



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

March 4, 2014

Mr. Ken Garoutte
Cameco Resources
P.O. Box 1210
Glenrock, WY 82637

RE: TFN 6 2/037, Impacts of Injecting into DP-022 without MIT, Well Excursions DM-003 & DM-004, Permit 603, Cameco Resources

Dear Mr. Garoutte:

The Land Quality Division (LQD) requested in letter dated December 9, 2013, that Cameco Resources schedule a meeting with the LQD by January 10, 2014, to address the impacts of using wells converted to injection use without conducting and passing a mechanical integrity test (MIT). The meeting was held on February 20, 2014. During the meeting, Cameco's environmental and hydrology staff concluded that the impact is minimal for the following reasons:

- DP-022 was used for only 28 days;
- the well was completed in the haulageway, not in the mining zone
- clean water was injected during the 28 day use
- injection pressure was approximately 5 psi at the surface with flow rate of 10 GPM
- overlying monitor wells would detect vertical migration

The LQD asked for specific information regarding the failure zone(s) of DP-022. The downhole camera was said to be inconclusive, however, pressure test information indicates that the failures are throughout the well at 20 foot intervals (or at each joint). The well was installed during the use of "glue and screw" completion procedures which has proved to have issues with multiple failures. The LQD expressed concern that residual production fluid from the well (used during mining) was displaced with the clean water injection and potentially could have leaked at multiple joint failures. Further, without a passing MIT, it is possible that the production fluid could have leaked through multiple joint failures during the use of the well for mineral production. In fact, there is a possibility that the excursion at DM-003 and DM-004 is the result of migration of production fluid from the failed well.

It is apparent that Cameco has not assessed the impacts of the use of the failed well adequately. The LQD denied the plugging of DM-004 until further assessment is made of the impacts. Cameco offered the information of shallow aquifer wells in the region to help with detection of the migration of production fluid. Although this will assist in the evaluation for impacts to the shallow aquifers, the lack of sufficient information to determine all of the failure zones where fluid migration has occurred is a serious concern. Cameco will need to further assess the failure of DP-022 and provide information that conclusively shows that all of the aquifers in the well have not been affected.

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According to Chapter 11, Section 7(a)(iv), *Before resuming injection into any Class III well that has been damaged by surface or subsurface activity or that has undergone an activity that may jeopardize the mechanical integrity of the well, such as the use of downhole cutting and underreaming tools, the operator must demonstrate the mechanical integrity of the well.* The LQD is considering a Notice of Violation for the lack of a successful MIT for DP-022.

According to Chapter 11, Section 11(d), *No operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection of mining-related activity in a manner that allows the movement of fluid containing any contaminant into zones or intervals other than those zones authorized in the approved permit or Research and Development Testing License. The operator shall have the burden of showing that the requirements of this paragraph are met.*

The LQD is continuing to evaluate a potential Notice of Violation for failure to comply with these citations. If you have any question, please contact me at pam.rothwell@wyo.gov or 777-7048.

Sincerely,



Pam Rothwell
District 1 Assistant Supervisor
Land Quality Division

cc: Cameco Resources, Cheyenne, WY
Doug Mandeville, NRC