Jackpile Mine on Laguna Pueblo

Background

The Jackpile Mine, once the world's largest open pit Uranium mines, is located on the Pueblo of Laguna near the village of Paguate. The mine was operated from 1953 to 1982 and covers approximately 7,868 acres. A Record of Decision was adopted by the U.S. Bureau of Indian Affairs and BLM in 1986 with the objective of reclaiming and stabilizing the site. Mine reclamation was conducted by the Pueblo of Laguna in the early 1990s and included backfilling open pits and regrading and covering waste rock dumps. In 2007, it was determined by the Pueblo of Laguna that reclamation was incomplete and assistance was sought from EPA. EPA conducted an investigation in 2010 and 2011.

Accomplishments

The site was placed on the NPL of Superfund sites in December 2013.

Next Step Planned

Perform a CERCLA remedial investigation and feasibility study (RI/FS).

Public Health Surveillance

Background

Historical releases from legacy Uranium sites throughout the Grants Mining District are documented. Area residents requested health screenings and studies to evaluate health impacts from Uranium mining and milling in the area.

Accomplishments

- New Mexico Department of Health (NMDOH) conducted public health surveillance for Uranium exposure. The results are documented in the "Grants Mineral Belt Uranium Bio-monitoring Project Summary" which is posted on the NMDOH Tracking website: https://nmtracking.unm.edu/environ_exposure/exposure-data_biomonitor/.
- NMDOH was successful in adding Uranium exposure as a notifiable condition: Uranium in urine greater than 0.2 micrograms/liter or 0.2 micrograms/gram creatinine. New Mexico is the only state to have Uranium exposure as a notifiable condition.
- A free on-line Private Well Class is being offered to home owners with water wells and other stakeholders to learn the basics of managing and protecting their water sources. The class is part of a new nationwide technical assistance and training initiative funded by the Rural Community Assistance Partnership through a grant by EPA. Information about the class is posted on the NMDOH Tracking website: http://nmtracking.org/water/en/environ_exposure/water-qual/private-wells/well-resources.
- Other information about private wells, Uranium and health is posted on NMDOH websites:
  - http://nmtracking.org/water
  - http://nmtracking.org/water/en/environ-exposure/contaminants/uranium

Next Steps Planned

Continue to field questions from the public regarding potential sources of exposure to Uranium and how to reduce exposure.

Soil excavation, backfill with clean soil, and rock placement for armoring at residence.

For more information, contact:

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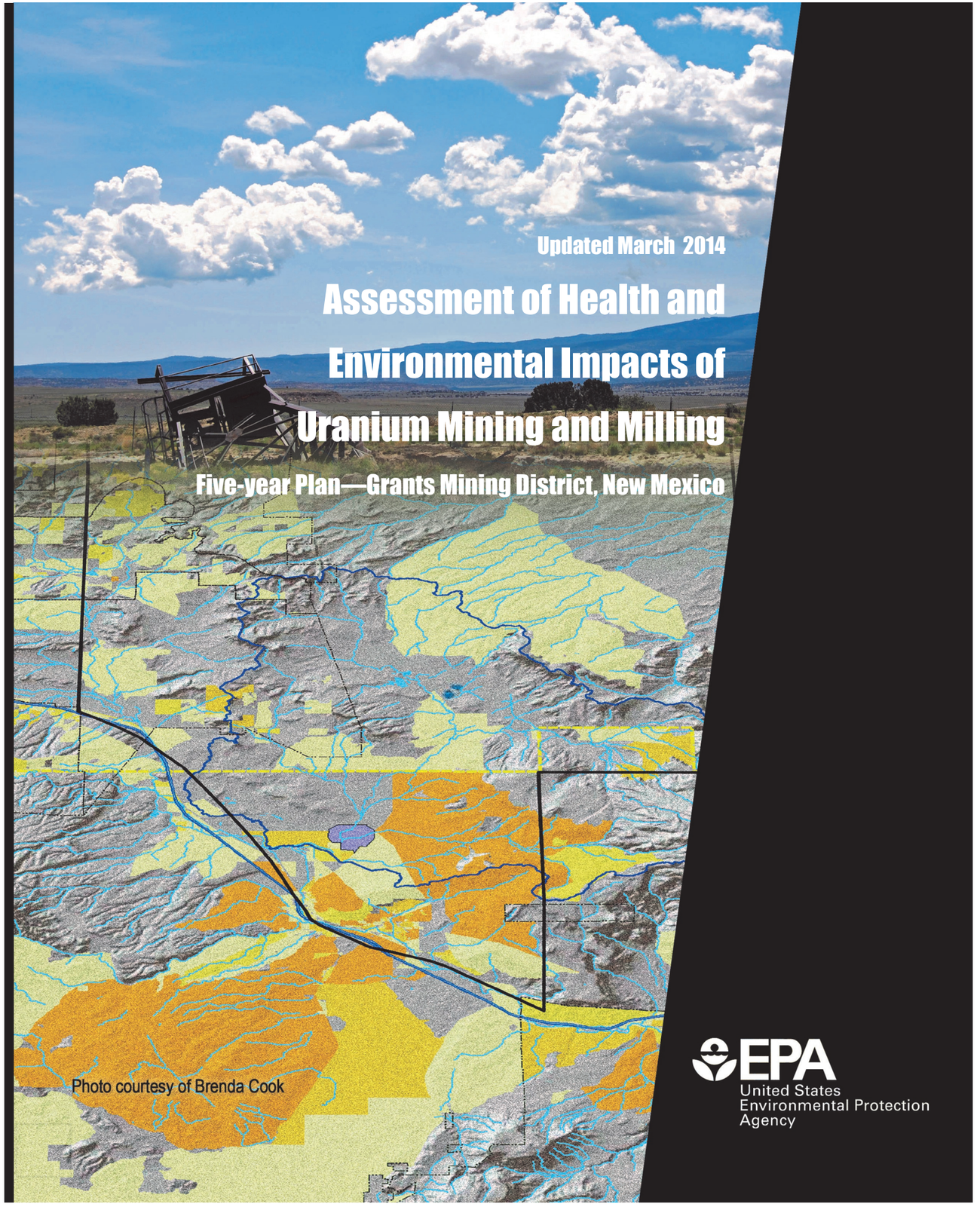

Assessment of Water Supply for Contamination

Background

Residents within the Ambrosia Lake and Laguna sub-districts rely primarily on private wells to provide a source of water for residential-domestic, stock-watering, and agricultural uses. Legacy uranium mining and milling operations generated liquid wastes that included water produced from mine dewatering operations and process water from milling operations. Elevated levels of uranium and other contaminants have been detected in ground water samples collected from monitoring wells and private wells in the Grants Mining District. The New Mexico Environment Department (NMED) and the U.S. Environmental Protection Agency (EPA) continue to assess the extent of contamination to ground water.

Accomplishments

- EPA and NMED collected and evaluated existing ground water data as well as planned for the collection of new data within the San Mateo Creek drainage basin in 2014.

Next Steps Planned

- Continue to refine the ground water investigation plan within the context of a comprehensive Grants Mining District investigation.
- As part of the plan, identify locations for new monitoring wells and obtain access agreements for entering property. Construct and sample the wells in 2014.
- Identify private wells to be sampled based partially on recommendation by Bluewater Valley Downstream Alliance (BVDA). Contact well owners for permission to sample private wells in 2014.
- Continue to perform regional mapping of contamination within the shallow alluvium and bedrock aquifers within San Mateo Creek drainage basin.

Assessment and Cleanup of Legacy Uranium Mines

Background

The Grants Mining District comprises an area of 100 miles by 25 miles where uranium extraction and production activities occurred from the 1950s to the late 1980s. There are 97 legacy mines in the district with the potential for physical hazards such as open adits and shafts, radiation, and the release of hazardous substances (primarily radionuclides and metals) to soil, surface water, and ground water.

Radiological Survey Buggy

Accomplishments

- Completed field investigations at Section 10, Section 15, Section 30 and Marquez Mines using characterization protocol developed for documenting a CERCLA release of hazardous substances at legacy uranium mine sites. Based on results, EPA determined that release of hazardous substances occurred at all four mines. Elevated concentrations of Radium 226, Uranium, Selenium and other metals were detected in surface soils. Elevated gamma radiation levels were also detected above background at all four mines. Field investigations have now been completed for nine mines, with releases of hazardous substances documented for all of them.
- Hecla completed a Site Investigation at the Johnny M Mine in accordance with a Removal Action Administrative Order on Consent with EPA. Elevated levels of radionuclides and metals were detected in the soil and sediment. A nearby resident and his livestock were relocated in 2011.
- Completed site evaluations of the Barbara J Mine complex in the Poison Canyon area, including soil sampling and analysis, to follow up on previous radiation survey done in 2009. Manganese was found at elevated concentrations. Physical hazards and elevated radon levels associated with the open boreholes and shafts, as well as elevated radiation levels at the mine waste piles, are the areas of highest priority to protect human health.
- Completed an environmental assessment of the Spencer Mine. Erosion has resulted in the mine shaft being head cut by an arroyo and filled with sediment. The head frame has also fallen over.
- Operator of the Rio Puerco Mine has submitted a reclamation plan to the U.S. Bureau of Land Management (BLM), including a proposed bond to meet financial assurance requirements. The plan is currently being reviewed by BLM.
- Reviewed proposal by Uranium Company of New Mexico to reclaim Rio Puerco Mine. Proposal includes characterization of mine waste, soil, and ground water on site.
- Evaluated need for ground water abatement actions or reclamation work at mines through implementation of the New Mexico mining and ground water discharge permitting programs.

Next Steps Planned

- Hecla shall complete engineering evaluation and cost analysis of remedial options at Johnny M Mine for EPA.
- BLM shall design removal action to close shafts and bore holes on the Barbara J complex of mines and cap highest radiation levels (30 pico curries per gram [pC/g] radium 226) in soil by end of 2014; perform construction work in 2015.
- BLM shall prepare a design reclamation plan to address the erosion issues at the Spencer Mine. The work plan is to reroute drainage around the site, backfill erosion around the head frame, cover mine waste with three feet of soil and seal vent shaft with polyurethane.
- U.S. Forest Service (USFS) shall complete engineering evaluations and cost analyses for closure/remediation of the Zia, Taffy, old La Jara and Vallejo Mines located on USFS lands in 2014. Preliminary assessments and site inspections were completed at these mines in 2012.
- BLM shall complete review of the reclamation plan for the Rio Puerco Mine.
- EPA or other regulatory agencies shall conduct emergency action at mine sites when warranted due to releases of hazardous substances to the environment or physical hazards.
- NM Energy Minerals and Natural Resources Department and NMED shall continue to evaluate need for ground water abatement actions or reclamation at mines through the implementation of New Mexico's mining and ground water discharge permitting programs.

Contaminant Assessment, Cleanup, and Long-Term Management of Former Uranium Milling Sites

Background

There are five legacy uranium mill sites within the Grants Mining District. Four are located in Ambrosia Lake sub-district and one in the Laguna sub-district. The Homestake Mill site and the Ambrosia Lake-Rio Algom Mill site are currently under the jurisdiction of the U.S. Nuclear Regulatory Commission (NRC) until reclamation is complete. The Homestake Mill site is also on the National Priorities List (NPL) of Superfund sites and regulated by EPA. Once reclamation at these two mill sites is complete and the sites are decommissioned, they will be transferred to the U.S. Department of Energy (DOE) for long-term surveillance and monitoring under its Legacy Management Program. The Homestake cleanup will also need to satisfy Superfund requirements and the site delisted from the NPL before such transfer. DOE is currently responsible for such activities at the Ambrosia Lake-Phillips Mill site, the Anaconda Bluewater Mill site, and the L-Bar Mill site as reclamation and decommissioning have been completed.

Accomplishments

- DOE continued to monitor ground water quality in the San Andres/Glorietta aquifer and the alluvial aquifer at the Anaconda Bluewater Mill site to delineate the extent of contamination. This effort included sampling the 10 new monitoring wells installed in 2012 as well as six private wells located beyond the perimeter of the site. The six private wells were sampled in the summer and fall of 2013. The results showed that two wells had concentrations of Uranium above the federal drinking water standard of 30 micrograms per liter (µg/L); an alluvial well (133 µg/L) and a San Andres well (87 µg/L). The San Andres well is a former Anaconda production well. The source of the elevated Uranium in that well is believed to be from former mill site. The source of the elevated Uranium in the alluvial well has yet to be determined. Both wells are used for livestock watering. DOE is performing a qualitative risk assessment on the data collected. Additional monitoring wells may be constructed by DOE in 2014 as needed.
- EPA is preparing responses to comments received on the draft final Baseline Human Health Risk Assessment (HHRA) at the Homestake Mill site, which can be viewed on the EPA's web site at: http://epa.gov/region6/6sf/newmexico/homestake_mining/index.html
- The draft ground water Corrective Action Program for the Homestake Mill site has been reviewed by federal and state agencies and the public. Comments from the review were provided to NRC. NRC is preparing a request for additional information to the owners of the Homestake Mill site and responses to the comments received on the Corrective Action Program.
- A draft ground water discharge permit renewal (DP-200) was released by NMED in December 2013 for the Homestake Mill site. The draft permit renewal identified ongoing cleanup activities that produce discharge that may move into ground water, including water injection to the large tailing pile and aquifers, land application of ground water, and new treatment technologies to be implemented at the site. Public meetings were held by NMED to discuss the permit on December 11, 2013 and February 3, 2014. A 60-day public comment period closed on February 18, 2014. Comments were sent to NMED by BVDA, the Multi-cultural Alliance for a Safe Environment (MASE) and the NRC.

Next Steps Planned

- DOE shall continue to conduct the ground water investigation at the Anaconda Bluewater Mill site, including installation and sampling of additional monitoring wells, if warranted.
- EPA shall respond to public comments and complete final HHRA Report for Homestake Mill site.
- NRC shall complete revision of the ground water Corrective Action Program for the Homestake Mill site based on comments from federal and state agencies and the public.
- NMED shall respond to comments on DP-200 by MASE, BVDA and others.

Waste Staging Area and Berm for Mormon Farms Removal Action

Assessment and Cleanup of Contaminated Structures

Background

The Grants Mining District has been inhabited since the 12th century; therefore, structures can date back to those early days. More recent dwellings may be constructed of materials unearthed during mining activities or built on or near high Uranium-content lands. Based on the results of the Airborne Spectrophotometric Environmental Collection Technology (ASPECT) Gamma Emergency Mapper and residential radiological survey, EPA has been surveying structures and properties potentially affected.

Accomplishments

- Assessed 891 structures/properties to date for gamma and elemental Uranium contamination. Of those, 128 properties had radiation above action levels; 83 have been cleaned up and another 45 in Bluewater Village and the Mormon Farms area are targeted for cleanup.
- Continue to assess properties and structures in Acoma Pueblo villages.
- Installed one radon abatement system in a home near the Homestake Mill site.
- Constructed waste staging area for removal actions planned for 19 properties in the Mormon Farms area south of the Homestake Mill site.

Next Steps Planned

- Complete removal action cleanups at 19 residential properties in the Mormon Farms area.
- Continue to assess properties/structures in Acoma Pueblo villages.
- Continue to implement radon abatement at residences, as warranted.
- Continue to clean up contaminated soil at residences, as needed.
- Continue to clean up contaminated structures, as needed.