

**TECHNICAL EVALUATION REPORT FOR UMETCO MINERALS CORPORATION'S
PROPOSED 2016 FINANCIAL ASSURANCE SURETY UPDATE FOR THEIR GAS HILLS
URANIUM TAILINGS SITE, FREMONT AND NATRONA COUNTIES, WYOMING**

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FACILITY: Umetco Minerals Corporation – Gas Hills Uranium Tailings Site,
Fremont and Natrona Counties, Wyoming

TECHNICAL REVIEWERS: Dominick Orlando, Mirna Flores

PROJECT MANAGER: Dominick Orlando

SUMMARY AND CONCLUSIONS

By letter dated May 26, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16176A274), Umetco Minerals Corporation (Umetco) submitted its 2016 annual financial assurance surety update for its Gas Hills uranium tailings site in Fremont and Natrona Counties, Wyoming.

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the 2016 surety update, in the amount of \$1,428,283.25, for Umetco's Gas Hills site. The NRC staff has determined that the 2016 annual surety update meets the NRC's regulatory requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 40, Appendix A, Criteria 9 and 10. Therefore, the NRC staff finds that the annual surety update is acceptable, pending Umetco's submittal of a revised Standby Trust Agreement and Surety Bond to increase the coverage amount of the previously approved 2015 surety amount from \$1,423,985.67 to \$1,428,283.25.

BACKGROUND

The Umetco Gas Hills site is located in a remote area of Wyoming, in Fremont and Natrona counties, approximately 60 miles east of Riverton, Wyoming. The restricted area of the site consists of approximately 542 acres, of which Umetco owns 280 acres. The remainder of the site is under the jurisdiction of the U.S. Bureau of Land Management. The mill was constructed in 1959 and was shut down in 1984. Mill building decommissioning was completed in 1993.

Site reclamation was completed in 2006 and accepted by the NRC in 2008. During field inspections of the tailings and pile in 2009, Umetco identified incisions and rills on the tailings pile cover. Umetco determined that the incisions and rills were due to a deficiency in the design of the erosion protection system for the cover. In December 2010, Umetco proposed a solution to the deficiency and the NRC approved Umetco's proposed Erosion Protection Enhancement in August 2011. The Erosion Protection Enhancement work was completed in 2011 and approved as complete by the NRC in 2012.

In 2001, Umetco submitted an application for Alternate Concentration Limits (ACLs) to address groundwater constituents-of-concern derived from historical milling operations at the site (ADAMS Accession No. ML011440258). The ACL application was supported by groundwater flow, solute transport, and geochemical models. To help validate these models, and provide ACL constituent attenuation information, Umetco prepared and implemented a groundwater monitoring plan that required the comparison of groundwater chloride and sulfate sampling results to corresponding model-predicted concentrations at four model validation wells. Between 2010 and 2012, measured concentrations of chloride and sulfate exceeded model predictions in monitoring well MW28, located along the groundwater flow path between the Western Flow Regime (WFR) Point of Compliance and Point of Exposure. In addition, sampling results raised concerns that Radium-226 and Radium-228 were not attenuating as predicted in the model. Based on the sampling results, Umetco agreed to perform a groundwater evaluation of the WFR (ADAMS Accession No. ML14106A615).

TECHNICAL EVALUATION

The NRC staff evaluated the surety update in accordance with the regulations in 10 CFR Part 40, Appendix A, Criteria 9 and 10, and the guidance in NUREG-1620, Rev. 1, Appendix C. The staff finds that the licensee has met the requirement to submit its annual surety update three months prior to the annual due date of September 13. The licensee proposes to adjust its financial assurance from \$1,423,985.67 to \$1,428,283.25. The staff finds that the licensee properly relied on costs from a third party contractor, revisions to the groundwater monitoring plan, installation of four new wells, efficiency gains from prior groundwater evaluations, and re-baselining estimates, to reflect updated comparable industry cost estimates for a radiation officer, current property tax rates, and the Consumer Price Index applied to legal expenses and long-term surveillance and includes a 15 percent contingency factor. The NRC staff finds the licensee's proposal to adjust its financial assurance from \$1,423,985.67 to \$1,428,283.25 to be acceptable.

GROUNDWATER MONITORING

Umetco requested, and was authorized to use, ACL's for groundwater in March 2002. Excess wells have been reclaimed. Groundwater monitoring, as required by license condition, based on the costs of a third party contractor, four additional wells, additional constituents, and the previously proposed modifications to the monitoring plan (semi-annual to annual sampling), is estimated to increase from \$48,260.08 to \$48,386.07 (plus a 15 percent contingency factor) to account for inflation. The staff finds that the increased groundwater monitoring costs are acceptable, and are based on previously submitted estimates plus inflation and include third party contractor rates, four additional wells, additional constituents, and the previously modified monitoring plan (semi-annual to annual sampling).

INSTALLATION OF NEW WELLS

Umetco has proposed the installation of four additional monitoring wells to address the NRC concerns regarding constituent attenuation and groundwater model predictions. The installation of four new wells (including field oversight and related reporting), based on a third party subcontractor quote, is estimated to increase from \$101,976.32 to \$102,242.54 (plus a 15 percent contingency factor). The staff finds that the costs of the installation of four additional monitoring wells are based on a previously submitted estimates plus inflation, based on a third party sub-contractor rates, and are acceptable.

GROUNDWATER EVALUATION

Groundwater evaluations, as required by license condition, based on the costs of a third party contractor and efficiencies gained from previous database development and systematic tools, is estimated to increase from \$80,220.80 to \$80,430.23 (plus 15 percent contingency). The staff finds that the groundwater evaluation costs are based on previously submitted third party contractor rates plus inflation, and are acceptable.

MISCELLANEOUS COSTS

Umetco estimated the aggregate costs of legal expenses related to the land transfer, site property taxes, and the salary of a radiation safety officer to increase from \$126,588.83 to \$127,392.63 (plus a 15 percent contingency factor). The staff finds that these miscellaneous costs are based on legal fees increasing from \$86,235.83 to \$86,935.28 (plus 15 percent contingency) from inflation; an increase in property taxes from \$3,500 to \$3,509.14 (plus a 15 percent contingency factor) based on inflation; and an increase in radiation safety officer cost from a total cost of \$36,852 to 36,948.21 (plus a 15 percent contingency factor) based on inflation. The staff finds that Umetco's miscellaneous cost estimates are acceptable.

LONG-TERM SURVEILLANCE FEE

The Long-Term Surveillance Fee increases from \$881,233.38 to \$883,533.97 (plus a 15 percent contingency factor) based on inflation. In 2009 and 2010, the U.S. Department of Energy (DOE) submitted draft Long-Term Surveillance Plans (LTSPs) to the NRC for the Umetco Gas Hills site. Because of the need to address groundwater issues at the site, in 2014, the NRC and the DOE agreed that the NRC would suspend review of the draft LTSPs. When all issues are resolved and the LTSP is finalized, the final long-term surveillance fee will be established by the NRC.

PROPOSED LICENSE CONDITION CHANGE

Revise License Condition 55 to state: Umetco Gas Hills' currently approved surety instruments, a surety bond held by the Liberty Mutual Insurance Company and a standby trust agreement that is accessible to the NRC, shall be continuously maintained in an amount no less than \$1,428,283.25 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.