Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

January 10, 2017

Mr. Scott Schierman
Uranium One USA, Inc.
907 North Poplar Street, Suite 260
Casper, WY 82601

RE: LQD Request for Additional Information; Uranium One, Willow Creek ISR Project, Christensen Ranch Mine Unit 8 Monitoring Reduction, Permit No. 478, TFN 6 1/243

Dear Mr. Schierman:

The Wyoming Department of Environmental Quality-Land Quality Division (LQD) District 3 received the subject request for a reduction in the underlying aquifer monitoring program associated with Willow Creek Mine, Christensen Ranch Mine Unit 8 on December 16, 2016 under Uranium One's cover letter dated December 15, 2016. Review of Uranium One's letter finds that a Non-Significant Revision to Permit 478 will be required to process this request. LQD has reviewed the Willow Creek permit and has identified the need for additional information in order to revise the permit in accordance with Uranium One's request. Please see the attached memorandum and provide the information requested in LQD's review comments.

If you have questions, please contact me in the Sheridan District III Office (673-9337).

Sincerely,

Luke McMahan, P.G.
Project Geologist
WDEQ-LQD District 3

Attachment: L.McMahan Review Memorandum (1/10/17)

Cc: Jennifer Mickle, Cheyenne LQD (with attachment)
District III
Mr. Ron Linton, U.S. NRC, MS T-8F5, 11545 Rockville Pike, Rockville, MD 20852 (with attachment)

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WYOMING

MEMORANDUM

TO: File: **TFN 6 1/243**; Uranium One, Willow Creek ISR Project, Non-Significant Revision, Christensen Ranch, Mine Unit 8, Monitoring Reduction

FROM: Luke McMahan, Project Geologist, LQD District 3 LM

DATE: January 10, 2017

SUBJECT: Monitoring Reduction Request, Christensen Ranch Mine Unit 8, Underlying Monitoring Well 8DM4A; Failed MIT and Plug & Abandonment

Discussion

On November 3, 2016, Uranium One contacted the LQD permit coordinator for Willow Creek Mine Mr. Luke McMahan via phone call to discuss the recently failed MIT for the Christensen Ranch Mine Unit 8 underlying aquifer monitoring well 8DM4A. On November 7, 2016 Uranium One provided LQD District 3 (Luke McMahan) with a letter via email notifying LQD of Uranium One's intent to plug and abandon deep monitoring well 8DM4A due to the well failing MIT. On December 16, 2016, LQD District 3 received a hard copy letter from Uranium One, dated December 15, 2016, requesting a reduction in the underlying aquifer monitoring program in Mine Unit 8.

As discussed in the November 7 and December 15, 2016 letters, the information prompting Uranium One to conduct the MIT on 8DM4A included an increasing trend in potentiometric water elevations and UCL parameters. The well was tested and failed MIT on October 27, 2016. The MIT failure was isolated at 388 feet within the production zone, however, Uranium One was not successful in their efforts to positively identify the specific failure in the casing. The well was subsequently plugged & abandoned on November 9, 2016. In a phone call between Uranium One and LQD (Luke McMahan) on November 3, 2016, Mr. McMahan concurred with Uranium One's assessment that the well should be plugged & abandoned to address the potential for communication between the production zone and the deep monitoring zone as a result of the compromised well integrity. LQD notes that, the increasing trend discussed in the letters did not result in a non-compliance event.

Uranium One has indicated that Willow Creek Mine does not intend to replace 8DM4A and is requesting that the well be eliminated from the monitoring program. Two existing underlying

aquifer monitoring wells, 8DM6-A and 8DM7 are located in downgradient positions with respect to 8DM4A. As indicated in the Mine Unit 8 Wellfield Data Package (WFDP), the total wellfield pattern area for Mine Unit 8 is 47 acres. Uranium One's Monitoring Reduction Request indicates that the applicable pattern area associated with the deep monitoring zone is 29.5 acres (see Mine Unit 8 WFDP). With the abandonment of 8DM4A, the remaining underlying aquifer monitor well total of nine (9) wells provides one well per 3.3 acres of applicable pattern area. Section V of PT478 indicates that underlying aquifers will be monitored at a frequency of 1 well per 3.5 acres. LQD Guideline 4 indicates that the underlying aquifer should be monitored with a well density of 1 well per 4 acres. As a result the required well density is met with the remaining underlying aquifer monitoring wells.

Request for Additional Information and Comments

1. Section 5, Operations, Table 5.25 *Christensen Ranch Individual Monitor Well Upper Control Limits and Trend Well Action Limits*; please update this table (Page 5-80) to reflect the reduction in monitoring as well as updating the table to include all existing wellfields. LQD requests that 8DM4A remains on Table 5.25 with a note that the well was plugged and abandoned on such date due to failed MIT (or similar).

2. Regarding Quarterly Reports; LQD requests that this well remain in *Attachment B, Well Data* provided with each quarterly report, but with a Plugged and Abandoned statement in lieu of the sampling data (like is provided for wells that have insufficient recovery).

3. Please review the PT478 Operations Plan and Reclamation Plan and provide any revised materials that may be needed to adequately reflect this change in the monitoring program.

Summary

As indicated in the review comments above, additional information is needed for LQD to complete its review of Uranium One's request to modify the underlying aquifer monitoring program associated with Willow Creek, Christensen Ranch, Mine Unit 8.

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