

ABANDONED URANIUM MINES IN THE DISTRICT 9 GRAZING AREA Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters

COMMUNITY INVOLVEMENT PLAN



INTRODUCTION

The Navajo Nation was the site of widespread uranium mining from the 1940s to the 1980s. While uranium mining no longer occurs within the Navajo Nation, the legacy of uranium contamination remains. More than 500 abandoned uranium mines (AUMs) are spread throughout the Navajo Nation, some homes were built with mine waste, and some water sources have elevated levels of uranium and other contaminants. The Navajo Nation Abandoned Mine Lands Reclamation Program (AML) addressed the physical hazards at many AUMs by closing mine openings and burying mine waste between the 1990s and the 2000s. The U.S. Environmental Protection Agency (EPA) and the Navajo Nation Environmental Protection Agency (NNEPA) implement removal actions where contaminated structures and surrounding soils are found to pose a risk to residents.

The federal government continues to address the legacy of uranium contamination on the Navajo Nation, as described in the Ten-Year Plan (2020-2029). This Plan builds on the work conducted in the previous two Five-Year Plans, makes adjustments based on information gained during this time, and describes the next steps in addressing the risks to human health and the environment. This plan is available on EPA's website:

https://www.epa.gov/navajonation-uranium-cleanup/ abandoned-mines-cleanup-federal-plans Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the federal Superfund law, EPA Region 9 – located in San Francisco, California – is working with NNEPA and area communities to oversee uranium mine assessments and cleanups on the Navajo Nation. Funds are available for 230 AUMs on the Navajo Nation as of 2021.

Seventy-eight AUMs are in the District 9 Grazing Area located in four chapters - Tolikan, Teecnospos, Red Mesa, and Mexican Water. No AUMs have been identified in the Rock Point Chapter. Funds are available to assess and conduct any necessary cleanup at 52 mines (see maps on pages 32-34).

This Community Involvement Plan (CIP) focuses on these residents, chapter officials, and other interested parties in the District 9 Grazing Area. While there are additional mines in these chapters that EPA and NNEPA may address in the future, the agencies are currently focusing on 52 mines for which there is funding. For more information, please contact:

Elsa Johnson EPA Community Involvement Coordinator (415) 947-3552

Tennille Begay NNEPA Superfund Program Remedial Project Manager (928) 871-6859

The Legacy of Uranium Contamination: Looking Back, Looking Forward

The AUMs have created public health and environmental challenges for everyone who calls the Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters home. Contamination has affected people's lifeways for several generations.

Despite these challenges, many of the people interviewed for this CIP emphasized their lifelong love of the area, and their determination to remain in their communities. **Ensuring effective and timely** cleanups in this area is a communitywide priority.

EPA and NNEPA are committed to working with the communities to address the legacy of uranium contamination and protect public health and the environment.



AUM: Abandoned **Uranium Mine**



Cover photo: North face of Carrizo Mountain.

Role of NNEPA

The NNEPA Superfund Program (NSP) implements the Navajo CERCLA by providing oversight of AUM work on the Navajo Nation and serves as a co-regulator with EPA. The NSP advocates for communities impacted by AUMs on the Navajo Nation by working hand in hand with EPA to coordinate community outreach. The NNEPA is committed to protecting Mother Earth and Father Sky and all living beings through environmental laws and regulations by honoring traditional Diné teachings and culture.

This CIP is a guide for community members and EPA to ensure that information sharing and dialogue regarding EPA's activities in the Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters are participatory and meaningful. This document outlines specific outreach activities to address community concerns and to meet the following goals in these chapters:

- Provide community members with accurate, timely, and understandable information about EPA's AUM activities that reflects community members' communication preferences and culture
- Provide information in the Navajo language, when needed, so all community members have an equal opportunity to participate
- Coordinate with community members and tribal leaders to make sure EPA understands community concerns and considers community goals in its decision-making process
- Work with consideration of Navajo Nation's goal to implement Diné Fundamental Law, acknowledging the Navajo traditional lifeway, traditional ecological knowledge, and the laws of nature, including protection of any significant ceremonial land use areas, past and present



🌃 Navajo wild carrot or Chaasht'ezhiitsoh, Mexican Water, Utah.



The Community Involvement Plan (CIP)

The CIP is the foundation of EPA's Superfund Community Involvement and Outreach Program. This CIP is a living document to assist communication between community members and EPA. The document outlines opportunities for individual participation and meaningful information sharing regarding EPA's activities in the District 9 Grazing Area. The CIP is also a tool for the public to make sure EPA is responsive to their needs and concerns.

To put this plan together, EPA interviewed community members, chapter officials, and other stakeholders in the area from November 2017 through March 2018. EPA also met with the District 9 Grazing Committee and communicated with chapter officials and community members in Mexican Water in 2019. Interview findings, combined with information from EPA experiences in the community and additional reports, guided the development of the CIP. The interviews with community members are confidential; a summary of the responses is provided in this plan.

EPA's Technical Assistance Services for Communities (TASC) Program assisted EPA during the interview process. EPA has been working with the chapters and community members to respond to their needs with support from the TASC Program where appropriate.



All we want is to live in harmony again, and not to be bothered by negative effects from uranium.

> --Community Member, March 2018 Interview

Left photo: Desert shrubs near Teecnospos. This page: Winter snow along the Carrizo Mountains.



Mural of Navajo homestead, Teecnospos Chapter (Artist: Edwin Shorthair).

COMMUNITY INVOLVEMENT PLAN ORGANIZATION

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THE—COMMUNITY

Mural of Navajo life in Teecnospos Chapter House (Artist: Edwin Shorthair).

THE COMMUNITY

COMMUNITY PROFILE

The District 9 Grazing Area is located in a beautiful and relatively remote area in northeastern Arizona and southern Utah. Uranium mining occurred in the Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters of the District 9 Grazing Area. The region lies within Apache County in Arizona and San Juan County in Utah and borders



Monsoon clouds over the District 9 Grazing Area.

other Navajo Nation Chapters as well as parts of Colorado's western and southern state lines. The area is part of the Navajo Nation's larger northern Shiprock Agency.

From 1944 to 1986, uranium mines on and near the Navajo Nation yielded 30 million tons of uranium ore. Some of the mines provided uranium for the Manhattan Project, the top-secret effort to develop an atomic bomb, and for the weapons stockpile during the arms race with the Soviet Union. Beginning in 1966, uranium ore was sold to the commercial nuclear power plant and medical industries.

From the late 1940s through 1967, uranium ore was mined at 78 sites in the District 9 Grazing Area, and many of these mines also produced vanadium. Ore bodies at or near the surface were mined. After the price of uranium collapsed in the mid-1960s, the mines were abandoned, leaving behind waste rock debris consisting of radioactive low-level ore. The Navajo AML performed reclamation activities to address physical hazards at many of the mines beginning in the 1990s.

EPA and NNEPA, in cooperation with the Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters, is in the process of investigating and addressing the risk that 52 AUMs pose to these communities. EPA is conducting

these activities under authorities granted in CERCLA, also known as the Superfund law.

Settlement agreements provide funding for 230 AUMs on Navajo Nation. Fifty-two AUMs in the District 9 Grazing Area are being addressed by settlement agreements:

- 40 mines funded by a 2017 settlement agreement with Cyprus Amax and Western Nuclear, two companies owned by Freeport-McMoRan,
- 10 mines, including a water study funded by settlement agreements between the United States and the Navajo Nation.
 There are no responsible parties for these mines. Four of these mines were assessed in 2018: Barton 3 mine in Red Mesa, the NA-0904 and NA-0928 mines in Tolikan, and the Tsosie 1 mine in Teecnospos.
 Results from these detailed assessments were shared with the community on October 23, 2018, at the Tolikan Chapter House, and
- 2 Tronox mines the Brodie 1 mine and the Block K mine. Detailed assessments for these mines were completed in 2019.

Funded Abandoned Uranium Mines in District 9 Grazing Area

Responsible Party or Trust	Number of Mines	Superfund Process Status
Cyprus Amax	40 mines (five of which are priority mines)	Removal Site Evaluation field work conducted at 18 mines
Phase 1 Trust Phase 2 Trust	10 mines (four of which are priority mines, and two of which are selected for a water study)	Removal Site Evaluations for four mines completed in 2018
Tronox	Two mines	Removal Site Evaluations completed in 2019



THE SETTLEMENT AGREEMENTS: A CLOSER LOOK

- The United States and the Navajo Nation entered into two legal agreements (the Phase 1 Settlement in 2015 and the Phase 2 Settlement in 2016) that provide funds to assess and clean up 16 "priority" mines, assess an additional 30 mines, and conduct two water studies on the Navajo Nation.¹ No responsible party is available to pay for the mines in these settlements.
- The 2017 settlement with Cyprus Amax and Western Nuclear, two companies owned by Freeport-McMoRan, covers 94 AUMs. These mines are located across the Navajo Nation.
- The 2015 Tronox Settlement provides almost \$1 billion to clean up more than 50 mines, including 34 AUMs operated by Kerr-McGee Corporation on the Navajo Nation. Two of these mines are in the Tolikan and Teecnospos Chapters; the other 32 mines are in the Cove and Lukachukai Chapters.

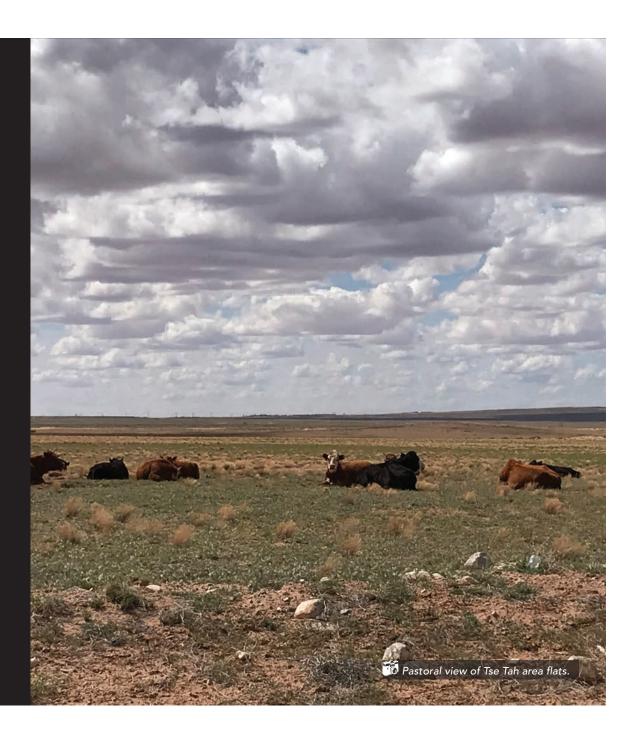
¹ EPA and NNEPA identified 46 priority mines on the Navajo Nation based on radiation levels and proximity to homes or potential for water contamination.

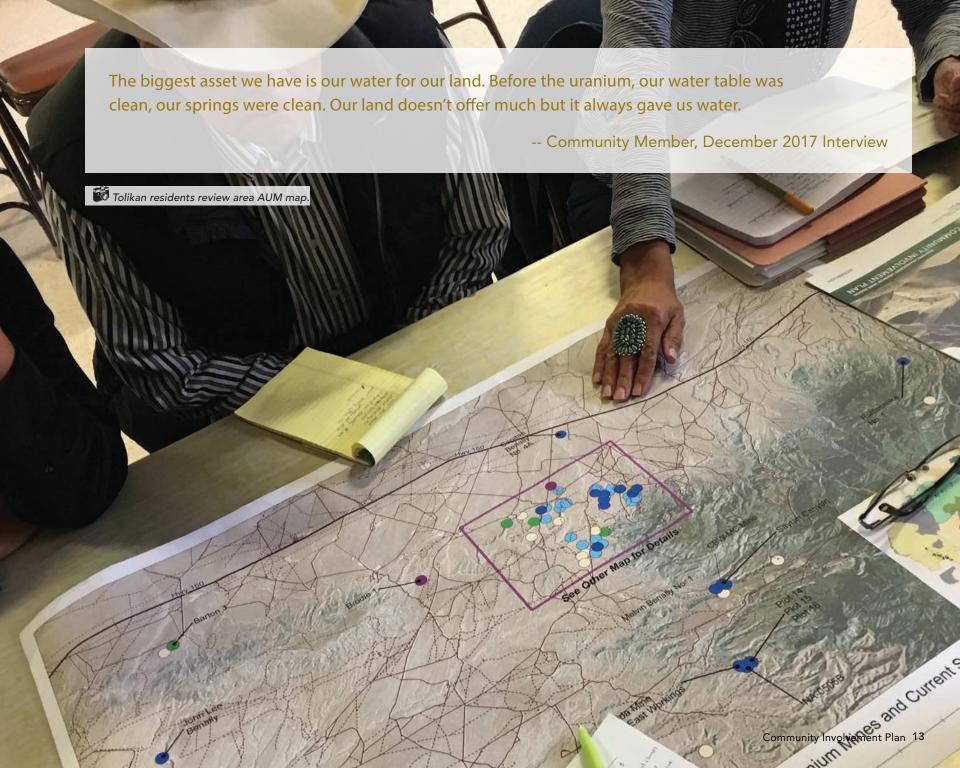
Cultural Significance of the District 9 Grazing Area

Home to multiple Diné Navajo clan groups for generations, this area is a rich environmental landscape of many animals, birds, reptiles, insects, trees, plants, distinctive landforms, cultural places, and the Nihokaa Diyiin Diné - Earth Surface Holy People - the Diné.

The Diné have lived in this rich and complex environmental biome with the simple understanding of harmonious existence. This relationship of balance is a blend of sacred respect and a deep knowledge of ecological wisdom that has been the fundamental principle of sustainability for millennia.

Then, 70 years ago this intricate balance was disturbed and impacted forever with the discovery of uranium in the area. Today, there are 78 AUMs in the District 9 Grazing Area.





Community Overview

The area is home to vibrant communities with longstanding cultural ties. The area includes lands of striking beauty with the Carrizo Mountain to the east. Community facilities include the Four Corners Regional Health Center, the Red Mesa Unified School District, and a Navajo Technical University satellite office. Residents live near the chapter houses or in more remote locations. Many residents drive long distances to reach stores and residents drive long distances to haul water.

Some community members in the area own and graze sheep, cattle, and horses near their homesites and sheep camps. Most of the land in the area is used for grazing and ranching, though to a lesser degree now than in the past due to various factors, including concerns over contamination. Various plants are also used for medicinal and traditional purposes.

The District 9 Grazing Area includes places with high concentrations of the best habitat for endangered and rare plants, animals, and game species. To protect this habitat, the Navajo Nation Department of Fish and Wildlife and the Navajo Land Department have designated these places a "red zone" and prohibit homesite leases and home construction in these areas. The "red zone" designation is not related to the abandoned uranium mines.

Economics

According to the Navajo Nation Division of Economic Development, most jobs on the Navajo Nation are in the government and service sectors (including schools and hospitals). Additionally, many activities in the Navajo Nation economy are unreported, such as selling arts and crafts to area trading posts or at the Four Corners Monument or other small home-based enterprises. Regardless of whether unreported economic activities are considered in employment calculations, the actual unemployment rate for the Navajo Nation is substantially higher than the national average.²

While economic information is not collected specifically for the District 9 Grazing Area, the government and service employment sectors are visible in the region. The chapters feature the Carrizo Mountains and the Four Corners Monument as well as a hilly, high-altitude mountain-and-plain landscape that includes canyons, mesas, and sandstone outcrops. Bringing visitors to the area is a major interest of the chapters.

Demographics

About 5,000 predominantly Navajo people live in the Tolikan, Teecnospos, Red Mesa, and Mexican Water Chapters.³

The languages spoken in the area are primarily English and Navajo. According to the 2009-2013 American Community Survey, more than three-quarters of community members (over 82 percent) in the area's chapters speak a language other than English at home. About a third of community members in the area (32 percent) maintain fluent communication in their native Navajo language, particularly the elders.⁴

² Navajo Nation Division of Economic Development. Navajo Nation Comprehensive Economic Development Strategy, April 2018.

³ Navajo Nation Division of Health and Navajo Epidemiology Center. Navajo Nation Population Profile 2010 Census, December 2013.

⁴ Navajo Nation Division of Economic Development. 2009-2013 American Community Survey.

COMMUNITY CONCERNS AND PREFERENCES

To better understand the community, its culture, and concerns, EPA interviewed community members, local officials, and stakeholders in the area. All interviewees knew of nearby AUMs. Many community members shared stories about family members who worked in the mines, grazed livestock nearby, visited the underground mine tunnels, and drank from and washed in local water sources. Children also played in these waters. The community's livestock and area wildlife rely on these waters as well. Sometimes the open adits served as holding areas for sheep and lambs. Interviewees also noted the use of dirt and rocks from the mines for homes. hogans, and sweat lodges in the area.

All interviewees shared the concern that the mine cleanups should be thorough, protective, lasting, and timely. While community members expressed frustration at the approach and limits of past reclamation efforts and the delay in federal government involvement in mine cleanup, most welcomed EPA's current efforts in the area. Looking forward, interviewees emphasized the importance of economic development that is safe for people and the environment. Interviewees also noted that infrastructure improvements during cleanup could benefit area communities.

Community concerns and preferences are outlined in this section, and EPA's community involvement action plan is outlined in the next section. The action plan explains how EPA plans to address the concerns listed here. Some concerns described during the interviews are within the scope of EPA's work on AUMs and can be addressed by EPA working with the community and local tribal leaders directly. EPA will refer concerns outside of EPA's scope to other federal, tribal, and community organizations.

Community concerns and preferences are grouped into the following categories:

- 1. Health Concerns
- 2. Concerns About AUMs and the Affected Environment
- 3. Future Land Use Concerns
- 4. Air and Water Concerns
- 5. Communication and Information Preferences
- 6. Compensation Concerns



🕼 Underground soil sampling with drill rig during Removal Site Evaluation.

The biggest need is water. Before the uranium companies caused the mine waste, our water was clean. Now our water table, artesian springs, and streams have been polluted, even the runoff can't be trusted. We are living in the midst of contamination.

> -- Community Member March 2018 Interview

Health Concerns

Many community members shared stories about their illnesses or illnesses of their loved ones. Community members and local officials also expressed the following health concerns:

- Health effects of dust blowing from the mines and mesas
- Monitoring for radiation exposure
- Livestock and wildlife grazing in mine areas
- Quality of water for people and livestock
- Past reclamation efforts in the area
- Health effects such as cancers, stomach pain, asthma, heart problems, and birth defects

Some community members and local officials indicated that recent factsheets on radiation and uranium have been helpful. They requested additional information and more frequent updates, including the following information:

- How to reduce contact with uranium and better understand the risks of everyday activities
- Site-related health information
- Which health conditions may be related to uranium and radiation exposure
- Key findings from earlier health studies in the area

Since CERCLA activities do not directly address human illnesses, the 2021 Resource List in the Appendix identifies who to contact for these and other topics.



The Navajo Area Indian Health Service (IHS) provides health care to eligible American Indians through a network of hospitals and health centers. IHS also funds and develops water infrastructure projects to serve Navajo homes.



The U.S. Agency for Toxic Substances and Disease Registry (ATSDR) protects communities from harmful health effects related to exposure to natural and man-made hazardous substances. ATSDR responds to environmental health emergencies; investigates emerging environmental health threats; conducts research on the health impacts of hazardous waste sites; and builds capabilities of and provides actionable guidance to state and local health partners.



The Navajo Department of Health participates in health studies and conducts medical screenings related to uranium exposures.

Concerns about AUMs and the Affected Environment

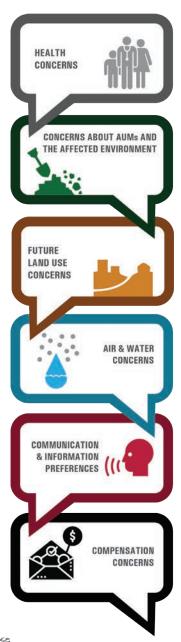
Many interviewees discussed their concerns about community involvement in the cleanup process. Community members and local officials requested that chapter officials, affected families, and the general population receive timely updates. Many community members expressed concern about whether EPA would consider their input in the decision-making process. Community members and local officials also asked for clarification on the roles of various organizations and noted the need for more outreach and education about EPA's cleanup process. People indicated that many in the community have felt ignored for a long time and requested consistent engagement with NNEPA as well as EPA.

Community members were also interested in more information on the Tronox Settlement, the Cyprus Amax and Western Nuclear Settlement, the Phase 1 and Phase 2 Settlements and Trusts, and how these agreements and entities impact and guide assessment and cleanup efforts in the area.

Participants shared several concerns about the cleanup of the affected environment. Community members and local officials worry about the extent of cleanup, with a focus not just on area mines but also on the mesas, community areas and homes, grazing land and wildlife habitat, and the need for clean air and water. Community members expressed concern about the limited protectiveness and effectiveness of earlier reclamation efforts by the Navajo AML, including buried waste piles.

Community members also noted that many areas include sacred sites, burial areas, and ceremonial locations, and indicated that cleanup should take these cultural and historical resources into account. Interviewees also shared concerns about poor road conditions and traffic being made worse by future cleanup activities, as well as long-term monitoring of the cleanup and the availability of funding.

Finally, community members and local officials indicated a need for mapping and signage so that people can understand the location and number of mines in the area, as well as specific locations that should be avoided for the time being. They also want to make sure all mines are addressed in other nearby places.



Future Land Use Concerns

Many interviewees emphasized the need to ensure that, in addition to the mines, community areas are safe for people to live in, work, and gather for family events and cultural ceremonies. Community members and local officials requested regular and consistent communication between EPA and the community in the future.

Community members and local officials also shared their thoughts about future land use of mine areas and mesas. Some questioned whether the land will ever be safe for humans, livestock, or wildlife. Many expressed their preference that the land be restored safely to farming and grazing use and wildlife habitat. Most agreed that the land should not be simply fenced off and restricted from use by current and future residents. Improving local infrastructure – including roads in poor condition, electricity, and running water – is a priority for the chapters. Increasing employment opportunities in the area is also a major interest.

Air and Water Concerns

Air and water quality, and access to safe drinking water were among the most important environmental issues in the area. Chapter Officials and Council Delegates have asked for more water studies to understand the potential impact from the AUMs on water quality in this area as well as other areas across the Navajo Nation. Many community members and local officials believe that water sources and local wells have been contaminated by AUMs and bore holes, with water supplies having to be brought in from outside the area. They are also concerned about the mines' potential effects on groundwater and its future use as a drinking water source. Community members are also worried about health risks from rainwater and snowmelt that runs from mines and mesas toward homes and community areas. Interviewees noted that wind-blown contamination and dust are major concerns. They asked how and when air monitoring could take place.

Communication and Information Preferences

Many community members shared their preferences for communication and receiving information. Most agreed that EPA should be transparent about its work and strive to include all community members. Community members want EPA to keep chapter officials updated on all work and share information directly with community members. Many requested that EPA help the community coordinate informationsharing and education efforts across the chapters, by establishing a community liaison, and/or by forming a group or task force that can assist in sharing information across the chapters. Community members also asked about how agencies will communicate internally and with the community, with an emphasis on the need for coordination and transparency. Community members shared a strong preference for in-person communication, including home visits and small-group meetings. Community members requested the use of plain language in all written materials.

Compensation Concerns

Community members are concerned about limitations in the Radiation Exposure Compensation Act (RECA). Many community members and chapter officials want to expand RECA eligibility for uranium miners and their spouses and children, as well as all people affected by the mines. EPA is not responsible for RECA compensation – that is the responsibility of the U.S. Department of Justice. For more information, contact the Navajo Nation Uranium Mine Workers program and the Navajo Nation Radiation Exposure Screening and Education Program in Shiprock, New Mexico. The uranium and radiation Resource List on page 38 identifies who to contact for uranium workers radiation exposure compensation claims.

Life long ago was simple, we were nomadic (summer in the mountains, down valley in the winter). Then we got grazing rights here. We took care of the land and the land took care of us. We prayed for health and happiness. All of that is gone now, because of the mines.

Long ago we had cattle and horses and took care of Mother Earth and she took care of us – now that's gone. We used to sing, dance and pray here ... The land cannot ever be returned to the way it was. So let's think of solutions for the long term.

-- Community Member, November 2017 Interview 🕳 Navajo sheep, Rockpoint Valley. Community Involvement Plan 19





THE COMMUNITY INVOLVEMENT ACTION PLAN

Sadie Hoskie Phase 1 Trustee sharing Removal Site Evaluation results for four mines with Tolikan Chapter members, October 2018.

THE COMMUNITY INVOLVEMENT ACTION PLAN

After interviewing community members, local officials, and stakeholders to better understand community issues and concerns, EPA prepared this community involvement action plan for the area.

- This action plan outlines the tools that EPA will use to share information with the community.
- The action plan also outlines how EPA staff will be available to receive input from the community that will be considered in the decision-making process.
- Finally, the action plan details EPA's
 partnership with the Navajo Nation tribal
 government in the development and
 implementation of all activities at AUM
 sites.

Timing information is included with each outreach tool to help community members understand when EPA will conduct outreach activities and the type of activities to expect.

Community members can also contact the EPA Community Involvement Coordinator.

EPA understands that many residents, especially elders, are Navajo language speakers. To facilitate the inclusion and participation of all community members, EPA's Navajo-speaking Community Involvement Coordinator will speak in the Navajo language, as needed, during information meetings, open houses and door-to-door outreach. Interviewees recommended that EPA develop printed materials in English.

TOOLS FOR SHARING INFORMATION AND OPPORTUNITIES FOR EPA TO LEARN FROM THE COMMUNITY

EPA will use the following tools to ensure that community members have opportunities to provide meaningful input and to make sure community concerns are considered during EPA's cleanup decision-making process.

Written Communication

Most interviewees expressed a preference for receiving written communication from EPA. Additionally, community members and local officials noted that written communications are an effective tool for reaching remote residents. They stressed that written communication be short and simple, in plain language, and include as many graphics as possible.

EPA will provide written communications through factsheets and flyers, which will address the community concerns identified during the interviews. EPA will make sure contact lists are up to date and include interested residents in the area. Community members on EPA's contact list will receive information such as meeting invitations. To be added to EPA's contact list, please contact EPA's Community Involvement Coordinator.



Community members can discuss concerns with EPA whenever a representative is in the area, or contact EPA Community Involvement Coordinator Elsa Johnson by phone (415) 947-3552, email (johnson.elsa@epa.gov) or mail (75 Hawthorne Street, SFD 6-2, San Francisco, CA 94105). Community members should also feel free to contact the NNEPA Superfund Program's Remedial Project Manager Tennille Begay by phone at (928) 871-6859.





Table describing information-sharing tools between EPA and the community.

EPA has shared the following materials with community members:

Health Factsheets

EPA worked with the Agency for Toxic Substances and Disease Registry (ATSDR) and other partner agencies to create a series of factsheets on uranium and radiation in the Navajo Nation. These factsheets discuss uranium and radiation basics, the health effects of uranium and radiation, and how to reduce contact with uranium and radiation.

Agencies to Contact with Questions Factsheet

EPA worked with partner agencies to create a factsheet to help community members determine which agency to contact for questions related to uranium or radiation on the Navajo Nation.

Site-specific Factsheets

EPA created factsheets for the AUMs in the District 9 Grazing Area, and all mines in the Northern AUM Region. The factsheets include background information, the status of funded

mines, mine site locations, upcoming site activities, and summaries of completed work.

These materials are available on the EPA webpages listed on the following page. These materials are also housed in the local information library at the Tolikan Chapter House. Community members can also request copies by contacting the Tse Tah Community Liaison at the Tolikan Chapter House or EPA Community Involvement Coordinator Elsa Johnson.

EPA Website

EPA will provide information and important documents on this website: https://www.epa.gov/navajo-nation-uranium

Information Library

Several interviewees noted that information should be made available locally for all community members.

As a part of the Superfund process, EPA is required to maintain a set of documents and information locally, where the public can easily access printed or digital copies. This is called the "Information Library." Information libraries contain copies of technical or planning documents, factsheets, results of previous meetings, and other similar types of information.

EPA set up an information library for the area at the location listed below:

Tolikan Chapter House

P.O. Box 105 Teec Nos Pos, Arizona 86514 (928) 429-0977

Door-to-Door Outreach

Many community members and local officials requested that EPA share information with families that live or have grazing permits at or near mines where work will take place. For residents who are unable to attend community meetings, EPA can share information and discuss concerns through door-to-door outreach. EPA will coordinate with local officials to contact grazing permit holders, homesite leaseholders, and homebound residents near these mine areas. Interested individuals can contact EPA's Community Involvement Coordinator to request an in-person meeting with EPA and NNEPA.

Newspaper and Radio Communication

EPA will use the following media channels for outreach:

Newspaper Communication

Navajo Times Farmington Daily Times Gallup Independent

Radio Communication

KTNN 660 AM: The Voice of the Navajo Nation KNDN 960 AM Farmington

Uranium Awareness Outreach Campaign

EPA works with ATSDR to increase awareness among Navajo people about uranium issues on the Navajo Nation. EPA, the Navajo Nation, and others developed a series of posters for ten geographic regions of the Navajo Nation. These posters feature a map showing locations of AUMs, contaminated water sources, regulated watering points, and other landmarks. The posters also include information about warning signs, reducing contact with uranium, and maintaining good health. Some of these materials were provided to area residents during CIP interviews.

The Indian Health Service (IHS) and the Navajo Department of Health Community Health Representatives (CHRs) distributed these posters to IHS Health Clinics and chapters across the Navajo Nation. To prepare for this outreach, EPA, ATSDR, and IHS trained the CHRs on the information provided in the posters. EPA will continue to distribute the posters during future meetings and by request. EPA will also continue to coordinate with ATSDR, IHS, and the CHRs on uranium awareness outreach. RECA and the Navajo Uranium Mine Workers Office of Compensation programs were established to address compensation for former mine workers and downwinders. EPA invites these organizations to meetings but does not provide uranium worker compensation. See Resource List on page 38 for contact information.

Presentations

Many interviewees suggested that EPA present information about local uranium issues at the chapter houses. Many interviewees recommended that EPA continue to host informational meetings, especially when more time is needed for deep engagement with community members. Examples for these types of meetings include discussions about signs and fences, investigation findings and cleanup options, settlement activities, or specific community concerns that need to be discussed in depth.

In January 2020, EPA held a water informational meeting with the participation of many organizations, including the Navajo Superfund Program, Navajo Department of Water Resources (NDWR), Navajo Tribal Utility Authority (NTUA), IHS, Navajo Public Water System Supervision Program, U.S. Natural Resource Conservation Service, and Colorado State University. Also, between October 2017 and 2019, EPA held two informational meetings. The Phase 1 Trustee held a meeting in October 2018 to inform the community about the results of the Removal Site Evaluations at four mines. The Diné Uranium Remediation Advisory Commission (DURAC) held a regional meeting at the Tolikan Chapter House in November 2018.

Depending on the topics to be discussed, EPA will use the following formats for these gatherings:

Informational Meetings - Aside from updates at local planning meetings and chapter meetings, the communities favor all-day informational meetings hosted by EPA's Community Involvement Coordinator that include presentations about work at the mines, EPA and NNEPA updates, poster sessions, and time for community members to ask questions and share feedback. EPA and NNEPA have previously hosted such meetings, including other organizations conducting work in the community, and representatives of IHS, NNEPA, NTUA, NDWR, and the Navajo Department of Health. Community members may request additional informational meetings from the EPA Community Involvement Coordinator.

Small Venue Meetings and Focus Groups -

Smaller, more informal gatherings focused on a specific geographic region, interested group, or extended family, that provides opportunities for community members to share their thoughts and concerns with EPA and NNEPA representatives.

Workshops and Facilitated Discussions -

Facilitated meetings designed to answer specific questions or address specific community concerns.



🌃 Red Mesa with the Carrizo Mountains in the background.

EPA will strive to send out meeting notices at least one month before any gatherings via radio, print, or chapter meeting announcements, and will contact community partners and other outlets as appropriate. Interviewees recommended scheduling meetings on weekdays in the middle of the month, both during the day and in the evening. Mondays were identified as a particularly good option for meetings.

Typically, EPA staff will make presentations at chapter houses and District 9 Grazing meetings when major work is planned in an area or to increase awareness about upcoming EPA activities. EPA will reach out to local officials and coordinate presentations with the local community at chapter houses, community association meetings, and other events. Organizations interested in a presentation should contact the EPA Community Involvement Coordinator Elsa Johnson.



Community Liaison

In response to feedback from the community, EPA funded a community liaison position, hired by a contractor, to ensure that the community is informed about this work, and to encourage maximum community participation in the cleanup process. The Tse Tah Community Liaison is familiar with the land, culture, language, and issues surrounding AUMs.

Community members can discuss concerns with EPA whenever a representative is in the area, or contact the EPA Community Involvement Coordinator by phone, email or mail at any time.

Key Contacts

U.S. Environmental Protection Agency Region 9

Kenyon Larsen

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Working with Navajo Nation Tribal Government

The Navajo Nation is a federally-recognized tribe with its own governmental system. EPA policy is to consult on a government-to-government basis with federally-recognized tribal governments when EPA actions and decisions may affect tribal interests.

EPA interacts with the Navajo Nation government on several levels as a part of AUM assessment and cleanup on the Navajo Nation. EPA consults directly with the Navajo Nation Office of the President and Vice President and the Navajo Nation Council for significant developments, consistent with EPA's tribal policies and guidance. Examples of formal consultation include major decisions and plans for addressing uranium contamination on the Navajo Nation. EPA collaborates with NNEPA's Superfund Program and the Navajo Nation Department of Justice on all AUM assessment and cleanup activities. EPA also partners with Navajo AML and Diné College on AUM related work. Finally, EPA communicates periodically with officials such as local Navajo Nation Council Delegates and chapter officials at key times during the Superfund process.



The Ten-Year Plan is available on EPA's website:

www.epa.gov/navajo-nationuranium-cleanup/abandonedmines-cleanup-federal-plans

Coordination with Other Agencies and Organizations

The interviewees indicated the need for better coordination among organizations working on uranium issues in the area. Community members and local officials are often unsure of the missions of different organizations and find it difficult to stay updated on progress and events hosted by the various groups.

As part of the Ten-Year Plan (2020-2029) to address the legacy of uranium contamination on the Navajo Nation, federal agencies participate in a community outreach network to coordinate federal efforts across the Navajo Nation.

In addition, EPA is working to strengthen ties with other federal, tribal, and community organizations in the District 9 Grazing Area. EPA will continue to provide information to community members about the roles of different organizations and events hosted by various groups in the area.

EPA will continue to strengthen relationships with:

- Diné Uranium Remediation Advisory Commission
- Navajo Nation Environmental Protection Agency
- Navajo Nation Superfund Program
- Navajo AML
- IHS Radiation Exposure Screening and Education Program

- Navajo Birth Cohort Study staff, especially the Clinical Cohort Liaisons and Community Health Environmental Research Staff
- Navajo Department of Health Community Health Representatives
- Navajo Nation Heritage and Historic Preservation Department
- Navajo Nation Department of Fish and Wildlife
- Federal Ten-Year Plan partners, including the U.S. Bureau of Indian Affairs, IHS, ATSDR, the U.S. Centers for Disease Control and Prevention, the U.S. Nuclear Regulatory Commission, and the U.S. Department of Energy
- Research universities, including Colorado State University, University of New Mexico, and Northern Arizona University
- Diné College and Navajo Technical University
- Community Land Use Planning Committees
- Chapter officials, local and agency grazing officials, and other elected representatives
- Others as suggested by community members and local officials



Phase 1 Trust contractor sharing results of the detailed investigations of Tse Tah mines at the Tolikan Chapter, October 2018.

Summary

EPA interviewed community members, local officials, and other stakeholders from November 2017 through March 2018. EPA also received input from the District 9 Grazing Committee, chapter officials, and community members. EPA used information from these interviews and meetings to learn about community concerns and prepare this CIP. EPA would like to thank interviewees and the communities for their time, patience, and willingness to share their stories and concerns.

EPA recognizes that input and feedback from community members are crucial to the success of uranium cleanup on the Navajo Nation.
EPA will continue to work closely with community members and elected officials in the cleanup process, as outlined in this CIP.
Additionally, community members are always welcome to provide input by contacting EPA's Community Involvement Coordinator.

APPENDICES

FUNDING TO BEGIN THE CLEANUP PROCESS AT NAVAJO AUMS

As of 2021, funds are available to begin work at 230 AUMs on the Navajo Nation, including 52 mines in the District 9 Grazing Area. The following three settlements fund uranium mine assessments within the District 9 Grazing Area: Cyprus Amax, Environmental Response Trust (Phase 1 and 2), and Tronox.

CYPRUS AMAX AND WESTERN NUCLEAR SETTLEMENT AGREEMENT

In January 2017, the United States and the Navajo Nation entered into a settlement agreement with Cyprus Amax and Western Nuclear, two

companies owned by Freeport-McMoRan, for the cleanup of 94 AUMs across the Navajo Nation. Under the settlement, valued at over \$600 million, Cyprus Amax and Western Nuclear will perform the work and the United States will contribute about half of the costs. Forty of these mines are in the District 9 Grazing Area.

Cyprus Amax and Western Nuclear agreed to perform Removal Site Evaluations, Engineering Evaluations and Cost Analyses, and cleanups at the 94 mines. Removal Site Evaluation reports are currently being prepared for about 30 mines, including 18 mines in the District 9 Grazing Area.

ENVIRONMENTAL RESPONSE TRUST (PHASE 1 SETTLEMENT AND PHASE 2 SETTLEMENT)

In 2015, the Navajo Nation settled a potential lawsuit against the United States for uranium contamination at 16 "priority" AUMs across Navajo lands for which no viable responsible parties have been identified. These sites were selected because they have elevated readings of radiation and are located near homes or water sources.

The settlement established a \$13.2 million fund to be administered through the Navajo Nation AUMs Environmental Response Trust - Phase 1 to pay for the investigations. Results from investigating the 16 sites provide information for

Recent Accomplishments across Navajo Nation (2008 to 2020)

- A total of 11 settlements with private companies
- Assessment field work completed at 111 mines
- Interim cleanup work at 29 mines and a transfer station
- Over 3,800 families received access to safe drinking water, in partnership with IHS
- Over 50 contaminated structures have been removed, with over 1,200 homes tested, to address potential residential exposures

later cleanup decisions. Sadie Hoskie served as the Phase 1 Trustee and completed assessments of the 16 priority sites, four of which are in the District 9 Grazing Area. On October 23, 2018, the Phase 1 Trustee Sadie Hoskie presented the assessment results to community members at the Tolikan Chapter House for the four mines in the District 9 Grazing Area.

In October 2016, the Navajo Nation and the United States reached another settlement for these 16 sites. The agreement funds the costs

of engineering evaluations, cost analyses and cleanups at the 16 priority mines, as needed. It also funds the assessments at another 30 mines and two water studies. This work will include assessing four additional mines in the Tse Tah area and conducting a water study at the Saytah/George Simpson No. 1 Incline mine. The work will be performed by the Phase 2 Trustee Derrith Watchman-Moore, with oversight by EPA and NNEPA. In addition, the settlement provides Navajo Nation with funds for preassessment of natural resources damages.

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USEPA hosted a Water Informational meeting with representative from NNEPA, NTUA, Department of Water Resources, IHS, U.S. Natural Resource Conservation Service, Colorado State University and others in January 2020 at Red Mesa Chapter.

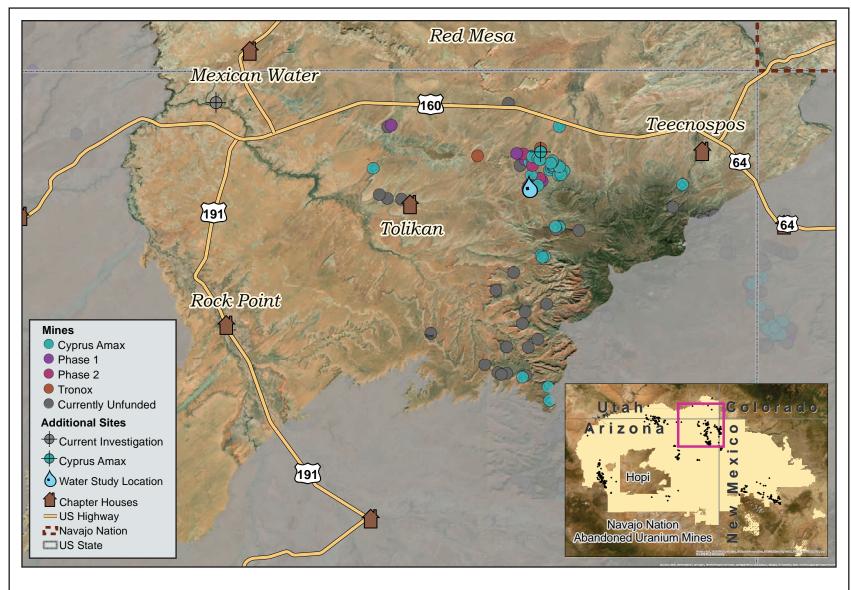
TRONOX SETTLEMENT

From the late 1940s to the 1980s, Kerr-McGee Corporation mined more than 7 million tons of uranium ore on or near the Navajo Nation. These mines are located in the Cove, Lukachukai, Round Rock, Teecnospos, Tolikan, Coyote Canyon, and Casamero Lake Chapters. In 2019, detailed investigations were completed at the two Tronox mines in the District 9 Grazing Area – the Brodie 1 mine in Tolikan, and the Block K mine in Teecnospos.

The 2015 Tronox Settlement provides almost \$1 billion to clean up more than 50 mines, including 34 AUMs operated by Kerr-McGee Corporation on the Navajo Nation. It is known as the Tronox Settlement because the case arose from the Tronox bankruptcy. In the bankruptcy, the Navajo Nation, the United States and other parties sued to recover funds from Kerr-McGee Corporation and Anadarko Petroleum Corporation for environmental concerns and other liabilities beyond Tronox's financial capability.



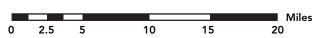
Perry Charley, a Navajo Scientist with the Dine College Uranium Education Program, provides historical information uranium mine impacts in the Tse Tah area during a tour with the Dine Uranium Remediation Advisory Commission.





Navajo Nation District 9 Grazing Area

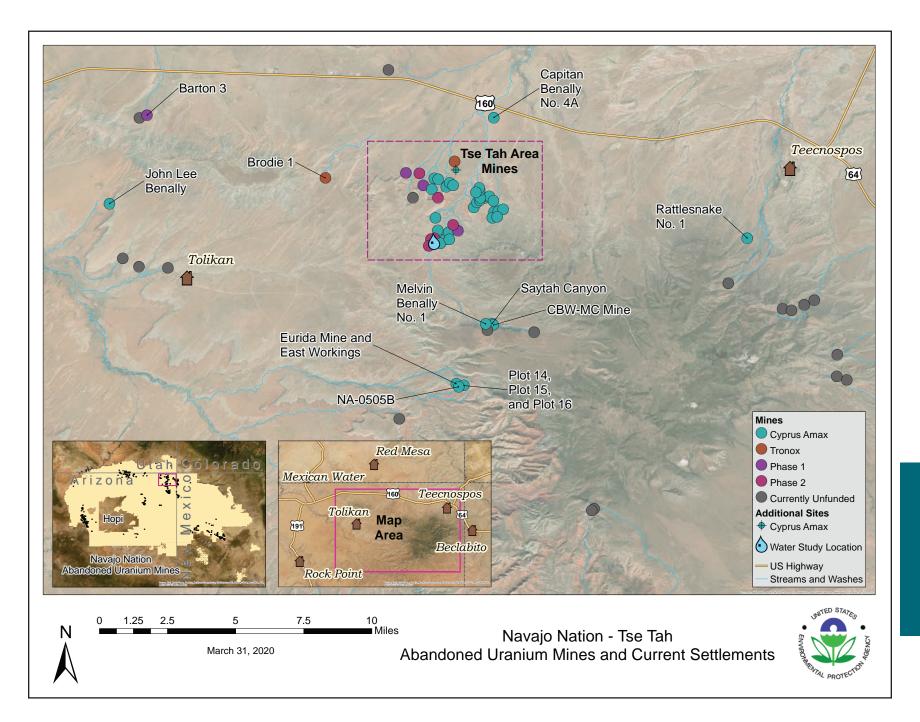
Abandoned Uranium Mines and Current Settlements

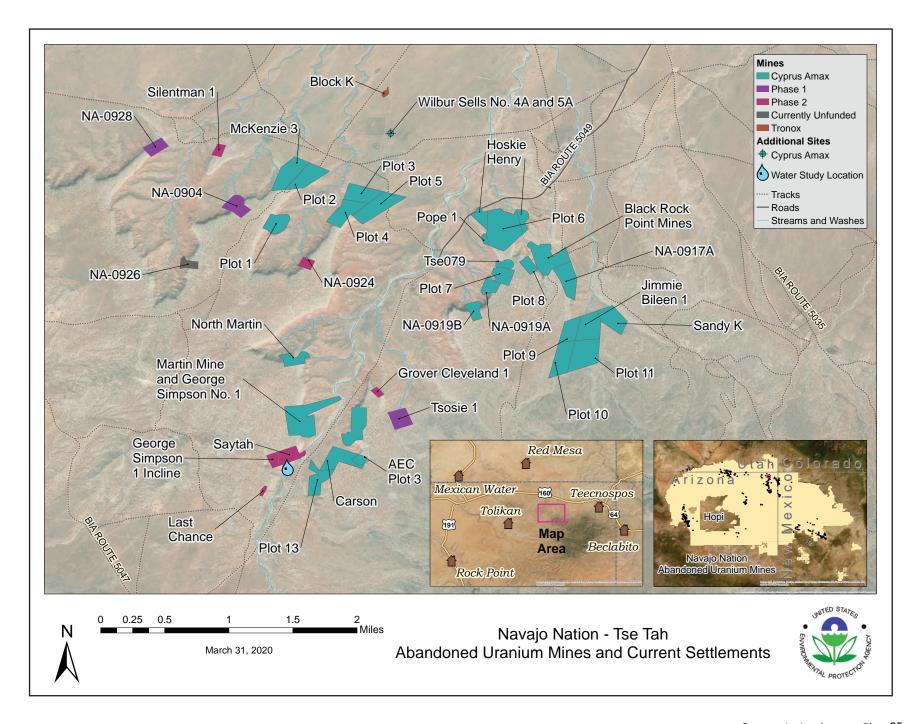


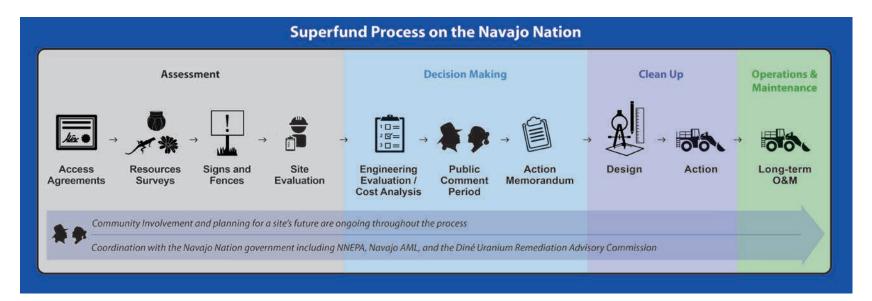




Wild burros and horses near the foothills of the Carrizo Mountains.







EPA'S PROCESS ON THE NAVAJO NATION

EPA is addressing AUMs on the Navajo Nation in partnership with NNEPA's Superfund Program. This section provides an outline of the Superfund process on the Navajo Nation. This outline specifically covers cleanup actions requiring more than six months' planning time; these are the most common actions on the Navajo Nation. A similar process is used for cleanup actions requiring less planning time.

EPA enters into legal agreements with responsible companies to fund the mine assessments and cleanup. EPA, in coordination with NNEPA, oversees work completed by responsible companies. EPA, the Trustee, or the responsible company work with the Navajo Nation, lease holders, and grazing permit holders to obtain access to the site before beginning work. After gaining access approvals,

EPA or the responsible company completes a cultural resources survey, and EPA must consult with the Navajo Nation Heritage and Historic Preservation Department Director on cultural resources that might be affected by assessment or cleanup work. Additionally, a biological survey may be needed, and EPA may need to consult with the Navajo Nation Department of Fish and Wildlife and possibly the U.S. Fish and Wildlife Service on potential impacts to threatened or endangered species.

After getting the necessary approvals, EPA, the Trustee, or the responsible company conducts a detailed assessment of the contamination at each mine. The assessment is outlined in a document called a Removal Site Evaluation (RSE). Next, a risk assessment is done, and an evaluation of cleanup options takes place. Evaluation findings are summarized in an Engineering Evaluation/Cost Analysis (EE/CA). Also, EPA, the Trustee, or the responsible party may place signs and/

or fences at mines, depending on community input, as well as the mine's location and level of radiation.

EPA uses the information in the EE/CA, along with community input EPA has been receiving throughout the assessment process, to identify cleanup options. EPA presents the EE/CA and cleanup options to the community during a public meeting, which is followed by a public comment period.

EPA uses this additional feedback from the community to select a cleanup option and issues an Action Memorandum on the decision. The Action Memorandum includes a response to the public comments received at the public meeting or submitted in writing during the comment period. At this point, EPA or the responsible company can begin the design and construction of cleanup on the mine site.

GLOSSARY

Abandoned Uranium Mine (AUM) Claim -

An AUM claim is generally associated with a patented or unpatented mining claim or a lease of federal, state, tribal, or private lands. A claim may represent a single feature such as a surface or underground excavation, or it may include an area containing a complex of multiple interrelated excavations. As a result, one claim may represent multiple "mines" listed in other databases.

Action Memorandum – EPA's primary decision document that determines the need for a removal action, authorizes the removal action, identifies the action and cleanup levels (if applicable), and explains the rationale for the removal response.

Contamination – The presence of microorganisms, chemicals, toxic substances, or wastes, at levels that make water, air, or soil unfit for intended uses.

Cyprus Amax Minerals Company - One of the two companies owned by Freeport-McMoRan performing cleanup work under the terms of the January 2017 settlement agreement for the cleanup of 94 AUMs on the Navajo Nation.

Engineering Evaluation/Cost Analysis (EE/CA) -

An analysis of cleanup alternatives for removal actions requiring more than six months' planning time. EPA selects one of the alternatives outlined in the EE/CA in the Action Memorandum.

Freeport-McMoRan – A mining company based in Phoenix, Arizona. It owns the Cyprus Amax and Western Nuclear companies that are responsible for 94 mines across the Navajo Nation.

Groundwater – The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because groundwater is a source of drinking water, there is growing concern over contamination.

Information Library – A record storage area at or near a Superfund site that contains reports, documents, and factsheets pertaining to the site.

Radiation – Energy that travels in the form of waves or high-speed particles. One way that radiation can be released to the environment is during the decay of radioactive elements such as uranium. Harmful levels of radiation may be found at abandoned uranium mines. Other sources of radiation are generally not harmful, including radiation from sunlight, x-ray machines, and microwave ovens.

Removal Action – Actions that address releases of hazardous substances.

U.S. Superfund – The program operated under the legislative authority of CERCLA and the Superfund Amendments and Reauthorization Act that funds and carries out EPA's emergency and long-term removal and remedial activities.

Tronox – The name of the successor company to the Kerr-McGee Corporation, which mined more than 7 million tons of uranium ore on or near the Navajo Nation from the 1940s to the 1980s.

Trust/Trustee - The Navajo Nation and United States governments created a two-phase Trust to assess and cleanup 16 priority uranium mines across the Navajo Nation, assess 30 additional mines, and conduct two water studies at mines. Each Trust is a result of claims made by the Navajo Nation against the United States government for contamination from uranium mining during World War II and later. Mines were assessed through the Phase 1 Trust. Funding for cleanup will be available via the Phase 2 Trustee. Sadie Hoskie was the Trustee for the Phase 1 Trust, Derrith Watchman-Moore is the Trustee for the Phase 2 Trust.

Uranium – A heavy, naturally radioactive, metallic element used to produce nuclear power plant fuel, nuclear weapons, and nuclear medicine.

Western Nuclear – One of the two companies owned by Freeport-McMoRan performing cleanup work under the terms of the January 2017 settlement agreement for the cleanup of 94 AUMs on the Navajo Nation.

2021 RESOURCE LIST

Mines and Structures		Health		Educational Programs	
Cleanup of chemical and radiological hazards at AUMs	U.S. Environmental Protection Agency Region 9 Superfund Program, San Francisco, California (800) 231-3075 NNEPA Nasajo Superfund Program,	Preventive health information, uranium awareness posters	Navajo Department of Health (NDOH), Community Health Representative/ Outreach Program, Window Rock, Arizona (928) 871-6875	Environmental Risk Assessment Ecological Risk Assessment Traditional Ecological Knowledge	Diné Environmental Institute Research and Outreach Diné College, Shiprock Campus, Shiprock, New Mexico (505) 368-3514
	Window Rock, Arizona (800) 314-1846		IHS, Northern Navajo Medical Center, Community Uranium Exposure - Journey	Water	
Contaminated structures	NNEPA Navajo Superfund Program, Window Rock, Arizona - Contaminated Structures Program (800) 314-1846	3, 3	to Healing, Shiprock, New Mexico (505) 368-7391 (505) 368-7402	Water hauling practices from safe drinking water sources	NNEPA, Public Water Systems Supervision Program, Window Rock, Arizona (928) 871-7755
Address physical hazards to abandoned mine lands, i.e., copper, sand, and gravel pits	Navajo AML, Window Rock, Arizona (928) 871-6982	Provides local oncology care and provides assistance to coordinate care to patients, Navajo medical interpreters available	Tuba City Regional Health Care Corporation, Specialty Care Center, Tuba City, Arizona (928) 283-2402	Locations of regulated water points	Navajo Tribal Utility Authority (NTUA), Fort Defiance, Arizona (800) 528-5011
Radon in your home, radon test kits	NNEPA Radon Program, Window Rock, Arizona (928) 871-6790	Navajo Birth Cohort Study	University of New Mexico, Albequerque, New Mexico ATSDR Division of Toxicology and Human Health Sciences, Atlanta, Georgia (877) 545-6775 (770) 488-3684	Water quality of NTUA piped water in your home, or from an NTUA public water system	NTUA, Fort Defiance, Arizona (928) 729-6207 Ask for "consumer confidence report"
Uranium Mill Sites				Surface water and groundwater quality	NNEPA, Water Quality Program (505) 368-1037
Disposal sites - long-term surveillance and maintenance	DOE, Office of Legacy Managment (LM), Grand Junction, Colorado	Downwinders radiation exposure compensation claim assistance	wnwinders radiation exposure IHS, Northern Navajo Medical Center, npensation claim assistance Radiation Exposure Screening and Education Program (RESEP), Shiprock, New Mexico NDOH, Office of Navajo Uranium Workers, Shiprock, New Mexico		
(LTS&M)	(970) 248-6621 Mexican Hat				Navajo Department of Water Resources, Technical, Construction, and Operations
Former processing site - LTS&M	DOE LM, Grand Junction, Colorado (970) 248-6621 Monument Valley	(505) 368-7054 (505) 368-1260		Locations of unregulated sources, livestock wells, windmills, earthen	Branch (928) 729-4032
Technical assistance, community outreach	Navajo AML Uranium Mill Tailings Remedial Action Department, Window Rock, Arizona (928) 871-6982	No-cost medical screening exams to eligible downwinders, downwinders radiation exposure compensation claim assistance	North Country Healthcare, RESEP, Flagstaff, Arizona (928) 522-9427	dams	
outreacn				Uranium Policy Advisory	y
Disposal sites - general licensing and oversight	U.S. Nuclear Regulatory Commission (NRC), Washington, DC (301) 415-6749	Uranium workers radiation exposure compensation claim	IHS, Northern Navajo Medical Center, RESEP, Shiprock, New Mexico NDOH, Office of Navajo Uranium Workers, Shiprock, New Mexico (505) 368-7054	Study the impacts of uranium mining and uranium processing on the Navajo Nation, provide recommendations to the Navajo Nation President/vice President and to the Navajo Nation Council	Diné Uranium Remediation Advisory Commission (DURAC), Window Rock, Arizona (928) 871-7186
Former processing site - oversight	NRC, Washington, DC (301) 415-6749		(505) 368-1260	for policies, laws, and regulations to address those impacts	

ACRONYMS AND ABBREVIATIONS

AML Abandoned Mine Lands

Agency for Toxic Substances and ATSDR

Disease Registry

Abandoned Uranium Mine **AUM CERCLA** Comprehensive Environmental

Response, Compensation, and Liability

Act

CHR Community Health Representative Community Involvement Plan CIP

Diné Uranium Remediation Advisory **DURAC**

Commission

Engineering Evaluation/Cost Analysis EE/CA

United States Environmental **EPA**

Protection Agency

Navajo Area Indian Health Service **IHS** Office of Legacy Management LM Long term surveillance and LTS&M

maintenance

NDOH Navajo Department of Health

NDWR Navajo Department of Water Resources

Navajo Nation Environmental **NNEPA**

Protection Agency

United States Nuclear Regulatory NRC

Commission

NNEPA Superfund Program **NSP** Navajo Tribal Utility Authority NTUA

Radiation Exposure Compensation Act RECA

Radiation Exposure and Screening RESEP

Education Program

Removal Site Evaluation **RSE**

TASC Technical Assistance Services for

Communities



🜃 Thunderstorm over Carrizo Mountain.



 $ilde{f wo}$ USEPA staff explains the Superfund Process at a Mexican Water Chapter meeting.

We believe all life form on Mother Earth is tied together in prayer. We pray for one another; Diné, animals, insects, plants, water, sky, the changing seasons and the mountains. This edifies reverence.

-- Community Member March 2018 Interview