

# Umetco Minerals Corporation



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August 8, 2018

Mr. Dominick Orlando, Senior Project Manager  
Materials Decommissioning Branch  
Division of Decommissioning, Uranium Recovery and Waste Management Programs  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
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Rockville, Maryland 20852

Subject: **Umetco Minerals Corporation, Gas Hills, Wyoming, Site**  
**1. Response to Nuclear Regulatory Commission Letter dated April 18, 2018,**  
**2. License Amendment Request**

Reference: **Radioactive Materials License SUA-648; Docket No. 40-0299**

Dear Mr. Orlando:

This letter is pursuant to our telephone conversation of August 2, 2018, in which you requested clarification of Umetco Minerals Corporation's (Umetco's) May 22, 2018, letter which contained a response to the April 18, 2018, Nuclear Regulatory Commission (NRC) letter and a request for an amendment to Umetco's Radioactive Materials License SUA-648. As such, this letter clarifies Umetco's response to the April 18, 2018, NRC letter and modifies Umetco's license amendment request contained in Umetco's May 22, 2018, letter.

## ***1. Response to NRC's concerns detailed in the letter of April 18, 2018***

The April 18, 2018, letter detailed the NRC staff's review of Umetco's *July 2016 through June 2017 Annual Report* and requested an evaluation of the impact that the estimated sample values had on the report because there were a number of analytical results reported as being "estimated" and the use of estimated sample results was not addressed in the report.

The following provides an evaluation of analytical data in the *July 2016 through June 2017 Annual Report*.

Umetco's data validation activities result in a complete analytical data package that informs future data users as to the limitations, if any, on the use of the data. Data validation may result in the assignment of data qualifiers as defined in U.S. Environmental Protection Agency's *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*.

Although a number of analytical results in the *July 2016 through June 2017 Annual Report* were qualified as estimated, the data were used to generate time series concentration plots and isoconcentration drawings in the annual report. Individual data points were found to be within the normal range of concentration values for the wells. For any analytes in question, Umetco made the determination of data usability by evaluating the individual analytical results with an outlier test in conjunction with professional judgement. Any data failing this test would have been rejected and, therefore, not used in the annual report. Accordingly, use of estimated values



is appropriate and does not have a detrimental impact on this report. The data validation process is performed to ensure data, including qualified data, are appropriate for the intended use.

## **2. Request for amendments to Umetco's Radioactive Materials License**

The following provides rationale and proposed wording changes for two License Conditions in Umetco's Radioactive Materials License. Each License Condition is addressed separately below.

### **A. License Condition 32 – Land Use Survey**

Umetco would like to modify the License Condition 32 requirement to perform Land Use Surveys within the five-mile radius of the Umetco's Gas Hills, Wyoming, Site.

The Department of Energy's (DOE's) *Draft Long Term Surveillance Plan for the Gas Hills East (UMTRCA Title II) Disposal Site Fremont and Natrona Counties, Wyoming*, (Draft LTSP), dated November 2010, proposes surveying the 0.25-mile zone beyond the site boundary for changes in land use. This reduced area is consistent with NRC-approved land use surveys conducted at other Title I and transferred Title II sites. Furthermore, since all licensed material has been encapsulated, the completed reclamation has reduced direct gamma exposures from tailings and waste to background levels. Historic dose assessment data for the Gas Hills Site indicate that doses to individual members of the public did not exceed the NRC annual dose limit of 100 millirems even while the repositories were open and reclamation was occurring. The gamma dose to the public has historically been approximately 58 millirems.

To be consistent with DOE's Draft LTSP, and because reclamation is complete, no licensed materials are exposed, and radiation levels have been reduced to essentially background levels, Umetco proposes to reduce the land use survey area to the 0.25-mile zone around the site boundary.

Umetco proposes the following change (underlined/strike through) to License Condition 32:

*The licensee shall conduct an annual survey of land use (private residences, grazing areas, private and public potable water and agricultural wells, and non-residential structures and uses) in the area within one quarter (0.25) five (5) miles (0.48 km) of any portion of the restricted area boundary and submit a report of this survey to the NRC. This report shall indicate any differences in land use from that described in the last report.*

### **B. License Condition 35 – Monitoring Well MW70A**

Umetco would like to delete monitoring well MW70A from the April 2015 *Groundwater Monitoring Plan* referenced by License Condition 35 and abandon the well.

As detailed in Umetco's April 8, 2015 letter, Umetco proposed a monitoring well location to replace MW70A in order to address NRC's concerns of November 6, 2014, relating to uranium migration from MW1 and its non-concurrent decrease at MW70A, as well as Umetco's concern that MW70A appears to be providing consistent but perhaps erroneous data. Long-term monitoring of MW70A has indicated stagnant conditions which are not representative of either local groundwater conditions or upgradient groundwater conditions. As detailed in Umetco's April 2015 response letter, Umetco's evaluation of the historic uranium, chloride, and sulfate



trends at MW1 and MW70A was inconclusive in determining evidence of groundwater migration from MW1 to MW70A, as seen by the inconsistent major ion signatures and expected travel times for the indicator constituent concentrations between the two wells. Additionally, trends in uranium and other constituents at MW70A have historically been uncharacteristic of site groundwater which leads Umetco to suspect stagnant conditions exist at MW70A and not representative of either local groundwater conditions, or of groundwater migrating from MW1.

Since the replacement well, MW84, approved for construction by License Amendment 74 dated January 19, 2017, was completed on October 17, 2017, and since MW84 has been screened in the same groundwater horizon as MW70A, i.e. in the upper portion of the aquifer and located in a manner better suited to provide evaluation of radium attenuation, Umetco requests NRC concurrence to abandon MW70A.

Umetco proposes the following wording (underlined/strike through) to License Condition 35 along with the revised *Groundwater Monitoring Plan* which is attached with and without edits:

*The Alternate Concentration Limits (ACL) for ground water contained in Umetco's application dated May 11 and May 18, 2001, as revised by submittals of July 30, ~~2001~~, and December 3, 2001, March 4 and October 2, 2002, June 17, 2005, October 31, 2011, January 22, ~~2015~~ and April 8, 2015, and August 8, 2018 have been approved for this site. The licensee shall implement a ground water compliance monitoring program that includes the following:*

*A. Conduct monitoring as described in the Ground Water Monitoring Plan and as discussed in Umetco's January 22, ~~2015~~ and April 8, 2015 and August 8, 2018 requests. The licensee shall submit this monitoring data, in the form of a Ground Water Conditions report, to the NRC by September 30th of each year and include ground water contour maps, contamination iso-concentration maps, and trend graphs. The licensee shall include a thorough description of all model simulations and any further revisions to the geochemical model in the evaluation in the Ground Water Conditions report. The licensee shall provide electronic copies of all model input files used in the evaluation. The licensee shall submit to the NRC a final Ground Water Conditions report for verification once the licensee validates the model predictions for a time period that has been approved by the NRC. The final, as built, completion reports for the new monitoring wells shall be included in the first Ground Water Conditions report following completion of well installation.*

If you have any questions concerning this request, please contact me at 970-243-3260, or by e-mail at [gieckte@dow.com](mailto:gieckte@dow.com).

Regards,



Thomas E. Gieck

Attachment: Revised *Groundwater Monitoring Plan*, Gas Hills, Wyoming, August 2018 with and without edits