COLORADO OFFICE
10758 W. CENTENNIAL RD., STE. 200
LITTLETON, CO 80127
TEL: (866) 981-4588
FAX: (720)-981-5643

WYOMING OFFICE
5880 ENTERPRISE DR., STE. 200
CASPER, WY 82609
TEL: (307) 265-2373
FAX: (307) 265-2801

LOST CREEK ISR, LLC

January 15, 2014

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

Re: Submittal of Generalized Plan for Topsoil/Vegetation Conservation in Successive Mine Units
Lost Creek ISR Project PT788

Dear Ms. Bautz,

This letter has been submitted by Lost Creek ISR, LLC (LCI) in response to an action item as a result of the WDEQ-LQD Annual Inspection at the Lost Creek ISR Project in November. The action item was documented in the Inspection Memorandum for the Annual Inspection dated November 25, 2013 (Action Item #5). The same action item was also included in the December monthly inspection report dated January 7, 2014 (Action Item #11). The original deadline for providing a response was December 31, 2013 but at the request of LCI had been extended to January 15, 2014 with approval by LQD.

The action item reads as follows:

"*Submit a written response addressing the topsoil loss topics indicated in this report. The written response must include plans for the protection of topsoil in future mine units at the site.*"

The Topsoil Conservation Plan to address the action item is provided as an attachment to this letter. If you have any questions regarding this submittal please contact me at the Casper Office.

Sincerely,

Michael D. Gaither
Manager EHS and Regulatory Affairs
Ur-Energy USA, Inc.

Attachments: As stated

Cc: Mr. Mark Newman, BLM Rawlins Field Office, via e-mail
Mr. John Saxton, NRC, via e-mail
Ms. Theresa Horne, Ur-Energy, Littleton Office, via e-mail

COLORADO OFFICE
10758 W. CENTENNIAL RD., STE. 200
LITTLETON, CO 80127
TEL: (866) 981-4588
FAX: (720) 981-5643

WYOMING OFFICE
5880 ENTERPRISE DR., STE. 200
CASPER, WY 82609
TEL: (307) 265-2373
FAX: (307) 265-2801

LOST CREEK ISR, LLC

MEMORANDUM

Date: January 15, 2014

To: Melissa Bautz, WDEQ-LQD

From: Michael Gaither, Ur-Energy

Subject: Topsoil Conservation Plan for Successive Mine Units at the Lost Creek ISR Project

This Topsoil Conservation Plan was developed as a supplement to the Permit to Mine Operations Plan in response to a request by WDEQ-LQD to provide "…plans for the protection of topsoil in future mine units at the site". This plan outlines the approach by Lost Creek ISR, LLC (LCI) to protect topsoil in future mine units in response to the outcome of constructing Mine Unit 1.

Following construction of Mine Unit 1 (MU1) at the Lost Creek ISR Project, vegetation had been denuded over a large percentage of the wellfield pattern area within MU1 and apparent degradation of topsoil had occurred. During previous inspections, WDEQ-LQD had observed significant wind erosion of the topsoil compounded by the loss of covering vegetation during days of higher winds. Following the Annual Inspection, LQD requested a response on how LCI would address topsoil and vegetation conservation for future mine units to prevent the large-scale loss of vegetation and degradation of topsoil. In order for future mine units to be constructed and operated more consistent with the Permit to Mine and with LQD regulations, this generalized Topsoil Conservation Plan has been prepared.

The approved Operations Plan (OP) of the Permit to Mine provides the directives for topsoil management during mine unit construction. Topsoil management objectives in the OP were developed to be consistent with LQD Rules and Regulations notably Chapter 11 Section 4(a)(iii). Excerpts from Section 2.5 of the OP provide key elements for the proper management of topsoil:

- "Vehicular traffic will be minimized during operations and restricted to specific routes. In particular, traffic routes will be established within mine units." (OP pg 11)
- "Per WDEQ-LQD requirements, topsoil will not be stripped from areas where there is minor disturbance, such as light-use-roads, monitoring stations, fences, and drill sites (except for the mud pits); however, topsoil will be removed in situations where it cannot be protected from erosion or loss of soil resource, such as trenches, mud pits, and buildings. (OP pg 13)
- "Topsoil will be stripped from a monitor well road (or portion of the road) if the road must be upgraded to maintain its integrity." (OP pg 13)

- "By leaving topsoil in place where possible, even if the vegetation is disturbed, at least some of the vegetation is expected to survive, and the root system will help maintain the soils integrity thereby minimizing wind and water erosion." (OP pg13)

To provide a topsoil conservation plan for future mine units, several alternatives for the preservation of topsoil and vegetation were explored by LCI. It is LCI's understanding that the suggested percentage of vegetation to be preserved is 50% within the wellfield pattern area. For perspective, the projected pattern area of MU2 is approximately 140 acres with potentially an additional 25 acres of pattern area. The goal of LCI is to maintain at least 70 acres of vegetation in MU2. In comparison, MU1 had approximately 72 acres of pattern area with an apparent majority loss of vegetation. The permanence of the vegetation loss in MU1 has yet to be evaluated.

The alternatives that were explored are as follows:

1. Strip 100% of topsoil within wellfield pattern boundaries
2. Strip only the top 6 inches over entire pattern area
3. Leave topsoil in place but designate travel routes and fence off areas to be preserved
4. Partial topsoil stripping with designated travel routes

Option 1:
This option would entail complete stripping of topsoil down to subsoil over the entire pattern area within the mine unit. Based on a study of topsoil loss done by Melissa Bautz of LQD, it had been suggested that 100% stripping of topsoil may be an alternative to reducing topsoil loss due to wind erosion. The bundling of topsoil in stockpiles would reduce the surface area of the soil and thereby reducing the amount of wind erosion. However, the negative aspects of this alternative outweigh the benefits of topsoil loss. The removal and stockpiling of topsoil would require a dirt-work contractor at a large cost (approx. $500,000) and significant time not to mention additional reclamation efforts. The topsoil stockpile footprint area needed would be on the order of acres. Protection from wind and water erosion of the subsoil would require additional efforts and continuous dust control would be necessary. Benefits would include unfettered access to all of the wellfield for drilling and pipeline installation and could potentially provide the greatest protection from topsoil wind erosion loss as determined by Bautz's topsoil loss calculation. Moreover, this option is not consistent with what is described in the OP and would likely require a Permit revision.

Option 2:
This option is similar to Option 1 except only the top 6 inches of topsoil would be stripped and stockpiled. Some of the root base would remain in the soil for protection from erosion and to maintain reclamation viability. This would reduce the quantity of soil to be stockpiled and reduce the time and cost of stripping. However, the option would only be cost effective if it was done all at the same time. The threat of wind erosion would still remain and dust control would need to be implemented. Travel routes would still need to be limited and delineated due to the potential compaction of the existing topsoil.

Option 3:
This option requires restricting access to areas that are outside of wellfield patterns and the delineation of travel routes within patterns by the use of stakes, posts, or fencing. This option would theoretically preserve the most topsoil and vegetation but would make access to the wellfield components most limited. Additional time, manpower, and oversight of contractors would be necessary to keep vehicles from straying into undisturbed areas. A substantial amount of materials for delineation of routes would be

required. The fencing required to block access to areas outside of pattern areas is estimated at approximately 30,000 linear feet at roughly $0.75 per foot. However, the limiting factor of this option is the disturbance due to the installation of the lateral pipelines to individual wells and not necessarily disturbance due to drilling or vehicle traffic. Travel routes could not be delineated until pipeline installation is complete and at that point significant disturbance would have already occurred. This is the most consistent with what is currently written in the OP and would not require any permit amendments.

Option 4:
This option is a combination of Options 2 and 3. This option entails partial stripping (i.e. only the top 6 inches or so) of topsoil as necessary in areas where wellfield components are concentrated and delineation of travel routes would be difficult. This option would allow for flexibility in access to wellfield components but would eliminate a percentage of vegetation. Topsoil would likely need to be stockpiled near the origin to prevent excessive hauling traffic and sufficient space for stockpiles within the pattern area could be limited. As with Option 3, there would still be the need for large amounts of delineation materials. This option would still be consistent with the OP as long as the stripping of topsoil is limited.

Tentative Plan for MU2
The tentative approach for Mine Unit 2 (MU2) follows most closely with Option 3 and elements of Option 4. A phased approach may be used in order to offset initial costs of preparation and delineation. MU2 would be divided into two portions with the first phase occurring in 2014 and the second in 2015. Each phase may include some or all of the following elements:

- Larger areas that should be preserved from disturbance will be fenced off such as with t-posts and a single strand wire.
- Travel routes will be designated for drilling purposes with temporary delineation such as with pin flags or cones. Drill pit construction will occur as normal with segregation of topsoil and subsoil. However, water truck impacts may be minimized through the use of hoses to deliver water from roadways as opposed to filling drill pits at the drill pad.
- Header house construction will occur as with MU1 with stockpiling of removed topsoil. Header house roads will be stripped of topsoil and supplemented with gravel.
- Trunkline installation will occur as per approved methods. See Permit NSR Change #5 from December 2012.
- During lateral pipeline installation, approximately the top 6 inches of topsoil will be stripped from the pathways of the well pipelines. The topsoil will be maintained temporarily in windrows or piles until the lines have been installed and wells have been completed.
- Areas of higher concentrations of wells may be stripped of the top 6 inches of soil over a larger area rather than only over the pipeline routes. Topsoil would likely be stockpiled near point of origin.
- Reseeding efforts will be observed in MU1 to determine the viability of soil suffering from vegetation loss and compaction. This information will be applied to determine the level of effort for conservation for the second portion of MU2 and other mine units.
- When construction activities have subsided, header house roads may be upgraded with gravel. Topsoil will be replaced in non-use areas around wells as appropriate. Travel routes to individual wells will be defined as feasible using indicators such as flagging or posts.

Following construction of MU2, topsoil conservation efforts will be evaluated for success to determine the continued approach for future mine units. At that time, enough time may have passed for seed growth to be evaluated in MU1. Changes may be implemented to this plan as necessary in the future. END