQ 1994 MBHFI non-game bird survey procedures. The WDEQ 1994 reference is included in the Attachment OP-6 References, and a copy of the letter from USFWS is included in Addendum OP-A6-1.

NC25) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Section 2.7: the section indicates that non-game bird surveys (i.e., except for raptors and MBHFI) will be conducted as incidental observations to other work. Section 2.4 commits to "breeding bird surveys" for MBHFI and this type of survey requires recording all species encountered, including non-game birds. Section 2.7 should mention that non-game birds will only be recorded incidental to other work but will be formally surveyed only when in association with breeding bird surveys described in Section 2.4 (MBHFI). (SP)***

LC ISR, LLC (2/10) - A cross-reference to Section 2.4 has been added to Section 2.7 to clarify that all the species observed or heard will be recorded as part of the MBHFI

survey. In addition, Section 2.4 has been clarified to indicate that transects will be monitored in both the Upland Big Sagebrush and Lowland Big Sagebrush habitats.

NC26) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: on page 26 "(DOE 2004)" has not been cited in the text. Please correct. (SP)***

LC ISR, LLC (2/10) - The DOE citation was removed from the References. It was inadvertently copied from another reference list even though it was not cited in this text.

NC27) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: on page 26 "(WYDEQ 2007a)" has not been cited in the text. Please correct. (SP)***

LC ISR, LLC (2/10) - The WYDEQ citations were removed from the References. They were inadvertently copied from another reference list even though they were not cited in this text.

NC28) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: on page 26 "(WYDEQ 2007b)" has not been cited in the text. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see response to previous comment.

NC29) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the "ABBREVIATIONS AND ACRONYMS" list on page OP-v does not identify WYDEQ; however, it does identify "WDEQ" to be consistent. Please correct the above 2 references here and the mine permit text accordingly. (SP)***

LC ISR, LLC (2/10) - As noted in Response to Comment NC27, the WYDEQ citations have been removed from the References; therefore, correction of the abbreviation is moot.

NC30) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Olendorf et al. 1996)" appears in the text on page 5 and is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. The spelling of "Olendorff" is incorrect on page 5 and in Section OP-5 References on page OP-55; however, a word search (by either spelling) does not locate the reference as cited in the OP except in Attachment OP-6. Please correct. (SP)***

LC ISR, LLC (2/10) - The 'Olendorf et al, 1996' reference discusses raptors and transmission lines. It has been removed from the References in the Operations Plan, because it is only referred to in Attachment OP-6 (last paragraph in Section 1.3.2), and has been added to the References in Attachment OP-6.

The 'O*hl*endorf et al, 19*8*6' reference discusses selenium impacts on waterfowl and is referred to in the first paragraph under Selenium in Section 1.3.3.3. It was not in the References in the Operations Plan, but was (and still is) in the References in Attachment OP-6.

All of the text references in Attachment OP-6 were checked, and commas inserted where necessary, for consistency with the other text references in the application.

NC31) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Holloran 2005)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - The reference is part of the WGFD Stipulations and can be found, with the other supporting materials for the stipulations, at the website listed in the Table OP-A6-1 footnote. For easier location, the reference has been copied from the website onto Table OP-A6-1. The format of the reference matches that used in the stipulation document.

NC32) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Carr 1967)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC33) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Wallestad & Schadweiler 1974)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC34) ***LQD/11/09 - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Rothenmaier 1979)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC35) ***LQD (1/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Schoenber 1982)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC36) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Lyon & Anderson 2003)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC37) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Inglefinger 2001)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC38) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, References: the citation, "(Nicholoff 2003)" appears in Table OP-A6-1; however, it is not listed in the "References" (i.e., pages Att. OP-6, pages 25 & 26). Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

LC ISR, LLC (2/10) - Please see Response to Comment NC31.

NC39) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Table OP-A6-1 (page 1 of 3): in the table Figure OP-A5-2" is cited. It should be "Figure OP-A6-2". Please correct. (SP)***

LC ISR, LLC (2/10) - The figure reference has been corrected.

NC40) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Table OP-A6-1 (page 2 of 3): in the table, "Table OP-A5-3" is cited. It should be "Table OP-A6-3". Please correct. (SP)***

LC ISR, LLC (2/10) - The table reference has been corrected.

NC41) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Table OP-A6-1 (page 2 of 3): in item (5) and part (a), the text reads "...is to reduce raptor and corvid roosting...". Consider that power poles are used as hunting perches, for resting, and roosting. Availability of an elevated hunting perch increases the distance that predatory birds can effectively hunt; therefore, prevention of "use" not only protects the predatory birds from being electrocuted, but also, should reduce predation on northern sage grouse. Please change the word "roosting" to "use". (SP)***

LC ISR, LLC (2/10) - The word 'roosting' has been changed to 'use'.

NC42) ***LQD (11/09) - Section OP 2.8, Attachment OP-6, WP&WM, Table OP-A6-1 (page 3 of 3): in item (6) and part (a), the text reads "...is analogous to topsoil stripping at coil mines...". It should read "...at coal mines...". Please correct. (SP)***

LC ISR, LLC (2/10) - The spelling of 'coal' has been corrected.

NC43) ***LQD (11/09) - Section OP, References: the citations, "(BLM, 1996)" and "(BLM, 2003)" appear in the text and "References" (i.e., page OP-55); however, in the "References" they are listed as "Bureau of Land Management (US)..." and should be "Bureau of Land Management (BLM)...". Also, some text references have a comma before the date and others do not and all should be consistent. Please correct. (SP)***

The BLM citation in the Operations Plan (at the end of Section 2.7) is "(BLM, 1996 and 2004c)". The "c" after 2004 has been removed because there is only one BLM reference in the Operations Plan; it was copied from the Appendix D References in which there are several BLM citations.

The "(US)" after "Bureau of Land Management" is not the abbreviation for the agency, which is given in the List of Abbreviations, rather it indicates the country in which the agency is located. The reference style for the main permit document was adapted from Scientific Style and Format: The CBE Manual for Authors, Editors and Publishers, 6th edition, 825 p., compiled by the Style Manual Committee Council of Biology Editors. The references in Attachment OP-6 have been updated to match that style. Given the number of reference styles and the variety of references, however, it is possible that the reference style may vary.

The only two text references in the Operations Plan (at the end of Section OP 2.7 and in the third paragraph of Section 2.8) both had commas before the date.

NEW INFORMATION

A) Attachment OP-6 - Last paragraph of introductory section and 3rd sentence in Section 2.0: The list of agencies to which annual monitoring results will be reported is now consistent between the two locations.

B) Attachment OP-6: A cross-reference to Section 2.2.3 has been added at the end of Section 1.3.2.

C) Attachment OP-6: The last paragraph in the discussion of Radium-226 in Section 1.3.3.3 has been clarified.

D) Attachment OP-6: Section 1.4.5 has been updated.

E) Attachment OP-6: Section 1.5.2.3 has been clarified.

F) Attachment OP-6: Section 2.2 has been revised to describe a more comprehensive sage grouse monitoring program.

RECLAMATION PLAN

JANUARY 2009 LQD COMMENTS

5) *LQD (1/09) - Please provide a hydrologic impact assessment (surface and ground water) of the final anticipated conditions. This should include recovery times ground water, potential changes in water chemistry, etc.* ***(BRW)***

LC ISR, LLC (10/09) -

Surface Water
As discussed in Appendix D6, Section D6.1.1, all of the surface water features at the site are ephemeral and relatively small. The only anticipated temporary impacts to the surface water system during operations may occur along roads, where it may be necessary to route drainages through culverts under the roads (Section OP 2.6) or route runoff around facilities (Operations Plan Attachment OP-4). These features should not affect flow rates or water quality because: of the low relief across the site and the limited surface water flows; only the drainage pattern in the immediate vicinity of the roads and structures may need to be altered (if at all); the culverts will be appropriately sized; and any disturbances associated with installation of the structures will be reclaimed immediately after installation (Section OP 2.7). The Stormwater Pollution Prevention Plan also has provisions for evaluating construction impacts and unanticipated impacts such as spills. Provisions for spill detection and response are also addressed in Section OP 2.9.

Once reclamation of the site is completed, no permanent impacts to the surface water system are anticipated. As discussed in Sections RP 3.0 and 4.0 of the Reclamation Plan, all of the surface facilities are scheduled for removal and reclamation. The landowner (BLM) could request that a road (and associated culverts) be left in place, which may mean a permanent change to the drainage pattern. However, by that time, any potential problems with the function of the culvert(s) should have been detected and repaired. As noted above, any spill-related impacts will be addressed at the time of the spill.

Groundwater
Please see OP 3.1 and Response to Comment V5, OP#105.

LQD (11/09) - Response not acceptable. While the reviewer admits there will generally be no measureable impacts to the surface water drainage system as described in the text above. However, the reviewer could not find the summary discussion provided as a response within the application text. The permanent postmine impoundment at the Sweetwater Mill, whose source of supply is the Battle Springs aquifer, is not that far

away from the proposed operation. There is no mention as to what impacts, if any, the project drawdown may have on this facility.

Regarding ground water, LC has provided some information in response to Comment OP #105. The majority of the response provided information could not be found in the application text. As requested, please provide maps that illustrate projected areal extent of five or more feet of drawdown. Please provide an estimated recovery time and include the methodology used to make the calculation. While the reviewer understands that wells within one-half mile of the projected disturbance will be plugged and abandoned, there are several wells, some of which are assumed to serve as stock water supply, that are outside one-half mile radius, but easily within two miles of the permit area boundary. No assessment has been provided regarding the potential impacts to these wells, nor a commitment to replace if the well is impacted. Please make the appropriate revisions to the application text and also see the response to Comment OP #105. (BRW)

LC ISR, LLC (2/10) -

Surface Water -
Section OP 2.11 was renamed and the discussion from the above response on the limited operational impacts to surface water has been incorporated into Section OP 2.11.1. The discussion from the above response on the limited reclamation impacts to surface water was incorporated into Section RP 4.5.2.

Ground Water
The discussion in Section OP 3.6.3.3 was updated in response to the above comment.

Ground water recovery rates are discussed in a new Section RP 4.6.

With respect to the BLM wells, please see Comment V2, D6#30, which was resolved as of December 2009 (letter of December 21, 2009 from A. Boyle (WDEQ-LQD) to J. Cash (LC ISR, LLC). As part of that resolution, monitoring of the wells was added to Attachment OP-8 and a replacement commitment was added to the last paragraph of Section D6.3. A cross-reference to that commitment has been added in Section 2.11.2.2.

7) *LQD (1/09) - Section RP 2.4: The ground water stability monitoring phase should be 12 months with quarterly sampling (i.e. a total of 5 sampling events). (MM)*

LC ISR, LLC (10/09) - WDEQ-LQD Guideline 4 Section D(1)(d) recommends a stabilization period of at least six months. LC ISR, LLC has already exceeded the minimum LQD recommendation by stating that stabilization will last nine months. Samples will be

collected at the beginning of the nine-month period and once every three months for nine months. This will result in a total of four sampling rounds.

LQD (11/09) - Response not acceptable. Four samples in a nine month period is not sufficient to evaluate stability. Guideline No. 4 recommends a stability period of at least six months with monthly sampling (i.e. a minimum of 6 sampling events) and analysis of the full suite of parameters. The reviewer is only requesting 5 sampling events over a 12 month period. (MM)

LC ISR, LLC - Pursuant to the above request, LC ISR, LLC has revised the text in Section RP 2.4 to allow for 12 months of stability and a total of five sample rounds. One round of samples will be collected at the beginning of the stability period with an additional round collected at the end of each three-month period. Each sample will be analyzed for the full suite of parameters.

On February 8 2010, John Cash and Mark Moxley agreed that, if LC ISR, LLC would accept a 12-month stability period with five sample rounds, it would not be necessary to revise the bond and schedules presented in other parts of the application. The reasoning behind this agreement is that the length of time presented in the bond and schedules is sufficient when stability and subsequent regulatory approval are considered together.

8) *LQD (1/09) - Section RP 2.4 should be revised to specify that during the stability monitoring period all monitoring wells (inside and outside of the pattern, including underlying, overlying and perimeter wells) will be individually sampled and analyzed for the complete suite of parameters, including water levels. (MM)*

LC ISR, LLC (10/09) - Section RP 2.4 has been revised to state that, during stability monitoring, all overlying, underlying and perimeter monitor wells will be analyzed for all UCL parameters once every three months. If groundwater restoration has not been successful and an excursion occurs during stabilization then the sampling will revert to weekly for affected monitor wells.

LQD (11/09) - Response not acceptable. LC is proposing to take composite samples from the wellfield instead of sampling and analyzing each well and averaging the data. This is not acceptable. An average is an arithmetic mean (defined in Webster's as: The value computed by dividing the sum of a set of terms by the number of terms.) Baseline/background water quality is characterized based on analysis of samples from individual wells. Restoration will be evaluated in the same manner.

LC is also proposing to drop the analysis of any parameter found to be below the detection limits. This is not acceptable. Every sample must be analyzed for the complete suite of parameters. The purpose of stability monitoring is to demonstrate

that the water quality is stable based on an evaluation of all parameters. Just because a parameter is non-detectable during one sample round does not insure that it will remain non-detectable throughout the stability period. (MM)

LC ISR, LLC (2/10) - Section RP 2.4 has been revised to remove statements regarding physical compositing and a reduced parameter list based on non-detects in early rounds.

10) *LQD (1/09) - Section RP 3.1, Well Abandonment: Item number 7 in the list on Page RP-11 must be changed to acknowledge the new policy of LQD to require that all drill holes and abandoned wells are backfilled to within three feet of the surface. It is no longer considered BPT to allow open holes to be left in the ground. This means if grout settles to 40 feet bgs (or any other level greater than two or three feet bgs) and no water is on top of the grout plug, bentonite chips or a reasonable substitute must be poured into the hole to bring it to the proper level. If there is still water on top of the grout plug, the operator is expected to re-enter the hole and tremmie to the bottom so the hole may, again, be backfilled from the bottom to the top. **(MLB)***

LC ISR, LLC (10/09) - Please see the Response to Comment V5, OP #118.

LQD (11/09) - Response not acceptable. While the text is generally acceptable, WDEQ/LQD NonCoal Rules and Regulations, Chapter 8 is not applicable to which this section addresses, well abandonment. The citation should be WDEQ/LQD NonCoal Rules and Regulations, Chapter11, Section 8. Within this section, the requirement is for the entire casing is to be filled. The text of this section only indicates that if settlement is greater than 40 feet, additional grout will be added. A statement should be added that makes a commitment to have the sealent material remain within three feet bgs for a period of 24 hours before cutting the casing and installing the concrete cap. Please make the appropriate revisions to the text. (BRW for MLB)

LC ISR, LLC (2/10) - The reference to the applicable LQD regulation (in the list after the first paragraph in Section OP 3.1) has been corrected from "Chapter VIII" to Chapter 11, Section 8.

Items #6 and #7 in Section RP 3.1 read:

6) The well will be left open for at least 24 hours to allow the grout to set.
7) If the grout has settled no more than 40 feet below ground surface (ft bgs) the top of the well will be sealed with bentonite chips, pellets, or additional grouting material will be used. If the grout has settled more than 40 ft bgs, additional grout will be introduced on top of the settled grout through a tremie pipe."

The reference to 40 feet of settlement was *not* to indicate that the no action would be taken if there were less than 40 feet of settlement. Rather, the reference was to indicate *how* the upper portion of the hole would be plugged if settlement were more than 40 feet. If there is more than 40 feet of settlement, a tremie pipe must be used; if there is less than 40 feet, then the material could be introduced from the surface. For example, WDEQ-LQD NonCoal Rules and Regulations, Chapter 11, Section 6(c)(iii) differentiates between required methods based on 40 feet of settlement.

However, to ensure that the plugging process is iterative (i.e., if additional material is added, another 24 hours will elapse to ensure there is no additional settlement), Item #7 has been revised .

14) *LQD (1/09) - Section RP 4.1 discusses on-site waste disposal. Any on-site waste disposal must be permitted as part of the mine permit application. Detailed plans and specifications must be provided along with landowner's consent. (MM)*

LC ISR, LLC (10/09) - LC ISR, LLC has decided to not pursue an on-site landfill at this time and as such has deleted the portions of the 2nd paragraph of Section RP 4.1 describing a landfill. The bond calculation includes the cost of shipping and disposal of all material at appropriate offsite locations.

LQD (11/09) - Response not acceptable. LC's response states that they will not pursue an on-site landfill, yet the text in section RP 4.1 still describes on-site disposal of waste materials. Please revise the text in the permit to clarify that there will be no on-site disposal of waste materials. (MM)

LC ISR, LLC (2/10) - The reference to an on-site landfill has been removed from the permit application.

18) *LQD (1/09) - Section RP 4.5.3 Soil Replacement. This section states that Section OP 2.5 describes that separate handling of topsoil and subsoil is not required. No discussion of this topic was found in Section OP 2.5. Topsoil is always more valuable a planting bed than a topsoil / subsoil mixture. Especially given the dessert conditions, all efforts should be made to be protective of the topsoil layer, especially by handling it separately from the subsoil. (AB)*

LC ISR, LLC (10/09) - The reference to subsoil has been removed, and the discussion about topsoil and subsoil in Section OP 2.5 has been clarified.

LQD (11/09) - Response not acceptable. Specific to salvage and replacement, Section OP - 2.5 indicates that a qualified professional will be on hand and that the soil will be

replaced at a uniform depth. Baseline soil surveys should define the salvage depth at various locations and if this has not been done, the survey is incomplete. The text should commit to salvaging topsoil to depths as specified in the Appendix D-5 surveys and replaced at a uniform depth according to salvage. Please revise the text accordingly. (BRW for AB)

LC ISR, LLC (11/09) - The text in Section RP 4.5.3 has been updated to indicate that the topsoil will be replaced in accordance with the depths and acreages salvaged during construction. Section OP 2.5 has also been updated with more recent topsoil survey information (see Response to Comments V5, OP#23).

23) *LQD (1/09) - Section RP 5.0 and Table RP-4: The reclamation cost estimate should be revised to include the following:*

- *A detailed critical-path time schedule including all phases of the reclamation.*

  LC ISR, LLC (10/09) - A detailed critical-path schedule is included as Figure RP-4 for the operation, restoration and reclamation of the Plant and the first mine unit. This schedule supports the associated bond presented in Table RP-4. The schedule also details the projected manpower requirements through the restoration/reclamation cycle.

- *A detailed description of labor requirements and assumptions for all phases of the reclamation. It is this reviewer's position that the reclamation cost estimate should include a workforce/payroll comparable with the production workforce/payroll or justify why this would not be the case. (MM)*

  LC ISR, LLC (10/09) - Restoration occurs concurrently with production during most of the project life; therefore, the "production workforce/payroll" already includes the workforce required for restoration during much of the mine life. .Restoration and reclamation do not require a workforce/payroll comparable with the production workforce. The need for several segments of the workforce are eliminated and or substantially reduced when drilling, construction and production activities cease. When production ends and restoration continues, the workforce required for production is cut while the workforce required for restoration is retained.

  The operational flow rate required for restoration is a small fraction of the operational flow rate for restoration. The requirement for groundwater sweep and the rate of consumptive removal of groundwater during that stage limit the ability for an operator to increase the restoration flow rate. Lower required flow rates translate to lower workforce/payroll levels.

Table RP-4 and Figure RP-4 have been revised to include the actual monitor well counts and proposed injection and production counts. Figure RP-4 details the labor requirements during all phases of the initial bonded work. The following is a discussion of the major labor components:

Drilling and Construction: For the purposes of Figure RP-4, construction occurs from the beginning of Year 1 through the second month of Year 2. Construction includes installation and testing of wells, pipelines, powerlines and field production facilities. Because the surety bond calculation assumes shutdown of production after Mine Unit 1 (MU-1), all construction associated personnel and contractors will cease work at the project after completion of their assignments except for those that will be employed in the restoration and/or reclamation of the facility. The 17 positions associated with Drilling and Construction are planned as:

Warehouseman	Supervisor Drilling	Staff Geologist
Draftsman	Backhoe Operator	Casing Tech (3)
Geotech Logger (2)	Foreman WFC	Electrician WFC
Lead Tech WFC	Technician WFC (4)	

Production Operations: For the purposes of Figure RP-4, production will occur from the beginning of Year 1 through the second month of Year 3. Production includes injection of lixivient, production of uranium solutions, monitoring of solutions and wells, maintenance of wells and operation/maintenance of the plant facility. Because the surety bond calculation assumes shutdown of production after Mine Unit 1 (MU-1), all production associated personnel will cease work at the project after completion of their assignments except for those that will be employed in the restoration and/or reclamation of the facility. The 35 positions associated with production operations (not exclusively) are:

Mine Manager	Supervisor IT-Administration	Accountant
Technician Instrument	Technician IT	Secretary
Supervisor EHS	Technician EHS	Sampler EHS
Site Chief Geologist	Project Engineer	Foreman Maintenance
Technician Maintenance (4)	Electrician Maintenance	Manager Operations
Foreman Operations	Wellfield Operator (4)	Tech WF Maintenance (3)
Foreman Plant	Plant Operator (4)	Dryer Operator
Lab Chemist	Technician Lab (2)	

Restoration: For the purposes of Figure RP-4, restoration will occur in two phases: Active and Passive. Phase 1, Active Restoration, will include groundwater sweep, reverse osmosis and recirculation. This will occur from the third month of Year 3 through fifth month of Year 4. Phase 2, Sampling, will include stability sampling and regulatory approval. This will occur from the sixth month of Year 4 through the eighth month of Year 5. Personnel in theses phases will be responsible for plant operation and maintenance, field operation and maintenance and sampling. All associated personnel will cease work at the project after completion of their assignments except for those that will be employed in the reclamation of the facility.

The 14 positions associated with Phase 1 (Active Restoration) are:

Mine Manager	Supervisor EHS	Technician EHS
Sampler EHS	Electrician Maintenance	Plant Operator (4)
Lab Chemist	Restoration Operator (4)	

The six positions associated with Phase 2 (Sampling) are:

Mine Manager	Supervisor EHS	Technician EHS
Sampler EHS	Electrician Maintenance	Lab Chemist

Reclamation: For the purposes of Figure RP-4, reclamation will occur from the ninth month of Year 5 through the eighth month of Year 6. Reclamation includes plugging of wells, demolition and removal of all production systems and removal of roads. The nine positions projected for reclamation are:

Mine Manager	Supervisor EHS	Technician EHS
Backhoe Operator	Electrician Maintenance	Technician Reclamation (4)

LQD (11/09) - Response partially acceptable. The information presented in the response to comments needs to be incorporated into the permit in section RP 5.0. The projected restoration workforce appears to be very lean. Please address the following considerations:

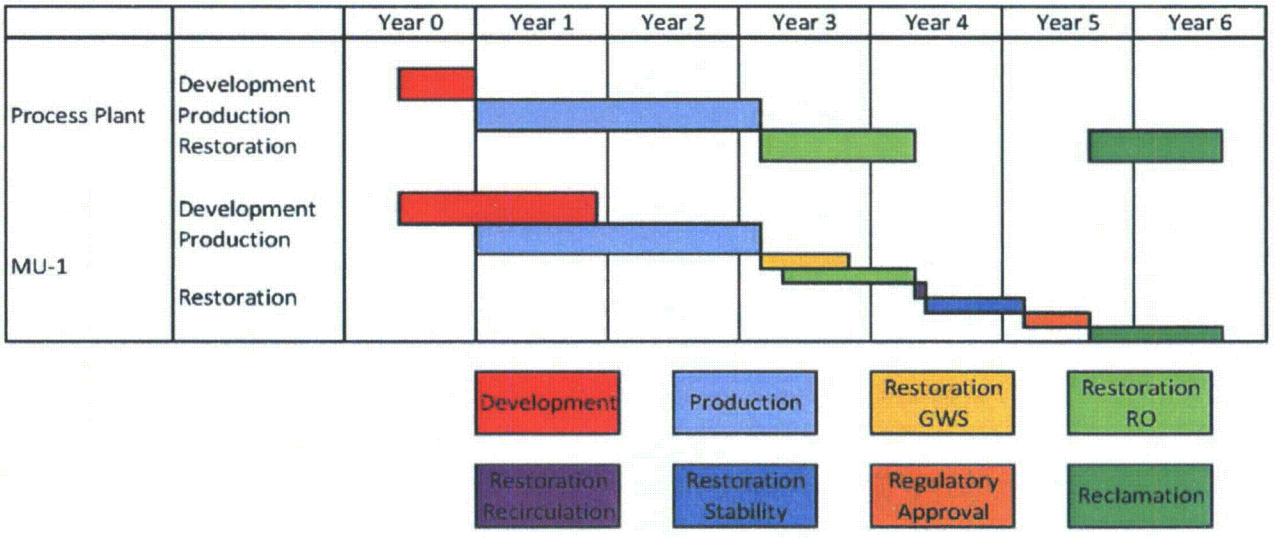
a. Restoration will be conducted on a 24 hour, 7 days per week basis.

The bond calculation assumes restoration will be conducted on a 24 hour, 7 day per week basis. Worksheet 1 – Groundwater Restoration details the labor required for the groundwater restoration portion (0.3 pore volumes groundwater sweep, 6 pore volumes reverse osmosis, 1 pore volume recirculation and 9 months stabilization). The figures below support the labor requirements as well as the timing for restoration for the first mine unit.

Lost Creek - Bond Restoration Schedule - Mine Unit 1 - Rev. 021410

Area	Module	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
		YEAR 4																						YEAR 5												YEAR 6								
PLANT	Production																																										
	Groundwater Sweep																																										
	Reverse Osmosis																																										
	Reclamation																																										
MU-1	1-1	GWS		RO												SEAL	STABILIZATION							REGULATORY APPROVAL								RECLAMATION											
	1-2	GWS			RO																																						
	1-3	GWS				RO																																					
	1-4		GWS				RO																																				
	1-5		GWS					RO																																			
	1-6		GWS						RO																																		
	1-7			GWS						RO																																	
	1-8				GWS						RO																																
	1-9					GWS						RO																																
	1-10						GWS						RO																																
	1-11							GWS						RO																															
	1-12								GWS						RO																														
	Headcount	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	9	9	9	9	9	9	9	9	9	7	7	7	7	7	7	10	10	10	10	10	10	10	10	10	10	10	10
1	Mine Manager	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Accountant	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Technician EHS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Sampler EHS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Backhoe Operator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Electrician Maint	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	Foreman Operations	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
4	Plant Operator	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4																												
1	Lab Chemist	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
4	Restoration Operator	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4																												
4	Reclamation Crew																															4	4	4	4	4	4	4	4	4	4	4	4

Bond for MU-1 Restoration Schedule



b. Uranium will be produced during restoration.

Uranium will likely be produced during restoration as part of the groundwater cleanup process. As it is produced, it will be treated in the same manner as which it was during production.

c. Maintenance operations must continue in all areas through the restoration and stability period, including the plant and the wellfield. RO units have high maintenance requirements.

During restoration activities, all operating systems will require routine maintenance at a level commensurate with the operating level. Plant and Wellfield Operators along with other maintenance and operating personnel will assist in all routine maintenance activities of operating systems. Therefore, the manpower bonded for in the above figures and in Worksheet 1 of the Bond Calculation is satisfactory to maintain the facility during restoration.

d. MIT's must be conducted on wells at least through the active restoration period.

Well MIT's are required prior to operation and every five years during the life of the well. The above figures show that no well will be required to have a second MIT prior to final plugging because its life is less than five years. Should it become necessary to retain the well for five or more years, the bond can be adjusted through the annual review process.

e. All monitoring, sampling, analysis and reporting requirements continue through restoration and stabilization.

Correct. Field activities will be performed by Wellfield Operators, the Sampler and the EHS Technician. Reporting will be completed by the Mine Manager and the EHS Supervisor.

f. The facility must be manned on a 24/7 basis.

Correct. The bond includes costs for four Plant Operators and four Wellfield Operators. The facility will always be staffed by at least one Plant Operator and one Wellfield Operator.

g. The restoration/reclamation will take approximately 4 years, yet the labor worksheet (page 12 of 37) only covers 2 years.

Incorrect. The above figures show that groundwater restoration and stabilization will take two ears. The bond calculation, Worksheet 1 details the labor required to perform the restoration and reclamation tasks.

h. Labor costs must include benefits and should be no less than $35/hr. (MM)

The statutes, rules and regulations (W.S. 35-11-428(a)(iii)(J) and WDEQ NonCoal Rules and Regulations, Chapter 11, Section 5(a)(iv) & (xiii)) require that estimated costs should be computed in accordance with engineering principles. LC ISR, LLC's application cites Carbon County, Wyoming (Rawlins) as having a $28,483 average per capita income. This equates to an average pay rate of $13.67 per hour. The bond calculation allows for $20 per hour including benefits.

The Federal minimum wage requirement as of this response is $7.25 per hour.

The bond estimate has been revised to a minimum loaded rate of $30.00 per hour as requested.

25) *LQD (1/09) - Section RP 5.0 Financial Assurance. Paragraph one. Please add the cost of groundwater monitoring and analysis to the list of costs. (**AB**)*

LC ISR, LLC (10/09) - The costs associated with groundwater monitoring and analysis are dispersed within the existing bond estimate and are not just incorporated as the 0.5% allotted for on-site monitoring under the Miscellaneous Costs Associated with Third Party Contractors in the Bond Summary (Page 1 in Table RP-4). For example, in Worksheet 1 (Groundwater Restoration), there are entries in Item IV (Stability Monitoring) specifically for the samples collected during that phase and in Item V (Labor), there are costs for a Sampler and for a Chemist. The surety will be reviewed annually and adjusted to reflect changes in cost and in the Project.

LQD (11/09) - Response not acceptable. Aside from the monitoring during the stability period mentioned in the comment response, there does not appear to be any sampling and analysis cost included during the active restoration phase of the operation. (MM)

LC ISR, LLC (2/10) - Worksheet 1 of the bond calculation includes the following line items:

Groundwater Sweep Analysis ($/KGals)	$0.060	On site laboratory analysis	Unit Rate
Reverse Osmosis Sampling & Analysis ($/KGals)	$0.060	Estimate	Unit Rate

26) *LQD (1/09) - Table RP-4 Reclamation / Restoration Bond Estimate. Groundwater sampling and analysis could be conducted for many years, and should not be handled as a overhead cost of 0.5%, but as a separate line item in the bond estimate. Please indicate the initial number of monitoring wells that will be in place at the initial start-up of the mine and calculate their cost for sampling and analysis based real costs. (AB)*

LC ISR, LLC (10/09) - Please see response to previous comment.

LQD (11/09) - Response not acceptable. See comment no. 25 above. (MM)

LC ISR, LLC (2/10) - Please see response to previous comment.

27) *LQD (1/09) - Table RP-3, Seed Mix: It is requested that the seed mix be revised, contingent on BLM concurrence, to eliminate Prairie sandreed and Rubber rabbitbrush. This would reduce the overall seeding rate to 15 lbs/ac which is a more reasonable drill seeding rate. This lower seeding rate would be more conducive to sagebrush establishment, which is a primary focus of the revegetation efforts. Prairie sandreed is not native to the area and is not adapted to the arid conditions of the Red Desert. Rubber rabbitbrush is native, however it is not particularly desirable. Species that could be listed as possible alternates would include winterfat, needle-and-thread and squirreltail. (MM)*

LC ISR, LLC (10/09) - LC ISR, LLC has sent a letter to BLM requesting concurrence on WDEQ-LQD's requested changes to the seed mix, including elimination of Prairie sandreed and Rubber rabbitbrush, which results in an overall seeding rate of 16 lbs/acre, and identifying needle-and-thread and bottlebrush squirreltail as alternatives (for all but sagebrush). If BLM concurs, LC ISR, LLC will update Table RP-3.

LQD (11/09) - Comment remains outstanding pending a response from the BLM. (BRW for MM)

LC ISR, LLC (2/10) - The requested changes to the seed mix were approved in an e-mail dated January 14, 2010 from M. Newman (BLM) to J. Cash (LC ISR, LLC) and M. Bautz (WDEQ-LQD). Table RP-3 has been updated to reflect the approved changes.

28) *LQD (1/09) - Please provide a sediment control plan for the reclamation phase of the operation. (BRW)*

LC ISR, LLC (10/09) - The Storm Water Pollution Prevention Plan (Operations Plan Attachment OP-4) addresses sediment control for the life of the mine (cross-referenced in the second paragraph in Section RP 4.5).

LQD (11/09) - Response not acceptable. Thank you for providing the cross reference to SMPP. The comment remains unacceptable until resolution is reached to Comment OP #19. (BRW)

LC ISR, LLC (2/10) - Please see Response to Comment V5, OP#19.

30) *LQD (1/09) - A new section should be added to the Reclamation Plan entitled "Determination of Successful Groundwater and Site Restoration". The purpose of this section is to clearly state unequivocally the criteria that will be used by the WDEQ/LQD to determine whether the site has been adequately restored. It is envisioned that this section of the Reclamation Plan may become more pertinent as staff in Lost Creek ISR and WDEQ/LQD change over the upcoming 10 to 20 years. Fulfillment of the criteria in this section will be required before the operator may request/achieve final bond release. This section should include the following six bond release criteria:*

a. *Ground water treatment/restoration using approved BPT as described in Section RP 2.3 (Groundwater Restoration Methods) of the Permit;*
b. *Achievement of baseline ground water conditions. If baseline is unachievable, proceed to c.;*
c. *If baseline ground water conditions are unattainable, achievement of approved Class of Use is required;*
d. *Ground water stability monitoring of a 12 month duration with quarterly sampling (i.e. a total of 5 sampling events). If water quality trends during stability monitoring indicate class of use standards are (or will be) exceeded, the operator must return to step "a" above). Alternately if class of use standards, at a minimum, are met for the 12 month period then the well field will be considered eligible for bond release;*
e. *Reclamation of surface disturbance as described in the Reclamation Plan of the Permit which shall include all requirements of LQD Chapter 11, Section 5;*
f. *Documentation of LQD and landowner (primarily BLM) concurrence that the project is adequately reclaimed to the standards outlined in the approved WDEQ\LQD permit.*

The above bond release criteria can be considered on a well field by well field basis. Once criteria a – d have been met, the operator may request partial bond release for an individual well field. Final bond release cannot be considered until all of six of the above criteria have been met by the operator. ***(MLB and BRW)***

LC ISR, LLC (10/09) - Pursuant to discussions on June 22, 2009 in Casper between WDEQ and LC ISR, LLC, please see the Response to Comment V5, RP #1.

LQD (11/09) - Response not acceptable. The reviewer's concede that LC has expanded the discussion on the various methods to be used during ground water restoration. However, there is still disagreement concerning what constitutes a reasonable stability period and the number of samples required, see Comment RP #7. Additionally, the reviewer's believe it is in the best interest of LC as well as the LQD to clearly define the success criteria to which bond release will be judged instead of having pieces in various sections. Please see the original comment and revise the text as requested. (BRW for/and MLB)

LC ISR, LLC (2/10) -

With regard to the stability period, please see Response to Comment V5, RP#7.

With respect to the permit organization, LC ISR, LLC believes Items (a) through (f) identified in the original LQD comment are logically grouped in the existing RP sections and are in keeping with LQD guidance. In contrast to the reviewer's request, the March 2007 LQD ISR In Situ Mining Permit Application Requirements Handbook indicates there should be separate "Restoration and Reclamation Plans". LC ISR, LLC has not completely separated the groundwater and surface reclamation, but has tried to organize the description of the restoration and reclamation steps in the approximate order in which they will occur, especially as the surface reclamation cannot be completed until groundwater restoration is complete.

The first four items in the LQD comment relate to groundwater restoration. However, the first four items are not listed in the order in which they will necessarily occur; therefore, LC ISR, LLC does not consider it appropriate to incorporate the comment wording into the permit document. For example, an operator's evaluation of whether stability sampling should begin is generally based on groundwater quality information collected during restoration, not whether all possible restoration technologies have been exhausted. As another example, if the groundwater quality restoration criteria are met, a determination of whether or not Best Practicable Technology has been applied may be moot. (As noted in LC ISR, LLC's October 2009 Response to Comment RP#1, the in situ rules also imply that the determination of what constitutes BPT is not made *a priori*, rather it is made after the operator has completed some restoration effort (LQD NonCoal Rules, Ch. 11, §5(a)). In addition, changes in technology may also make an *a priori* decision moot between the time a mine unit is approved and mining completed.)

LC ISR has developed a brief "success criteria" list and inserted it as Table RP-1a. (The existing Table RP-1 was renumbered as Table RP-1b.) The criteria were developed after careful consideration of standing regulations, guidance, and commitments in the Reclamation Plan. It is our goal that this list will provide concise criteria by which future LQD personnel can measure the success of groundwater restoration and reclamation and ultimately provide a basis for timely approval of groundwater restoration and bond release.

MINE PERMIT VOLUME 5 of 5: Operations Plan and Reclamation Plan

MINE PERMIT VOLUME 5 of 5: Operations Plan and Reclamation Plan continued

MINE PERMIT VOLUME 5 of 5: Operations Plan and Reclamation Plan continued

MINE PERMIT VOLUME 5 of 7: Operations Plan and Reclamation Plan continued

MINE UNIT VOLUMES - Separate Submittals

FIGURES (continued)

MINE PERMIT VOLUME 3a of 5: Appendix D - Main Permit Area (D6)

FIGURES (continued)

MINE PERMIT VOLUME 3a of 5: Appendix D - Main Permit Area (D6) continued

MINE PERMIT VOLUME 3b of 5: Appendix D - Main Permit Area (D6)

No Figures - See List of Attachments

FIGURES (continued)

FIGURES (continued)

TABLES (continued)

TABLES (continued)

MINE PERMIT VOLUME 5 of 5: Operations Plan and Reclamation Plan (continued)

MINE UNIT VOLUMES - Separate Submittals

PLATES (continued)

ATTACHMENTS (continued)

MINE PERMIT VOLUME 7 of 7: Operations Plan and Reclamation Plan

MINE UNIT VOLUMES - Separate Submittals