UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

July 10, 2001

Mr. John S. Hamrick
Umetco Minerals Corporation
2754 Compass Drive, Suite 280
Grand Junction, Colorado 81506-8741

SUBJECT: NRC INSPECTION REPORT 40-0299/01-01

Dear Mr. Hamrick:

On June 21, 2001, the NRC completed an inspection of your former Gas Hills Uranium Project in Natrona County, Wyoming. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. The inspection findings were presented to members of your staff at the conclusion of the onsite inspection. The enclosed report presents the results of that inspection. The inspection determined that you have continued to make progress in remediating the site and that activities have been conducted in a safe and effective manner in accordance with the NRC-approved reclamation plan, the license, and NRC regulations.

No violations or deviations were identified; therefore, no response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room (PDR) **or** from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Mr. Louis C. Carson II at (817) 860-8221 or the undersigned at (817) 860-8186.

Sincerely,

/RA/

Charles L. Cain, Chief
Nuclear Materials Licensing Branch

Docket No.: 40-0299
License No.: SUA-648

Enclosure:
NRC Inspection Report
40-0299/01-01

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ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.:	40-0299
License No.:	SUA-648
Report No.:	40-0299/01-01
Licensee:	Umetco Minerals Corporation
Facility:	Former Gas Hills Uranium Project
Location:	Gas Hills Mining District, Natrona County, Wyoming
Inspection Dates:	June 20 - 21, 2001
Inspector:	Louis C. Carson II, Health Physicist Nuclear Materials Licensing Branch Division of Nuclear Materials Safety
Approved By:	Charles L. Cain, Chief Nuclear Materials Licensing Branch Division of Nuclear Materials Safety
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

Site of Former Gas Hills Uranium Project
NRC Inspection Report 40-0299/01-01

This inspection included a review of site status and decommissioning, management organization and controls, site radiation protection, waste management, and environmental monitoring programs.

Site Decommissioning Status

- Site activities and decommissioning programs were being conducted in accordance with the reclamation plan, the license, and applicable NRC regulations (Section 1).

Management Organization and Controls

- The licensee's organization and management controls were found to be in accordance with requirements of the license. Staffing was deemed appropriate for site remediation activities (Section 2).

- Procedures were found to have been established in compliance with the license (Section 2).

Radiation Protection

- The licensee had implemented a radiation protection program that was in accordance with requirements established in 10 CFR Part 20 and the license. The licensee had effectively kept exposures at the site as low as reasonably achievable (ALARA). During 1999 and 2000, employee occupational exposures were well below regulatory limits (Section 3).

- Site fences were in good condition. Site security and perimeter postings were appropriate (Section 3).

- Qualified individuals had maintained oversight of reclamation activities (Section 3).

Environmental Protection and Radioactive Waste Management

- Reviews of the licensee's documentation in support of 10 CFR Part 40.65 semi-annual effluent reports revealed that the facility had not released any radioactive material into the environment that exceeded the limits established in 10 CFR Part 20 (Section 4).

- Environmental monitoring, radioactive waste management, and the groundwater corrective action program had been conducted in accordance with license requirements (Section 4).

Report Details

1 Site Status and Decommissioning for Uranium Mill Sites (87654)

1.1 Inspection Scope

The site status and decommissioning activities were reviewed to determine if licensee activities were being conducted in accordance with the approved reclamation plan, NRC regulations and the license.

1.2 Observations and Findings

a. Site Status

The Former Gas Hills Uranium Mill operated from 1960 to 1979. The mill buildings have been dismantled, and site activities included the reclamation of three disposal areas and continuation of the groundwater corrective action program. In 1980, Umetco submitted a reclamation plan for the Above-Grade Tailings Impoundment (AGTI), incorporating the adjacent experimental heap leach area. Umetco completed tailings regrading and construction of the cover and addition of topsoil and seed in 1992. Several years after construction, erosion of the cover was noted and concerns were expressed for erosion along the east toe of the AGTI, the north toe drain and additional contamination found near the north edge of the AGTI. Additional radon barrier and frost protection cover had been placed on both the AGTI and the area connecting to the heap leach impoundment. Frost protection covering had been completed. Final rock installation was ongoing.

The A-9 pit and a below-grade solid disposal area, had been capped with an interim layer of soil. However, the A-9 pit is still an active disposal area. The radon barrier for the Heap Leach Impoundment was complete, and the erosion protection was scheduled to be completed by the end of 2001. The one lined pond, GHP-2 continues to receive water from the groundwater corrective action program. Pond GHP-1 had been taken out-of-service since the previous inspection, and contaminated materials had been removed from the north and south evaporation ponds.

Reclamation activities in progress during this inspection included: (1) maintenance of impoundments and A-9 disposal cell, (2) the continuation of a groundwater corrective action program, (3) placing cover material on the C-18 pit, and (4) placing the radon barrier on the A-9 disposal cell.

1.3 Conclusions

Site decommissioning activities were reviewed and found to have been conducted in accordance with the approved reclamation plan, applicable license conditions and regulatory requirements.

2 Management Organization and Controls (88005)

2.1 Inspection Scope

The organization structure was reviewed to ensure that the licensee had maintained an effective organization with defined responsibilities and functions. The licensee's standard operating procedures were reviewed, and the implementation of these procedures was assessed to evaluate the effectiveness of such controls on site activities.

2.2 Observations and Findings

The licensee's functional organization was compared with the organization referenced in the license. The licensee's overall organization structure agreed with the conditions of the license, and no major changes had occurred in the site organization since the mill was decommissioned, or the previous inspection. There were 6 Umetco employees, 4 contract radiation technicians, and 86 construction contractors onsite. Staffing was deemed appropriate for site remediation activities

License Condition 15 requires the establishment of written procedures for non-operational activities, including environmental monitoring and survey instrument calibrations. Selected site standard operating procedures (SOP) were reviewed and determined sufficient for the program areas referenced in the license. SOPs had been reviewed annually by the radiation safety officer (RSO), as required. Licensee procedures were comprehensive and in accordance with the requirements of the license.

License Condition 27 requires, in part, that the results of sampling, analyses, surveys and monitoring, the results of calibrations of equipment, reports on audits and inspections, and all meetings and training required by this license and any subsequent reviews, investigations, and corrective actions, be documented. Monthly "responsible care reports" were issued by the RSO, summarizing safety findings and training, environmental sampling and inspections, groundwater issues, site status, radiological sampling and surveys, personnel exposures, inspections and other general issues. Additionally, the inspector reviewed the licensee's annual report and corrective action program for groundwater remediation, land use survey, ALARA audit, and various other license conditions. These reports were found to be comprehensive and thorough, delineating any concerns or issues found, as well as applicable corrective actions.

2.3 Conclusions

The organization structure was consistent with the license. Staffing was deemed appropriate for site remediation activities. Procedures had been established at the site which met the intent of the license, and were adequate for the site operations.

3 Radiation Protection (83822)

3.1 Inspection Scope

The purpose of this portion of the inspection effort was to determine if the licensee's radiation protection program was in compliance with requirements established in the license and 10 CFR Part 20 regulations.

3.2 Observations and Findings

a. Site Tour

A facility tour was performed to verify that site activities were being conducted in accordance with applicable regulations and license conditions, and to ensure that controls were adequate to protect the health and safety of workers and the public. During the site tour, buildings, fences, gates, and operating equipment were observed. Security was maintained by keeping the site access gate closed during off hours to prevent unauthorized access to the property. Licensed material was secured within the site property as required by 10 CFR Part 20.1801. Additionally, fences were posted with radioactive material signs as required by 10 CFR Part 20.1902 and License Condition (LC) 13. No problem areas were identified, and no health or safety hazard was identified during the site tour. Access to the site was controlled in accordance with LC 10E. Additionally, the licensee controlled water accumulation in the A-9 repository in accordance with LC 36.

The inspector performed a limited independent radiological survey using an NRC-issued microRoentgen meter (Serial Number 15544, calibration due date of November 29, 2001), that was calibrated to radium-226. Gamma exposure rate measurements obtained by the inspector around the site ranged from 20 to 75 microRoentgen/hour.

b. Personnel Exposures

Dosimeters were issued to certain site employees and contractors, even though documentation demonstrated that radiation exposures have not exceeded 10 percent of the 10 CFR Part 20 limits. The licensee used a certified dosimetry vendor to provide the thermoluminescent dosimeters (TLDs) and to perform the analyses. The highest exposure received for 1999 and 2000 were 63 and 132 mrems, respectively, total effective dose equivalent (TEDE). The majority of all doses received were from the committed effective dose equivalent portion, as measured by breathing zone air samples. During 1999 and 2000, direct exposures to ionizing radiation were low, with a maximum of 51 and 35 mrems, respectively. The inspector deemed that exposures for 1999 and 2000 were consistent with the exposures from previous years. In summary, the licensee had effectively kept exposures ALARA. During 1999 and 2000, employee occupational exposures were well below regulatory limits.

c. Radiation Protection License Conditions

License Condition 10D delineates the required training for workers, visitors and contractors in accordance with 10 CFR Part 19.12, “Instructions to Workers.” Records reviewed demonstrated all required training had been given, with adequate depth and scope. The licensee had conducted training in accordance with the license and 10 CFR Part 19.12. Additionally, the licensee had conducted extensive industrial safety training in accordance with LC 10D(2). The licensee’s personnel training records and training materials exceeded requirements. The inspector observed licensee personnel implementing good radiological and industrial safety practice during remediation activities.

License Condition 16 requires the licensee to conduct an annual ALARA audit. The most recent audit was conducted on May 14, 2001, for the calendar year 2000. Additionally, the inspector reviewed the 1999 ALARA audit report dated November 30, 2000. The audits were thorough and complete. No significant safety issues were identified. The ALARA audits had been conducted in accordance with LC 16 and 10 CFR 20.1101(c).

License Condition 20 requires calibration of equipment utilized for radiation surveys to be performed annually, and air sampling equipment calibrated at least quarterly or prior to use if utilized less frequently than a quarterly basis. The inspector’s review of equipment in use and instrument records revealed that license requirements for instrument calibrations were being met.

License Condition 22 requires that the licensee not release contaminated material above the limits pursuant to "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials." The inspector reviewed contamination survey records from 1999, 2000, and through May 2001, of equipment and vehicles that had been released for unrestricted use. Records indicated that no surveyed equipment or vehicle had been released from the site for unrestricted use with contamination in excess of the release limits.

3.3 Conclusions

The licensee had implemented a radiation protection program that met requirements of 10 CFR Part 20 and the license. The licensee had kept exposures at the site ALARA. Site fences and perimeter postings were in good condition. No health or safety hazards were identified.

4 Radioactive Waste Management (88035) and Environmental Protection (88045)

4.1. Scope

The licensee's radioactive waste management and environmental programs were reviewed to determine compliance with applicable requirements specified in the license.

4.2 Observations and Findings

License Condition 32 requires the licensee to conduct an annual survey of land use in areas within 5 miles of the former mill and submit a report to the NRC each year. The land use survey report describes significant land use changes by private residences, nonresidential structures, grazing areas, and potable water and wells. The nearest residence was 5.5 miles northeast of the mill site. The inspector reviewed the licensee's 1999 and 2000 land use survey reports submitted to the NRC on August 29, 2000. The licensee did not identify that any significant changes in land use had occurred since the last reporting period. The licensee's 1999 and 2000 land use survey report was determined to be in compliance with LC 32.

License Condition 34 identifies the licensee's environmental monitoring program requirements. The inspector reviewed records which demonstrated that the licensee had performed environmental and effluent sampling at the required locations and frequencies. No environmental monitoring sample exceeded the applicable limits.

License Condition 39 requires that the licensee submit annual reports of radiological effluent, environmental data, and the highest annual dose equivalent to the public pursuant to 10 CFR 40.65. License Amendment 40 changed the semi-annual reporting requirements to an annual frequency. The inspector reviewed the licensee's 10 CFR 40.65 annual report submitted to the NRC in August 29, 2000, for year 2000. The following summarizes three areas that the annual report addressed:

- The licensee had collected airborne radioactivity samples from three locations (Towers 1, 4, and 6). The air sample filters were composited and analyzed quarterly. The licensee had analyzed the samples for natural uranium, thorium-230, radium-226, lead-210, and radon-222. The measurable concentrations were significantly less than the effluent concentration levels (ECL) listed in 10 CFR Part 20, Appendix B, Table II.

- The licensee measured direct gamma exposure rates at each of the three sample stations (Towers 1, 4 [background location], and 6) using environmental TLDs. The TLDs had been changed out on a quarterly basis. Ambient background gamma radiation for 1999 and 2000 averaged 196 millirem. Ambient gamma radiation levels at the 3 TLD locations around the site for 1999 and 2000 period measured from less than the background at Tower 6 to 99 millirem above background at Tower 1. The licensee's nearest public residence was located northeast of TLD Tower 6, and the residence was not occupied. The inspector concluded that potential radiation exposure to any member of the public from licensed material would have been well below the 100 millirem per year limit.

- The licensee's groundwater monitoring data indicated no significant trends in the groundwater quality. No radiochemical or chemical constituents in monitoring wells were above limits specified in LC 35, including uranium, radium, thorium, lead, gross alpha, selenium, beryllium, and nickel. The effluent and environmental monitoring data for 1999 and 2000, indicated the dose to the

nearest resident did not exceed the 100 millirems per year dose limit for the public. However, the inspector noted that groundwater from the site was not being consumed by members of the public as drinking water.

In summary, the annual report was submitted in a timely manner and provided relevant data for the facility.

License Conditions 36 and 49 requires the licensee to implement mill tailings, disposal area, and embankment inspection programs. The inspector toured the mill tailings area, evaporation pond, and dam areas, and no degradation was observed. Evaporation Pond GHP-1 had adequate freeboard between the embankment and maximum operating levels. LC 10(C) requires the licensee to conduct a weekly documented visual inspection of the evaporation storage pond and solution transfer system from the A-9 impoundment. The inspector's review of the weekly environmental inspections for year 2000 to June 2001, indicated that the licensee had conducted all required inspections. In summary, the licensee fulfilled the requirements of LC10(C). The inspector determined that the licensee had adequately maintained its radioactive waste retention structures.

4.3. Conclusion

The environmental monitoring program, radioactive waste management program, and management of the mill tailings area had been conducted in accordance with license requirements.

5 Exit Meeting Summary

The inspector presented the inspection results to licensee representatives at the conclusion of the inspection on June 21, 2001. The licensee representative acknowledged the findings as presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Hamrick, Manager, Health, Safety & Environmental Affairs
E. Ley, Site Superintendent
S. Schierman, Radiation Safety Officer

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

INSPECTION PROCEDURES USED

87654	Decommissioning of Uranium Mills
88005	Management Organization and Controls
83822	Radiation Protection
88035	Radioactive Waste Management
88045	Environmental Monitoring

LIST OF ACRONYMS USED

AGTI	above-grade tailings impoundment
ALARA	as low as is reasonably achievable
CFR	Code of Federal Regulations
DAC	derived air concentration
ECL	effluent concentration limit
LC	license condition
RSO	radiation safety officer
SOP	standard operating procedures
TLD	thermoluminescent dosimeter