

# Umetco Minerals Corporation



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April 15, 2014

Mr. Dominic Orlando, Senior Project Manager  
Decommissioning and Uranium Licensing Directorate  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
Mail Stop T-8F5  
11545 Rockville Pike  
Rockville, Maryland 20852

**Subject: Umetco Minerals Corporation, Groundwater Monitoring and Evaluation**  
**Reference: License SUA-648, Docket No. 40-0299**

Dear Mr. Orlando:

This letter is in response to the Nuclear Regulatory Commission (NRC) March 11, 2014 letter regarding NRC staff review of ground water monitoring results and evaluation at Umetco Minerals Corporation's (Umetco) Gas Hills, WY site.

As discussed during our April 3, 2014 conference call, Umetco is not necessarily in agreement with the NRC staff conclusion that there does not appear to be any attenuation of  $^{226+228}\text{Ra}$  at Monitor Well (MW) MW28. However, monitoring data collected subsequent to ACL approval does not provide adequate information to perform a detailed technical evaluation of the  $^{226+228}\text{Ra}$  trend at MW28 as well as other concerns noted in the March 11, 2014 letter. Consequently, the following describes various activities Umetco proposes to perform to address these issues.

- Prepare and re-run the original transport model to produce simulated concentrations vs. time at select monitor well locations downgradient of the site, such as MW28. The existing model data contains simulated concentrations at the POE as a function of time and simulated concentrations from the POC to the POE as a function of distance. Generating simulated concentrations, such as  $^{226+228}\text{Ra}$  at MW28 over time will allow direct comparison of monitoring data to simulated concentrations.
- As soon as weather and site conditions permit, Umetco will conduct a sampling event at the site. Sampling will consist of all wells, all ACL constituents, sulfate, chloride, and relevant analysis for U isotopic evaluation.

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- Review pertinent historical operation (waste disposal practices), groundwater corrective action plan (CAP) information and groundwater data that are related to radium and not readily available in the database.
- Using new and existing data, conduct a detailed evaluation of groundwater chemistry along the flow path to better understand the behavior of the “plume” in relation to observations at the site wells, i.e., U isotopes, Piper diagrams, timing of concentrations trends, etc.).
- Generate concentration contours (isopleths diagrams) for specific time frames, such as, 1985, 1995 (during performance of groundwater CAP), 2005 (post CAP, if data is available), current (based on spring 2014 sample results). Isopleths should graphically show the degree of attenuation that has occurred as the plume migrates.

Umetco will complete the acquisition of data and evaluations discussed above and provide a report to NRC for review and discussion. Based on the results of this evaluation, Umetco will then propose appropriate actions, if necessary and appropriate, in the form of a license amendment request. Any amendment request prior to completion of the evaluation would be speculative and would likely not result in resolution of the issue.

Please contact me at 970-256-8889 or by e-mail at [gieckte@dow.com](mailto:gieckte@dow.com) if you have any questions or concerns.

Regards,



Thomas E. Gieck  
TEG/jfc

Cc: Scott Surovchak - DOE  
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