



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD
ARLINGTON TX 76011-4511

September 20, 2018

Mr. Thomas E. Gieck
Remediation Leader
Umetco Minerals Corp.
2764 Compass Drive, Suite 114
Grand Junction, CO 81506

SUBJECT: UMETCO MINERALS CORPORATION 040-00299 - NRC INSPECTION
REPORT 2018-001

Dear Mr. Gieck:

This letter refers to the announced, routine U.S. Nuclear Regulatory Commission's (NRC) inspection that was conducted on August 28, 2018, at the Umetco Minerals Corp. (Umetco), Gas Hills Facility in Natrona County, Wyoming. This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

The inspection findings were presented to Umetco's representative, Mr. Jason Smith, Management Contractor, AECOM, at the conclusion of the onsite inspection. The enclosed report presents the results of this inspection. Based on the results of this inspection, no violations were identified and no response to this letter is required.

In accordance with Title 10 *Code of Federal Regulations* 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

T. Gieck

2

Should you have any questions concerning this inspection, please contact Ms. Linda M. Gersey at 817-200-1299 or the undersigned at 817-200-1151.

Sincerely,

/RA/

Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket: 040-00299

License: SUA-648

Enclosure:

NRC Inspection Report 040-00299/2018-001

cc w/enclosure:

R. Schierman, WY Uranium Recovery Program Manager

D. Shafer, U.S. DOE, Office of Legacy Management

G. Cameron, WY Homeland Security

**U.S. NUCLEAR REGULATORY COMMISSION
Region IV**

Docket: 040-00299
License: SUA-648
Report: 040-00299/2018-001
Licensee: Umetco Minerals Corporation
Facility: Gas Hills Facility
Location: Natrona County, Wyoming
Inspection Date: August 28, 2018
Inspector: Linda M. Gersey, Health Physicist
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety
Approved by: Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Umetco Minerals Corporation Gas Hills Facility NRC Inspection Report 040-00299/2018-001

This inspection was a routine, announced inspection of decommissioning activities being conducted at the licensee's Gas Hills Facility in Natrona County, Wyoming. In summary, the licensee was conducting decommissioning activities in accordance with license and regulatory requirements.

Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning

- The licensee was conducting operations in accordance with license requirements. (Section 1.2)
- The tailings impoundment appeared to be in good condition with no observable degradation. (Section 1.2b)
- The licensee had installed four new groundwater monitoring wells to facilitate further groundwater evaluation. (Section 1.2c)

Report Details

Site Status

The Umetco Minerals Corporation (Umetco) Gas Hills site is a reclaimed uranium mill facility located in Natrona County, 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 uranium mill was constructed in 1959 and operated through 1984. The mill building decommissioning was completed in 1993. Site reclamation was completed in 2006 and approved by the U.S. Nuclear Regulatory Commission (NRC) in September 2008 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML081780142, ML081780626, and ML081770073).

During 2010, the licensee identified tailing impoundment deficiencies in the design and construction of the erosion protection cover. On December 21, 2010, the licensee submitted the "Above Grade Tailings Impoundment and A-9 Repository Erosion Protection Enhancement Design Report," (ADAMS Accession No. ML103640265) for NRC for review and approval. In this submittal, the licensee proposed to implement several repairs to the erosion cover. The NRC subsequently approved the licensee's proposal by License Amendment Number 64 dated August 22, 2011 (ADAMS Accession Nos. ML112060361 and ML112060380).

After issuance of License Amendment Number 64 in August 2011, the licensee conducted cover repairs in four areas: the above-grade tailings impoundment, A-9 repository, launch rock structure, and apron channel. The NRC reviewed and approved the licensee's completion report by License Amendment Number 67, dated May 11, 2012 (ADAMS Accession Nos. ML120790259 and ML120790266).

The U.S. Department of Energy (DOE) submitted a draft Long Term Surveillance Plan (LTSP) for the site in August 2009 (ADAMS Accession No. ML092250176). NRC letter dated August 22, 2014, documented the agreement between the NRC and DOE to suspend the review of the LTSP until the licensee's groundwater issues were resolved (ADAMS Accession No. ML16218A144). The August 22, 2014, letter states that the DOE should submit a revised draft LTSP after the licensee's groundwater issues are resolved.

Between 2010 and 2012, measured concentrations of chloride and sulfate exceeded model predictions in a monitoring well, located along the groundwater flow path between the Western Flow Regime (WFR) point of compliance and point of exposure wells. In addition, sampling results raised NRC concerns that radium-226 and radium-228 were not attenuating as predicted in the model. In January 2015, the licensee submitted a ground water evaluation plan for the WFR to the NRC for approval (ADAMS Accession No. ML15027A095). In January 2017, the NRC staff approved the licensee's proposed groundwater evaluation plan (ADAMS Package Accession No. ML15211A329). To facilitate the groundwater evaluation, the licensee installed four additional groundwater monitoring wells in the spring of 2017.

In other areas, the licensee continues to implement the groundwater monitoring program as required by License Condition (LC) 35. In addition, the licensee continues to prepare the site for future turnover to the DOE for long-term surveillance.

1 Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning (87654)

1.1 Inspection Scope

Determine if the licensee was maintaining the reclaimed site as required by the license and regulatory requirements.

1.2 Observations and Findings

1.2a Status of Inspection Frequencies

The previous NRC inspection was conducted on June 5, 2012 (ADAMS Accession No. ML12184A257). The focus of the June 2012 inspection was to ensure the licensee had performed the erosion enhancement construction activities in accordance with license requirements and to review the status of the groundwater monitoring program. The June 2012 inspection report concluded that the licensee had conducted construction activities and groundwater monitoring in accordance with the license and regulatory requirements.

Following the June 2012 inspection, NRC staff determined that routine inspections did not need to be completed in strict accordance with the NRC's Manual Chapter 2801, "Uranium Mill 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program" (found at <https://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/>). This determination was based on the limited scope of future activities of the licensee at the site and the anticipated turn-over of the site to the DOE. The DOE has made periodic site visits since 2012 in preparation for long-term surveillance. The most recent DOE site visit occurred in March 2018.

1.2b On-Site Inspection

The inspector conducted an on-site inspection on August 28, 2018, accompanied by the licensee's Management Contractor. The inspector noted that each entrance gate into the reclaimed area was posted with a sign stating, "Any area within this site may contain radioactive material," as required by LC 13. All fences appeared in good condition. The inspector did not observe any degradation of the rock covers on the tailings impoundment and the diversion channels. Due to wet ground conditions, the inspector was unable to drive near the areas where the erosion and impoundment cover enhancement work was performed in 2011. The inspector instead viewed the areas from a distance and noted that the area appeared stable without any new rills or erosion. The inspector also observed the locations of the four new groundwater monitoring wells that were installed in 2017 and did not identify any items of concern.

During the site tour, the inspector conducted radiation surveys using a Ludlum Model 19 microRoentgens survey meter calibrated with radium-226 (NRC Number 015530, calibration due date of July 12, 2019). The areas near the covered tailings were found to be approximately 24-34 microRoentgens per hour, which was the same as the background ambient gamma exposure rate.

1.2c In-office Document Review

The inspector reviewed licensee documents from the NRC Region IV office. Licensee documents that were not required to be submitted to the NRC were provided to the inspector by email for review. Telephone conversations were held between the inspector and the licensee representatives for clarification on records, as needed.

License Condition 10D, requires, in part, that the licensee perform initial and annual radiation safety refresher training to all licensee staff and contractors. The inspector reviewed the training records from 2013 through 2018. The training records included annual radiation safety refresher training for full-time AECOM/Umetco personnel, U.S. Department of Transportation Hazardous Materials training, and unescorted contractor training. The inspector concluded that the licensee had performed training in accordance with LC 10D.

License Condition 14, requires, in part, that the Radiation Safety Officer (RSO) meet the minimum qualifications specified in Section 2.4.1 of NRC's Regulatory Guide (RG) 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will Be As Low as Is Reasonably Achievable," Rev.1, dated May 2002 (found at: <https://www.nrc.gov/docs/ML0212/ML021260630.pdf>.) The inspector reviewed the qualifications of the proposed RSO as submitted to the NRC in letters dated August 13, 2014, and October 14, 2014 (ADAMS Accession Nos. ML14226A654 and ML14289A478, respectively). The inspector concluded that the proposed RSO met the education, training, and experience in Section 2.4.1 of RG 8.31.

License Condition 15 requires, in part, that the licensee establish written procedures which are reviewed by the RSO annually. The licensee documents the annual review of procedures in the Annual As Low As Reasonably Achievable (ALARA) Audit. The inspector reviewed the licensee's ALARA Audits for 2013 through 2018 and determined that the RSO had documented the review of routine procedures and approval of newly activated procedures. The inspector determined that the licensee had implemented LC 15 as required by the license.

License Condition 16 requires, in part, that the licensee conduct an annual ALARA and environmental monitoring program audit. The inspector reviewed the annual audits for 2012 through 2018 and determined that they were thorough and detailed evaluations of the radiation and groundwater monitoring programs. Recommendations and follow-up actions were also documented. The ALARA Audit for 2017 included the review of the radiation monitoring of personnel and radiation surveys of equipment conducted during the installation of four new wells in 2017. The licensee states in the 2017 ALARA Audit that no occupational radiation exposure to employees or contractors exceeded 100 millirem a year, which is well below the annual limit of 5000 millirem.

The licensee is required to submit to the NRC an annual report that contains an updated organizational chart, as required by LC 10B; the annual land use survey, as required by LC 32; and the results of the groundwater monitoring program, as required by LC 35A. The semi-annual reports are reviewed by the NRC project manager and communicated to the licensee by separate correspondence.

1.3 Conclusions

The licensee was conducting operations in accordance with license requirements. The tailings impoundment appeared to be in good condition with no observable degradation. The licensee had installed four new groundwater monitoring wells to facilitate further groundwater evaluation.

2 Exit Meeting Summary

The inspector presented the inspection results to the licensee's representative, Mr. Jason Smith, Management Contractor, AECOM, at the conclusion of the onsite inspection on August 28, 2018. During the inspection, the licensee's representative did not identify any information reviewed by the inspector as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Gieck, Remediation Leader
J. Smith, Management Contractor, AECOM

Wyoming Department of Environmental Quality

R. Schierman, Wyoming Uranium Recovery Program Manager
D. Shafer, U.S. Department of Energy, Legacy Management Office
S. Ramsay, Wyoming Homeland Security

INSPECTION PROCEDURE (IP) USED

IP 87654 Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
DOE	U.S. Department of Energy
IP	Inspection Procedure
LC	License Condition
LTSP	Long Term Surveillance Plan
NRC	U.S. Nuclear Regulatory Commission
RG	NRC Regulatory Guide
RSO	Radiation Safety Officer
Umetco	Umetco Minerals Corporation
WFR	Western Flow Regime

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 DATED SEPTEMBER 20, 2018

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