



State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
and the
ENVIRONMENT DEPARTMENT

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary, EMNRD

Howie Morales
Lieutenant Governor

James C. Kenney
Cabinet Secretary, NMED

Date: December 1, 2023

To: Rep. Joanne J. Ferrary, Chair, Radioactive & Hazardous Materials Committee
Sen. Jeff Steinborn, Vice Chair, Radioactive & Hazardous Materials Committee

From: Miori Harms, Uranium Mine Reclamation Coordinator, New Mexico Environment
Department, Office of Strategic Initiatives
Clint Chisler, Uranium Mine Reclamation Coordinator, Energy, Minerals and Natural
Resources Department, Mining and Minerals Division

Through: Secretary James C. Kenney, New Mexico Environment Department
Secretary Sarah Cottrell Propst, Energy, Minerals and Natural Resources Department

Re: 2023 Uranium Mine and Mill Site Reclamation Annual Report

This report fulfills the House Bill 164 (HB 164) Section 1(A)(6) (2022) requirement that the New Mexico Environment Department (NMED) report on an annual basis to the Radioactive and Hazardous Materials Committee on activities related to uranium mine and mill site reclamation in the preceding year. This includes NMED activities (Section 1) and activities undertaken by 10 other state departments and agencies identified in HB 164 (see Sections 2 and 3). NMED has also included the Office of the State Engineer in this report as their role is integral in the State of New Mexico's effort to protect human health and the environment. This report briefly summarizes the contributions of the 12 state agencies towards uranium cleanup.

The term "reclamation" in HB164 is interpreted to be equivalent to cleanup, inclusive of surface water and groundwater remediation that fall under discharge permits and abatement plans regulated by NMED.

Section 1: Activities in Uranium Reclamation Undertaken by NMED

(1) Strategic Plan

HB 164 Section 1(A)(2) directs NMED to "develop a strategic plan for the cleanup of uranium mine and mill sites throughout the state, including reclamation goals, timelines for the completion of cleanup activities at specific sites and anticipated funding requirements. The Department of Environment shall consult with the departments enumerated in Paragraph (1)

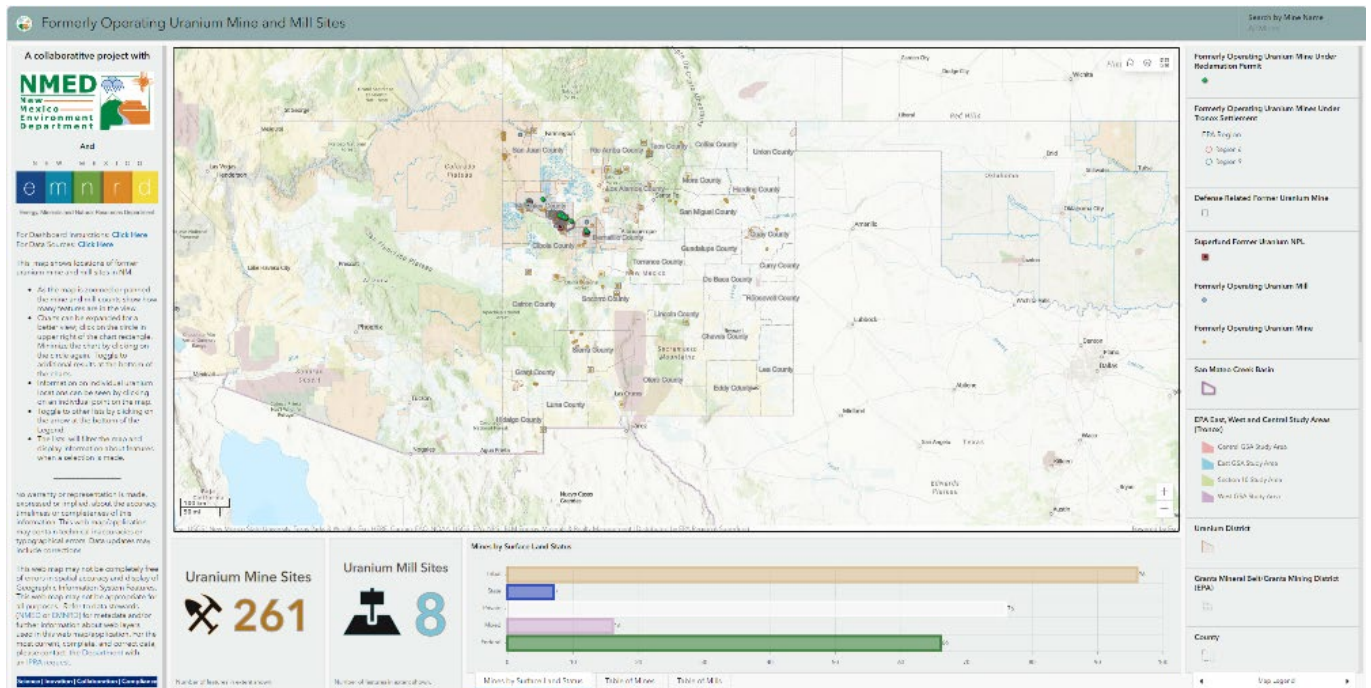
of this subsection in the development of the strategic plan...” Activities below represent efforts to that end.

- a. NMED engaged a contractor to assist in writing and coordinating the *Uranium Reclamation Strategic Plan* in conjunction with all listed agencies of HB164 and the Office of the State Engineer.
- b. The draft *Uranium Reclamation Strategic Plan* is provided to the Committee along with this report. NMED expects to finalize the plan in the first half of 2024 and will make it publicly available at that time. The plan includes:
 - i. Appendix A - Site Reviews for former mines that include State permits
 - ii. Appendix B - Site Reviews for all former mills
 - iii. Appendix C - Gap Analysis Report
 - iv. Appendix D - Skills Matching Report (performed by the Department of Workforce Solutions)
 - v. Appendix E - Funding Opportunities

(2) Centralized Data Repository

HB 164 Section 1(A)(5) charges NMED to “*develop, maintain, and update on a regular basis a centralized repository of uranium mine and mill sites and reclamation activities.*” Activities below represent efforts to that end.

- a. NMED, in partnership with the Energy, Minerals and Natural Resources Department’s (EMNRD) Mining and Minerals Division (MMD), initiated the creation of an interactive web mapping tool to increase information access on formerly operating uranium mine and mill sites across New Mexico. The *Formerly Operating Uranium Mine and Mill Sites* dashboard summarizes basic mine and mill site information, any relevant regulatory action under the two agencies’ permitting tracks and displays information for all other sites and federal agencies where available.
- b. The information can be overlaid with land ownership information, legislative districts, mining district boundaries, and other helpful contextual layers that can be toggled on and off.
- c. The dashboard will continue to be updated on a regular basis after its public release to incorporate new information as it becomes available.



Screenshot of the Formerly Operating Uranium Mine and Mill Sites dashboard

(3) Consultation and Coordination

HB 164 Section 1(A)(3) requires NMED to “establish an effective mechanism for consultation and coordination with the federal government; Indian nations, tribes, and pueblos; communities impacted by uranium mining; and other states on uranium mine and mill reclamation activities.” Activities below represent efforts to that end performed by the Uranium Mine Reclamation Coordinator.

- a. NMED engaged a contractor to develop a plan for community outreach and engagement in all efforts related to HB 164. The draft *Community Engagement Strategic Plan* is a ‘living document’ to be updated as programs are developed.
- b. **Table 1** below shows coordination by NMED and EMNRD Uranium Mine Reclamation Coordinators with federal agencies, tribes and pueblos, and communities impacted by uranium mining and milling activities. Effective consultation and coordination are integral to all aspects of HB 164 implementation. Table 1 does not capture the entirety of NMED and EMNRD efforts but provides distinct examples demonstrating the nature of the work.

Table 1.

Coordination	NMED Coordinator comments/actions	EMNRD Coordinator comments/actions
Coordination with the U.S. Department of Energy (DOE)	<ul style="list-style-type: none"> Incorporated Defense-Related Uranium Mines program work on federal lands (outside of the San Mateo Creek Basin) into the <i>Formerly Operating Uranium Mine and Mill Sites</i> dashboard in partnership with EMNRD. 	<ul style="list-style-type: none"> Worked with the Department of Energy's Defense-Related Uranium Mines program to acquire data on Abandoned Uranium Mine Sites in NM. Obtained Verification and Validation (V&V) reports for all sites outside of the San Mateo Creek Basin. Awaiting future V&V reports on state and private lands (Fall 2024 or 2025).
Coordination with the U.S. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> EPA - Region 6: Monthly status meetings regarding specific site reclamation statuses and waste repository identification. EPA - Region 9: Field visit and meetings regarding specific site cleanups. Attended Office of Land and Emergency Management's regulators meeting. Field visits to Ambrosia Lake West Mill, Ambrosia Lake (Phillips) Mill, and Homestake Mill. 	<ul style="list-style-type: none"> EPA - Region 6: Continued field visits and meetings regarding Tronox Superfund and waste repository work in the Ambrosia Lake area. EPA - Region 9: Continued field visits and meetings regarding Quivira, Section 32/33 cleanup and the Red Rocks Landfill repository option.
Coordination with the U.S. Nuclear Regulatory Commission (NRC)	<ul style="list-style-type: none"> Rio Algom Mining LLC (RAML) site inspection meeting. 	<ul style="list-style-type: none"> RAML site inspection and look at Section 4 ponds in September 2023. Homestake monthly progress updates
Coordination with communities	<ul style="list-style-type: none"> Various online meetings hosted by the Multi-cultural Alliance for a Safe Environment. Office of Land and Emergency Management's community meeting. Attended EPA-led community meeting on the Homestake mill site status update for impacted groundwater and communities downgradient of the site. 	<ul style="list-style-type: none"> Various online meetings hosted by the Multi-cultural Alliance for a Safe Environment.
Coordination with tribal communities	<ul style="list-style-type: none"> Attended DOE's presentation to the Pueblo of Acoma on groundwater studies related to the legacy management of Bluewater and L-Bar Mills. Field visit to the Quivira mine site (on Navajo Nation) near Church Rock, New Mexico; also attended by Navajo Nation EPA. Delivering data to Navajo Nation EPA (in progress). 	<ul style="list-style-type: none"> Department of Energy's presentation to the Pueblo of Acoma Field visit to the Quivira mine site (on Navajo Nation) near Church Rock, NM; also attended by Navajo Nation EPA. Navajo Nation EPA: Continued field visits and meetings regarding Quivira, Section 32/33 cleanup and the Red Rocks Landfill repository option. Thoreau Chapter House meeting attended in August 2023 regarding the Red Rocks Landfill Alternative.

(4) Workforce Development

HB 164 Section 1(A)(4) requires NMED to “*work with the Economic Development Department, Workforce Solutions Department and industry to establish uranium mine and mill reclamation as a target economic development industry in New Mexico, including the creation, coordination and promotion of a worker training and business development programs for reclamation activities.*” Activities below represent efforts to that end.

a. Coordination with the Economic Development Department

Economic Development Department listed Uranium Mine and Mill Reclamation as part of the “Sustainable & Green Energy” target industry in May 2023.

b. Coordination with the Department of Workforce Solutions

- i. NMED has engaged Department of Workforce Solutions to administer federal funds for a pilot jobs training program hosted by San Juan College in Farmington, New Mexico. The three parties are expected to enter into a Memorandum of Understanding to be effective January 2024. The first pilot program will be a three to eight-week course designed to help program participants gain an understanding of the field and prepare them with skills to succeed in an environmental cleanup career.
- ii. Funding for the program is expected to come from federal sources (Workforce, Innovation, and Opportunity Act) administered by the Department of Workforce Solutions and their sub-recipients and partners.
- iii. Department of Workforce Solutions also conducted a Skills Matching Report (Appendix D of the Uranium Reclamation Strategic Plan) to determine if there is an existing New Mexico workforce with the skills needed to engage in an environmental cleanup career.
- iv. Department of Workforce Solutions agreed to support recruitment efforts for uranium positions at NMED.

c. Coordination with Industry

NMED solicited feedback from employers conducting environmental cleanups that support uranium reclamation and remediation to inform the initial pilot program. This effort will continue into 2024 to create, alongside San Juan College, an employer-led and employer-partnered job training curriculum.

d. Other Workforce Development Activities by NMED

- i. Hired a high school-level intern
- ii. Hired an undergraduate-level intern
- iii. Engaged in conversations with other higher education institutions capable of hosting job training programs (such as the EPA-funded Brownfields Job Training Program)

(5) NMED and EMNRD’s Reclamation Activities

- a. **Table 2** below shows activities related to formerly operating mines under State permit performed by Mining Environmental Compliance Section of NMED and by the Mining and Minerals Division of EMNRD. For detailed site reviews: www.env.nm.gov/former-mines-mills/.

Table 2.

Site Name	NMED (Mining Environmental Compliance Section) comments/actions	EMNRD (Mining and Minerals Division) comments/actions
Church Rock Mine	See Table 3, Church Rock Mine and Mill. www.env.nm.gov/former-mines-mills/home/church-rock-mine-site-review/	
JJ No. 1 Mine	NMED reviewed quarterly water level monitoring and semi-annual water quality sampling conducted across five groundwater monitoring wells as part of ongoing monitoring. NMED approved the Stage 2 Abatement Plan in October 2023. www.env.nm.gov/former-mines-mills/home/jj-no-1-mine-site-review/	Erosion control measures are planned for 2024. These control measures will be monitored for one year in conjunction with two more vegetative surveys. The site is anticipated to be ready for release from the Mining Act within the next two years.
Mount Taylor Mine	Rio Grande Resources Corporation (RGR) submitted a renewal and modification application for DP-61 in 2020. NMED is performing a technical review of the application, and once NMED deems the application technically complete, NMED will draft the discharge permit and submit it to the public for review, comment, and the opportunity for a hearing. www.env.nm.gov/former-mines-mills/mt-taylor-mine-site-review/	MMD is currently processing an application from RGR to revise the permit with an updated Closure/Closeout Plan, including the expansion of the South Waste Rock Pile/Disposal Cell and the closure designs for the two main production shafts. MMD is processing the application under Revision 22-1. MMD submitted the first round of comments to RGR in May 2023 and is awaiting comments from RGR.
Rio Algom Mining LLC (RAML) Mines	Section 17, 22, 24, 30, 30W, 33, and 35 mines are under Discharge Permits 67, 71, 264, and 362. RAML is developing a Stage 1 Abatement Plan under groundwater abatement with NMED. EPA and NRC are determining the jurisdictional areas associated with milling or uranium processing. In 2020, NMED and MMD worked with RAML to develop an interim Closure Plan. This plan updated the Financial Assurance and established general practices to be implemented at final closure. www.env.nm.gov/former-mines-mills/home/riogalgom-mines-site-review/	The Old Stope Leach Permit overlaps with NMED groundwater discharge permits and abatement, the EPA 6 Tronox settlement, and potential litigation in the San Mateo Creek Basin. MMD holds interim joint Financial Assurance with NMED in the amount of \$89,918,000 based off an interim Closure/Closeout Plan. As Tronox work moves forward on these sites, those pieces will be taken out of the Mining Act permit through modifications and revisions. NMED and MMD are participating in discussions regarding the Tronox settlement and NRC jurisdiction.

Site Name	NMED (Mining Environmental Compliance Section) comments/actions	EMNRD (Mining and Minerals Division) comments/actions
St. Anthony Mine	United Nuclear Corporation (UNC) submitted a Stage 2 Abatement Modification and revised Closure/Closeout Plan in 2022. The plan is under review by NMED. www.env.nm.gov/former-mines-mills/home/st-anthony-mine-site-review/	The Mining Act application is in place and the Closure/Closeout Plan was submitted to MMD in October 2022. MMD submitted the comments to the operator in May 2023. Interim Financial Assurance for the site is being held in the amount of \$71,892,417. Operator submitted responses to comments in August 2023 and is currently waiting for response from the Agencies.
Section 12 Mine	NMED serves as a consulting agency to EMNRD on the Section 12 Mine but does not regulate the site. In 2023 NMED participated in calls with MMD and the Responsible Party. www.env.nm.gov/former-mines-mills/section-12-mine-site-review/	The Section 12 Mine is currently under reclamation through a Director's Order with MMD which was signed in January 2020. The Final Reclamation Plan (approved April 2021) and Construction Drawings (approved January 2023) are in place. The Responsible Party has done some removal work on the site in the past year including the installation of bat cupulas on the two vent shafts and removal of the hoist and hoist house. Much work remains to be done. MMD and the Responsible Party are in legal discussions regarding the future reclamation for this site.
Section 27 Mine	MMD and NMED sent a joint letter in October 2022 requesting the supplemental Closeout Plan that follows current uranium cleanup guidance and NMED requested a Stage 2 Abatement Plan Proposal. UNC responded to the joint letter in December 2022. The surface reclamation requests by MMD were agreed upon. The NMED Abatement Plan Proposal will require more discussion. UNC submitted a Supplemental Characterization Workplan in October 2023. www.env.nm.gov/former-mines-mills/home/section-27-mine-site-review/	

- b. **Table 3** below shows activities related to formerly operating mills under State permit performed by Mining Environmental Compliance Section of NMED and by the Mining and Minerals Division of EMNRD.

Table 3.

Site Name	NMED (Mining Environmental Compliance Section) comments/actions	EMNRD (Mining and Minerals Division) comments/actions
Ambrosia Lake West Mill	Under Nuclear Regulatory Commission and NMED regulatory action, Rio Algom Mining LLC (RAML) conducts radon monitoring and groundwater monitoring at the site. www.env.nm.gov/former-mines-mills/home/ambrosia-lake-west-mill-site-review/	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request.
Ambrosia Lake (Phillips) Mill	DOE Legacy Management is the primary regulator and manager of the site and monitors disposal cell performance in accordance with a request from NMED and	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request.

Site Name	NMED (Mining Environmental Compliance Section) comments/actions	EMNRD (Mining and Minerals Division) comments/actions
	NRC general license provisions. www.env.nm.gov/former-mines-mills/ambrosia-lake-disposal-site-review/	
Bluewater Mill	NMED provides technical support to DOE Legacy Management on site monitoring and repair activities. www.env.nm.gov/former-mines-mills/home/bluewater-mill-site-review/	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request.
Church Rock Mine and Mill	The NRC made a final licensing decision in February 2023 to permit placing the mine waste within the mill tailings disposal area. NMED will be participating in Consent Decree negotiations with EMNRD, EPA, NRC, UNC-GE, and Navajo Nation EPA on the design and implementation of disposing uranium mine waste on the tailing impoundment. www.env.nm.gov/former-mines-mills/home/church-rock-mill-site-review/	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request. MMD, NMED and Navajo Nation EPA conducted a site visit in February 2023.
Homestake Mill	NMED assisted EPA in updating background radiation levels surrounding the site in a June 2023 study. In addition, NMED began working with EPA on a 2024 technical dual-domain study on the back-diffusion of groundwater constituents. NMED conducted site inspections, attended meetings with local communities, NGOs, NRC and EPA. NMED also conducted water sampling under a cooperative agreement with DOE for downgradient communities of the Bluewater and Homestake mills. www.env.nm.gov/former-mines-mills/home/homestake-mill-site-review/	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request.
L-Bar Mill	NMED provided technical assistance to DOE Legacy Management, the primary regulator and manager of the site. www.env.nm.gov/former-mines-mills/home/l-bar-mill-site-review/	EMNRD does not regulate mill sites but provided technical assistance to NMED upon request.

Section 2: Activities in Uranium Reclamation Undertaken by EMNRD/MMD

(1) Strategic Plan

Worked closely with NMED personnel in the creation and editing of the *Uranium Reclamation Strategic Plan*.

(2) Centralized Data Repository and Dashboard

- a. Worked with NMED Uranium Mine Reclamation Coordinator and IT personnel to build the current version of the data repository and associated dashboard of *Formerly Operating Uranium Mine and Mill Sites*.

- b. Created and administered a Request for Proposals to engage a consultant to work on the data repository, site inventory, site reclamation statuses, and associated dashboard of *Formerly Operating Uranium Mine and Mill Sites*.

(3) Consultation and Coordination

See Table 1. Table content represents coordination or consultation performed by the Uranium Mine Reclamation Coordinator and does not present all work performed by the Mining and Minerals Division (MMD) section of EMNRD which permits and enforces all reclamation work for sites with an identified Responsible Party.

(4) EMNRD-Permitted Mine Sites in Reclamation

See Table 2 (mines) and Table 3 (mills).

Section 3: Activities in Uranium Reclamation Undertaken by Coordinating Agencies

The **New Mexico Department of Cultural Affairs (NMDCA)** and the State Historic Preservation Officer reviews state and federal undertakings that have the potential to affect historic properties in compliance with state cultural property statutes and Section 106 of the National Historic Preservation Act. In 2023, NMDCA consulted with NMED and EMNRD on the St. Anthony Mine and Mount Taylor mine permits.

The **New Mexico Department of Game and Fish (NMDGF)** provides technical guidance for reclamation projects focusing on recommendations for ways to avoid or minimize potential impacts to wildlife during reclamation activities and on how to improve and enhance wildlife habitat within the reclamation site. In 2023, the NMDGF consulted with NMED and EMNRD on the St. Anthony and Mount Taylor mine permits. NMDGF also attended site visits with EMNRD to La Paloma, Pineapple 1, North Star, and Vargas-Jaramillo sites.

The **New Mexico Department of Health (DOH)** coordinates with NMED to conduct well water sampling events for general analyte testing and refers uranium or radioactive elemental testing requests to NMED. In 2023, DOH coordinated sampling events with the Mining Environmental Compliance Section of NMED.

The **New Mexico Department of Transportation (DOT)** supports the Uranium Reclamation Program by assisting with transportation issues such as conducting weight analysis for potential restrictions based on structure limits where applicable, posting signage as necessary to indicate potential restrictions and provide public awareness, and reviewing site specific documents and other technical support as requested. In 2023, DOT did not have any applicable projects to review as no permits for uranium reclamation involving highway transportation were submitted to the State.

The **New Mexico Department of Workforce Solutions (DWS)** supports the Uranium Reclamation Program by applying its existing programs to partner agency efforts, including, but not limited to, NMED and EMNRD. DWS promotes uranium reclamation careers for unemployed and underemployed workers to aid in relevant training program availability and workforce readiness. Additionally, DWS coordinates with agencies to fund job training and recruitment programs to aid industries, higher education institutions, and local governments in supporting uranium

cleanup opportunities. In 2023, DWS met with NMED, employers, the Northern Area Local Workforce Development Board, and San Juan College to discuss how to approach the creation of a job-training program. A Memorandum of Understanding between NMED, DWS, and San Juan College is underway.

The New Mexico Indian Affairs Department (IAD) supports the Uranium Reclamation Program by assisting with consultation, collaboration and communication as per the State Tribal Collaborations Act. In 2023 IAD contributed to review of the draft Strategic Plan and the draft Annual Report. In 2024 the IAD Tribal Environmental Program Coordinator will work to ensure expanded outreach, engagement and collaboration with the Nations, Tribes, Pueblos, Indigenous peoples and stakeholders.

The Office of Natural Resources Trustee (ONRT) supports the Uranium Reclamation Program by collaborating on the analysis and sharing of data used to measure impacts of uranium mills and mines on New Mexico's natural resources. In addition, ONRT collaborates with State, Tribal, and Federal entities on natural resource restoration activities when funds are available. In 2023 ONRT collaborated with State, Tribal, and Federal entities on uranium-related natural resource damage assessments.

The Office of the State Engineer (OSE) supports the Uranium Reclamation Program by implementing institutional controls on well drilling where appropriate, issuing well permits associated with uranium reclamation, restoration, and remediation in cooperation with NMED's efforts to protect human health and the environment, and regulating the issuance of well drilling permits. Additionally, OSE approves all well drilling and plugging plans within the state of New Mexico. OSE remains involved in the closure of two large shafts at the Mt. Taylor Mine.

The State Land Office (SLO) supports the Uranium Reclamation Program by coordinating on compliance issues at former uranium mines on State Trust Lands. SLO remains involved in discussions with EPA Region 6, NMED, and EMNRD regarding uranium contamination on State Trust Lands (Section 2 and 36 Mines) in the Ambrosia Lake subdistrict.

Section 4: Spending in Preceding Fiscal Year

NMED

In fiscal year 2023 (FY23; July 1, 2022 – June 30, 2023), three appropriations supported the planning, administration, and oversight of uranium reclamation and cleanup.

- Senate Bill 1 (2022 SS), Section 6 (G)(4) - for planning, administration, and oversight of uranium mine remediation and cleanup.
 - Budget: \$50,000
 - Expended: \$50,000
 - Recurring appropriation, transitioned to General Fund in FY24.

- Senate Bill 1 (2022 SS), Section 15 (l)(2) - for planning, administration, and oversight of uranium mine remediation and cleanup.
 - Budget: \$360,000
 - Expended: \$327,535 (91%)
 - Recurring appropriation, transitioned to General Fund in FY24.
- House Bill 2 (2022) Section 5 (90) - Uranium Mine Special.
 - Budget: \$250,000
 - Expended: \$0
 - Non-recurring appropriation.
 - Fund extension was requested and approved.
 - 80-90% expenditure is anticipated before June 30, 2024.

A total of 92% of the expiring funds were used in FY23 to support uranium mine reclamation efforts, including expenditures for personnel, contracts, equipment, vehicles, travel, training, and outreach.

EMNRD

In FY23, one appropriation supported the planning, administration, and oversight of uranium reclamation and cleanup.

- Senate Bill 1 (2022 SS), Section 14 (C)(6) - for planning, administration, and oversight of uranium mine remediation and cleanup
 - Budget: \$180,000
 - Expended: \$165,180 (92%)
 - Recurring appropriation, transitioned to General Fund in FY24,

A total of 92% of the funding available was used in FY23 to support uranium mine reclamation efforts, including expenditures for personnel, equipment, a vehicle, travel, and training. Contractor-related spending will begin in FY24.

Section 5: Uranium Mine Reclamation Revolving Fund

HB 164 created the Uranium Mine Reclamation Revolving Fund. No money has been appropriated for this fund, and the balance remains at zero.

In the future, deposits to the fund may be used for cleanup activities including site assessments, safeguarding, surface reclamation, and groundwater remediation, where appropriate. Pursuant to HB 164, deposits can be from “appropriations, gifts, grants, donations and money received by the department of environment or the energy, minerals and natural resources department from the federal government or other state agencies and other sources for conducting uranium mine and mill reclamation activities.”