



The 5-Year Plan, along with this and past progress reports, can be found on the US EPA Region 9 website or by contacting the US EPA directly.

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# Health and Environmental Impacts of Uranium Contamination in the Navajo Nation

## EPA Progress in Implementing a 5-Year Cleanup Plan



U.S. Environmental Protection Agency, Department of Energy, Bureau of Indian Affairs, Indian Health Service, and Nuclear Regulatory Commission have worked together to develop a 5-year plan to address the health and environmental impacts of uranium contamination in the Navajo Nation.

The EPA, in consultation with the Navajo Nation, has developed a plan to specifically address uranium contamination at abandoned uranium mines, contaminated structures and water sources.

In the first year of the plan, EPA is addressing the most urgent risks, such as residents living in potentially-contaminated structures and those drinking from contaminated water sources.



September 2008 Progress Report



# Navajo Uranium Contamination Stakeholder Workshop

On August 13, 2008, the US EPA hosted a stakeholder workshop in Gallup, NM to discuss uranium contamination issues and implementation of the Five-Year Plan. The workshop was attended by approximately 150 people, composed of representatives from 13 federal organizations, Navajo Nation, Hopi Tribe, states of New Mexico and Arizona, two universities, non-governmental organizations, and private citizens. The keynote address was delivered by Navajo Nation President Joe Shirley and Chairman of the Navajo Resources Committee, George Arthur. Following the keynote address, the participating agencies presented the Five-Year Plan, and six sessions with panels discussing plan implementation were held throughout the rest of the day. The panels addressed abandoned uranium mines, Navajo water sources, Navajo contaminated structures, inactive uranium mill (UMTRCA) sites and mining leases, the Tuba City open dump, and health and risk. A lunch time presentation on health and risk was delivered by a partnering NGO – the DiNEH Project. The workshop concluded with a report-out session where key issues raised during the panels were shared with the general audience.



President Joe Shirley



## NEXT STEPS

- Workshop presentations and materials will be made available online for workshop participants and key stakeholders.
- Ideas and suggestions for improving implementation of the Five-Year Plan have been compiled and the appropriate agencies will follow up.

# Abandoned Uranium Mines (AUMs)

## Background

Mine operators extracted nearly four million tons of uranium ore from 1944 to 1986 under lease agreements with the Navajo Nation. As a result, uranium mining has left the Navajo Nation with a legacy of 520 abandoned uranium mines (AUMs).



## Accomplishments

- Developed comprehensive database and atlas
- Completed desktop risk ranking for all 520 mines
- Coordinated with Navajo Nation to prioritize by region the mine sites in need of screening and site visits

## Next Steps

- Complete detailed assessments (PAs) of 4 AUM sites and completed site reassessment of the King Tutt Mesa site
- Conduct screening-level review and site visits of 80 AUM sites in Eastern region by end of Spring 2009
- Goal is to conduct screening level review and site visits of remaining AUM sites by end of 2012
- Conduct more detailed assessments of approximately 50 of the screened sites by end of 2012

# Northeast Church Rock Mine (NECR)

## Background

NECR is the highest priority on the AUM ranking list. The mine adjoins the United Nuclear Corporation uranium mill site, a National Priorities List Site. The mine was closed and mine tailings were removed from the surface; however, significant radium contamination remains posing a public health threat.

## Accomplishments

- Completed a Removal Site Evaluation (identifying a large volume of radium contaminated soils)
- Surveyed 10 homesites and residences
- Conducted a time-critical removal at 4 residences
  - 6,500 cubic yards of contaminated soil were removed (as well as a small portion of concrete from a hogan floor)
- Developed an Engineering Evaluation and Cost Analysis (EE/CA) which proposes potential remedies for the mine site

## Next Steps

- Complete the Engineering Evaluation and Cost Analysis
- Select a remedy
- Issue a cleanup order to the responsible party

# Contaminated Water Sources

## Background

US EPA is working with the Navajo Nation, federal agencies, and the DiNEH Project to ensure that Navajo families do not drink water contaminated with uranium. Navajo Nation policy prohibits the use of unregulated sources for human consumption and recommends the use of regulated water sources which are regularly tested and meet drinking water standards. Nevertheless, some residents continue to use unregulated sources due to the lack of suitable water sources in the more remote regions of the Navajo Nation. The use of unregulated water sources represents the greatest public health risk associated with drinking water for the Navajo Nation.



## Accomplishments

- EPA sampled 50 and Centers for Disease Control sampled 199 unregulated water sources. 22 sources exceeded drinking water standards for radionuclides. Most are located within 10 miles of a safe alternative supply.
- EPA, Navajo Nation EPA, and partner organizations issued a health advisory and are conducting extensive outreach to residents.
- Navajo Nation EPA hired a circuit rider to provide technical assistance to residents using unregulated water sources.
- EPA and IHS identified the regions of Black Falls and Dennehotso where safe water is not available within 10 miles of a contaminated source.
- IHS is completing an EPA-supported plumbing and sewer project near Black Falls area residents impacted by four contaminated wells.

## Next Steps

- Work with partner agencies to continue outreach to chapters, including: posting signs in chapter houses, airing radio announcements in English and Navajo languages, and publishing an insert in Navajo Times with locations of contaminated wells and contact information
- Identify additional high risk wells for sampling
- Assess abandoned mines that may be contributing to groundwater contamination
- Complete construction of the water line extension near Black Falls in the vicinity of 4 wells contaminated with uranium
- Evaluate the feasibility of a 50-mile Dennehotso new water system project which will serve 100 homes in the vicinity of 2 wells contaminated with uranium
- Identify short and longer-term funding needs for safe water supplies



# Contaminated Structures

## Background

US EPA is concerned that structures, including homes, hogans and storage buildings may have been constructed with contaminated materials from nearby mines. Building material sources may include rocks from the mine and aggregate from mine spoils, which may have been used in concrete mixing. Structures may also be contaminated by the presence of radiological materials in outdoor soils and dust that may have been brought into the homes on shoes and clothing.

## Accomplishments

- Spring 2008 - Completed field assessments of over 113 structures and surrounding soils
- Determined the need to remediate 26 contaminated structures and 12 yards as a precaution
- Negotiated access agreements with residents of Cove and Red Valley Chapters
- Remediated Cove Chapter homesite
- Initiated remediation of Red Valley homesites



## Next Steps

- Finalize remediation in Red Valley Chapter
- Finalize replacement agreements with residents of Cove and Red Valley Chapters
- Finalize access agreements and conduct structure remediation in Teec Nos Pos and Cane Valley Area Chapters
- Conduct outreach to identify other potentially contaminated structures