



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

October 21, 2016

Daniel Grapski
Project Manager
ExxonMobil Environmental
Services Co.
25915 S Frontage Rd
SH&E Building
Channahon, IL 60410

SUBJECT: NRC INSPECTION REPORT 040-08102/2016-001

Dear Mr. Grapski:

On September 22, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed a routine inspection at your Highland Reclamation Project in Converse 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, representative records, observations of activities, and interviews with personnel.

The NRC inspector discussed the results of this inspection with members of your staff on September 22, 2016. 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 10 CFR 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 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.

D. Grapski

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Should you have any questions concerning this inspection, please contact Dr. Robert Evans at 817-200-1234 or the undersigned at 817-200-1549.

Sincerely,

/RA/

Lee E. Brookhart, Acting Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket: 040-08102

License: SUA-1139

Enclosure:

NRC Inspection Report 040-08102/2016-001

cc w/enclosure:

R. Schierman, Wyoming Department of Environmental Quality

M. Kuchanur, Wyoming Department of Environmental Quality

S. Ramsay, Wyoming Homeland Security

A. Gil, U.S. Department of Energy

R. Bioleau, Worthington Miller Environmental, LLC

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

Docket: 040-08102

License: SUA-1139

Report: 040-08102/2016-001

Licensee: ExxonMobil Environmental Services Co.

Facility: Highland Reclamation Project

Location: Converse County, Wyoming

Date: September 22, 2016

Inspector: Robert Evans, PhD, PE, CHP, Senior Health Physicist
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Accompanied by: Daniel Radulovic, Team Leader
Mining Compliance and Regulation
Minerals Resources Division
Department of State Development
Government of South Australia

Approved by: Lee E. Brookhart, Acting Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

ExxonMobil Environmental Services Co.
NRC Inspection Report 040-08102/2016-001

This inspection was a routine, announced inspection of activities being conducted at the Highland Reclamation Project in Converse County, Wyoming. In summary, the licensee was conducting site activities in accordance with license and regulatory requirements.

Management Organization and Controls

- The licensee had sufficient staff for the work in progress, and site staffing was consistent with license requirements. (Section 1.2)

Radiation Protection

- The licensee implemented a radiation protection program that was in compliance with 10 CFR Part 20 and license requirements. (Section 2.2)

Radioactive Waste Management

- The licensee continued to maintain the site in accordance with license requirements. (Section 3.2)

Effluent Control and Environmental Protection

- The licensee implemented the groundwater corrective action monitoring program in accordance with license requirements. (Section 4.2)

Report Details

Site Status

Exxon Minerals Company, later known as Exxon Coal and Minerals Company, operated the Highland uranium facility from 1972-1984. The Highland mill used a conventional acid leach-solvent extraction process to extract uranium from ore obtained from nearby surface, subsurface, and solutions mining operations. Approximately 11.3 million tons of ore were processed by the mill. The mill tailings were deposited in an above-grade impoundment formed by damming an ephemeral tributary of Box Creek.

Reclamation work and groundwater corrective actions started in 1984. Most of the surface reclamation work was completed in 1989, with the exception of 20 acres of the tailings basin which required additional action to allow consolidation of the tailings prior to final reclamation. A portion of the remaining 20 acres was also used for evaporation ponds as part of the groundwater corrective action program. The licensee subsequently remediated the remaining portion of the tailings impoundment. In September 2002, the U.S. Nuclear Regulatory Commission (NRC) approved the final remediation of the 200-acre tailing impoundment (Agencywide Documents Access and Management System [ADAMS] Accession No. ML022490336).

Since the previous inspection, the licensee installed 20 new wells and abandoned five other wells, in part, to obtain additional information about potential groundwater contamination. The licensee continued to implement a groundwater monitoring program in accordance with license requirements. Further, the licensee continued to provide oversight of the facility including site inspections and maintenance.

1 Management Organization and Control (88005)

1.1 Inspection Scope

Ensure that the licensee and its contracted workforce are conducting site activities in accordance with license and regulatory requirements.

1.2 Observations and Findings

The licensee's organizational responsibilities were provided in its license application letter to the NRC dated October 23, 2003 (ML033090064), as referenced in License Condition 11. According to Section 2.0 of the license application, project staffing consisted of four individuals—project manager, project engineer, site safety officer, and radiation safety officer (RSO). At the time of the inspection, the licensee had staffed all positions, although one individual filled the positions of both project manager and project engineer. Contractors were used as needed to supplement project staffing. These contractors included environmental specialists who managed the groundwater monitoring program. In summary, the licensee had sufficient staff for the work in progress.

The licensee implemented one management-level change since the last inspection. The position of project manager was reassigned to a different person. The licensee notified the NRC of the change in project managers by letter dated August 6, 2015

(ML15223A205). The licensee also replaced the RSO with another qualified individual since the previous inspection.

1.3 Conclusions

The licensee had sufficient staff for the work in progress, and site staffing was consistent with license requirements.

2 Radiation Protection (83822)

2.1 Inspection Scope

Ensure that the licensee's radiation protection and training programs are in compliance with 10 CFR Part 20 requirements and the license.

2.2 Observations and Findings

The licensee's radiation safety program was minimal based on the limited amount of work in progress. As noted in Section 2.4.1 of the license application, surface reclamation at the site has been completed. The only remaining site activity was groundwater monitoring. Accordingly, the radiation safety program was reduced commensurate with the minimal extent of licensed activities in progress at the site, and radiation doses to site workers are not expected to exceed levels acceptable for the general public. The licensee discontinued occupational exposure monitoring as allowed by regulation 10 CFR 20.1502. However, at the discretion of the RSO, the licensee may elect to require certain workers to submit urine samples for bioassay or issue dosimetry to workers or site visitors based on future work activities.

The licensee continued to conduct annual radiation protection program reviews as required by Title 10 of the Code of Federal Regulations (10 CFR) 20.1101(c). Details about the annual audit are provided in Section 2.4.8.2 of the license application. The licensee's records indicate that it conducted annual program reviews in 2014-2016.

License Condition 38 states, in part, that standard operating procedures shall be established for groundwater monitoring, instrument calibrations, and release of equipment and materials. Further, the procedures shall be reviewed at least annually by the RSO.

The licensee's procedures included health and safety, environmental monitoring, quality assurance/quality control, and security. Standard operating procedures were reviewed annually. The last review was conducted in May 2015.

License Condition 34 states, in part, that the results of training shall be documented. The inspector reviewed the licensee's training records and confirmed that training had been provided in 2014-2016.

2.3 Conclusions

The licensee implemented a radiation protection program that was in compliance with 10 CFR Part 20 and license requirements.

3 Radioactive Waste Management (88035)

3.1 Inspection Scope

Determine if the licensee had established and maintained an effective program for managing radioactive wastes.

3.2 Observations and Findings

The inspector toured the site, in part, to observe the security features in place at the facility. Section 1.2 of the license application states that the site was fenced with restricted access through a locked gate. Site fences, gates, and monitor wells were observed during the site tour. Fences, gates, and locks were found to be in good condition. The inspector determined that licensed material was adequately secured within the site boundary.

During the site tour, the inspector conducted radiation surveys using a Ludlum Model 19 microRoentgen survey meter (NRC 015518, calibration due date of July 13, 2017, calibrated with radium-226). The background ambient gamma exposure rate was approximately 12 microRoentgen per hour. Exposure rates at various locations around the site were consistent with background levels. Elevated ambient gamma exposure rates were not expected because the site had been reclaimed.

3.3 Conclusions

The licensee continued to maintain the site in accordance with license requirements.

4 Effluent Control and Environmental Protection (88045)

4.1 Inspection Scope

The inspector reviewed the licensee's effluent and environmental protection programs to ensure compliance with license and regulatory requirements.

4.2 Observations and Findings

License Condition 33 states, in part, that the licensee shall implement a groundwater compliance monitoring program. License Condition 22 states that the results of the program shall be reported to the NRC on an annual basis in accordance with the requirements of 10 CFR 40.65. The inspector reviewed the annual reports for calendar years 2013-2015 (ML14107A220, ML15107A031, and ML16111B125).

In accordance with License Condition 33, the licensee is required to sample 25 wells including four point-of-compliance wells and one background well. The wells are required to be sampled quarterly for seven constituents and semi-annually for 10 additional constituents. In summary, the licensee collected the required number of samples, although 11 of 25 wells were dry.

None of the groundwater protection standards were exceeded at the point-of-compliance wells, with the exception of uranium concentrations in Well 175 and combined

radium 226 and radium-228 concentrations in Well 176. In response to these exceeded concentrations, the licensee proposed updated alternate concentration limits and monitoring wells by letter dated May 12, 2011 (ML11136A199). In addition, the licensee installed 20 new wells to further delineate the groundwater quality in certain locations around the site. These wells were located on site property but outside of the licensed area. The licensee plugged five dewatering wells because they were screened across multiple aquifers and could cause cross-contamination of aquifers. The licensee notified the State of Wyoming about the abandonment of these five wells by letter dated July 6, 2016.

On February 20, 2014 (ML14029A152), the NRC responded in writing to the licensee's May 12, 2011, letter, the results of the August 2012 public meeting (ML12248A314), and the licensee's letter dated April 8, 2013 (ML13123A224). In the NRC's February 20, 2014, letter, the NRC indicated that the licensee should install additional wells, conduct limited groundwater monitoring, and conduct geochemical characterization of the ambient groundwater to provide a complete response to the May 12, 2011, letter. The licensee subsequently installed five new wells in 2014 and 15 new wells in 2015. The licensee then provided updated information to the NRC, including monitor well installation and sampling information, by letter dated February 25, 2016 (ML16067A196). In this letter, the licensee indicated that it would submit an evaluation report to the NRC at a later date. During the onsite inspection, licensee representatives stated that this evaluation report is expected to be submitted to the NRC during the first quarter of calendar year 2017.

In summary, the license continued to implement the groundwater monitoring program as required by License Condition 33, and the licensee continued to provide the results of sampling to the NRC in annual reports. The NRC will use the licensee's data, including the future evaluation report, in its decision-making process regarding approval of the proposed revised alternate concentration limits.

4.3 Conclusions

The licensee implemented the groundwater corrective action monitoring program in accordance with license requirements.

5 **Exit Meeting Summary**

The inspector presented the inspection results to the licensee's representatives at the conclusion of the onsite inspection on September 22, 2016. During the inspection, the licensee did not identify any information reviewed by the inspector as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Bilodeau, Project Manager, Worthington Miller Environmental, LLC
S. Blakeley, Field Contractor, Pronghorn Pump LLC
C. Little, Radiation Safety Officer, Two Lines, Inc.
R. Noble, Project Scientist, Worthington Miller Environmental, LLC

Wyoming Department of Environmental Quality

B. O'Brien, Uranium Recovery Program Engineer, Land Quality Division

INSPECTION PROCEDURES (IPs) USED

IP 83822	Radiation Protection
IP 88005	Management Organization and Controls
IP 88035	Radioactive Waste Management
IP 88045	Effluent Control and Environmental Protection

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
RSO	radiation safety officer

D. Grapski

- 2 -

Should you have any questions concerning this inspection, please contact Dr. Robert Evans at 817-200-1234 or the undersigned at 817-200-1549.

Sincerely,

/RA/

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A. Gil, U.S. Department of Energy

R. Bilodeau, Worthington Miller Environmental, LLC

ADAMS ACCESSION NUMBER: ML16294A580

<input checked="" type="checkbox"/> SUNSI Review By: RJE	ADAMS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sensitive <input checked="" type="checkbox"/> Non-Sensitive	<input type="checkbox"/> Non-Publicly Available <input checked="" type="checkbox"/> Publicly Available	Keyword NRC-002
OFFICE	DNMS/FCDB	DNMS/FCDB		
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SIGNATURE	/RA/	/RA/		
DATE	10/20/16	10/21/16		

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Letter to Daniel Grapski from Lee Brookhart dated October 21, 2016

SUBJECT: NRC INSPECTION REPORT 040-08102/2016-001

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