

**WRITTEN STATEMENT OF
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PRESIDENT OF THE NAVAJO NATION
ON
*The Toxic Legacy of the Mining Law of 1872***

FOR THE OVERSIGHT HEARING ON JULY 27, 2021

**PREPARED FOR THE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
OF THE HOUSE COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES**

August 5, 2021

Dear Chairman Alan Lowenthal, Ranking Member Pete Stauber, and Members of the Subcommittee:

We appreciate the opportunity to provide written testimony regarding the toxic legacy of the Mining Law of 1872. For the Navajo Nation, the most tragic result of the 1872 Mining Law has been the legacy of uranium mining on the Navajo Nation. To prevent further devastation to the health and welfare of the Navajo Nation, to ensure respect for the sacredness of our land and waters, and to build a sustainable and environmentally just future for the next generation, the Navajo Nation supports reforms to the Mining Law of 1872 and the establishment of an Abandoned Mine Land Fund.

I. The History of Uranium Mining on the Navajo Nation

The unique geology of the American Southwest makes the Navajo Nation rich in uranium, a radioactive ore in high demand after the development of atomic power and weapons at the close of World War II. According to the U.S. Environmental Protection Agency (U.S. EPA), approximately thirty million tons of uranium ore were extracted through private mining operations on the Navajo Nation from 1944 to 1986.¹ The federal government, through the Atomic Energy Commission, was the sole purchaser of uranium until 1971, and indeed announced in 1948 that it would guarantee a price for and purchase all uranium ore that was mined in the United States.² This announcement initiated a uranium mining “boom” on the Colorado Plateau which peaked in 1955 and 1956.³

Despite being paid minimum wage or less, Navajo men were drawn to work in the mines and

¹ U.S. EPA, Navajo Nation: Cleaning Up Abandoned Uranium Mines, available at <https://www.epa.gov/navajonation-uranium-cleanup/abandoned-mines-cleanup> (last accessed July 28, 2021).

² Burgge, D. and Goble, R., *The History of Uranium Mining and the Navajo People*, 92 AM. J. PUBLIC HEALTH 1410 (2002), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222290/#r14> (last accessed July 28, 2021).

³ *Id.*

processing sites because they were often near their homes and offered the only jobs available to them. According to two researchers in the field of public health:

When uranium mining began, the predominant modes of transportation for Navajo People were by horse and wagon or by foot on the reservation, the Navajo language had no word for radiation, few Navajo People spoke English, and few had formal education. Thus, the Navajo population was isolated from the general flow of knowledge about radiation and its hazards by geography, language, and literacy level. . . . Virtually all of the Navajo miners report that they were not educated about the hazards of uranium mining and were not provided with protective equipment or ventilation.⁴

Ironically, for many Navajo families, uranium mining represented their first contact with the broader U.S. wage economy.

Beginning in 1950, workers with the U.S. Public Health Service followed uranium miners in the Southwest, both Navajo and white, to measure their exposures and assess their specific cancer risks. But to gain access to these men, the researchers made a bargain with the mining companies: they would not inform the miners of the potential health hazards of their work.⁵ Nor were their wives told that washing their husbands' work clothes could spread radionuclides to the rest of the family's laundry.

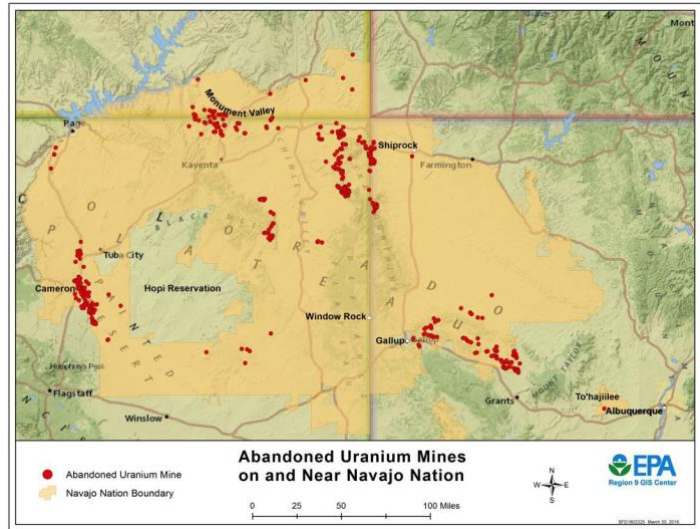
After the Cold War ended and the federal government no longer needed uranium to produce nuclear weapons, many of the mines on Navajo lands were simply abandoned – neither covered, nor sealed, nor remediated. The federal government decommissioned the uranium processing sites and capped the radioactive mill tailings *in situ* with clay and rock. The U.S. EPA counts 523 abandoned uranium mines within the Navajo Nation which are associated with over one thousand abandoned shafts.⁶ Countless other mine features – pits, trenches, adits, vent holes – dot the landscape in the shadow of the four mountains so central to Navajo identity and beliefs.

⁴ *Id.*

⁵ *Once Upon a Mine: The Legacy of Uranium on the Navajo Nation*, 122 ENVIRONMENTAL HEALTH PERSPECTIVES A45, A47 (2014), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.122-A44>.

⁶ U.S. EPA Region 9, *Abandoned Uranium Mine Settlements on the Navajo Nation*, November 2020, https://www.epa.gov/sites/default/files/2021-02/documents/navajo_nation_settlement_fact_sheet-2020-11-19.pdf; Brugge, D. and Goble, R., *supra* note 2.

Not only were the Navajo miners themselves sickened by their exposure to toxicity while extracting uranium, but the oral history in many Navajo communities attests to how the miners' families also became exposed by these open and abandoned rifts in Mother Earth even once the active mining had ceased. Some common examples include an individual who as a child played in an abandoned mine or on a tailings pile, a sheep herder who watered his flock in the seep of an unreclaimed open pit mine, or a family who obtained cooking and drinking water from a stream that ran through or near a uranium mine. *Hogans* (traditional Navajo houses) were commonly built from mine wastes, as were roads.



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By late 2020, the U.S. EPA had entered into enforcement agreements and settlements, valued at over \$1.7 billion, with the private mining companies to reduce the highest risks of radiation exposure to the Navajo people. As a result, funds are available to begin the assessment and, in some cases, cleanup process at 230 of the 523 abandoned uranium mines, leaving 293 sites without a plan.⁷ But one-third of the uranium mining companies have shut down or have run out of money,⁸ leaving the remainder of the cleanup for taxpayers to finance unless an abandoned mine fund, paid for by the mining industry, is established.

And there is still more toxic mining legacy on the Navajo Nation. The Department of Energy (DOE) designated four inactive uranium ore processing or disposal sites for remediation under the Uranium Mill Tailings Radiation Control Act of 1978.⁹ In the time since the radioactive materials were placed in engineered disposal cells licensed by the Nuclear Regulatory Commission (NRC), the DOE Office of Legacy Management has taken responsibility for conducting inspections, groundwater monitoring and treatment, and maintenance at these sites. Annual expenditures can vary from site to site. For instance, from 2008 to 2012, DOE expenditures at the Tuba City, Arizona, disposal site were approximately \$2.8 million per year, while expenditures at the Mexican Hat, Utah, disposal site were \$22,000 per year.¹⁰

⁷ U.S. EPA Region 9, *supra* note 6.

⁸ Laurel Morales, *For the Navajo Nation, Uranium Mining's Deadly Legacy Lingers*, NPR WEEKEND EDITION SUNDAY, April 10, 2016, available at <https://www.npr.org/sections/health-shots/2016/04/10/473547227/for-the-navajo-nation-uranium-minings-deadly-legacy-lingers> (last accessed on July 30, 2021).

⁹ See U.S. Department of Energy Legacy Management, Uranium Mill Tailings Radiation Control Act Sites, October 24, 2014, <https://www.energy.gov/sites/prod/files/2014/10/f19/UMTRCA.pdf>. Another site is located immediately adjacent to the Navajo Nation in Church Rock, New Mexico.

¹⁰ Congressional Research Service, Long-Term Federal Management of Uranium Mill Tailings: Background and Issues for Congress, February 22, 2021, at 21, <https://fas.org/sgp/crs/nuke/R45880.pdf>.

Beyond the direct costs of planning and implementing remediation and long-term monitoring activities, it is necessary to consider the cost of coordinating this work across numerous federal agencies, including the U.S. EPA, the Bureau of Indian Affairs, the NRC, DOE, the Indian Health Service, the Agency for Toxic Substance and Disease Registry and the Centers for Disease Control. One five-year plan has ensued after another.¹¹ Even reclamation efforts produce unintended consequences, such as sinkholes and subsidence, poor road conditions and worsening traffic, impacts to air quality, increased noise levels, and visual disturbances. Cultural and historical sites may be damaged and community members' access to them restricted.¹²

II. Impacts to the Environment and to Health on the Navajo Nation

Uranium mines generate overburden, waste rock and low-grade ore. The hazardous constituents of mine waste include, among others, arsenic, cadmium, lead, molybdenum, and selenium, and the radioactive constituents include uranium, thorium, radium, and lead. When exposed to air, the hazardous and radioactive substances inherent to the rock oxidize and are released to the environment through runoff and wind dispersion. Formerly pristine aquifers became contaminated by encountering radioactivity, whether through precipitation leaching through tailing piles or mine shafts penetrating the water table.¹³ Moreover, the acid used to leach uranium ore from its substrate as part of processing was held in mill site tailing cells (ponds), often migrating into the subsurface and contaminating the groundwater.

The largest release of radioactive material in the history of the United States happened immediately adjacent to the formal Navajo Reservation at the United Nuclear Corporation (UNC) Mill Site, which is located approximately seventeen miles northeast of Gallup, New Mexico, within the Eastern Navajo Agency and surrounded by Navajo trust lands and Navajo communities. UNC operated the mill from 1967-1982, receiving about 3.5 million tons of ore from two nearby mines on the Navajo Nation: the Northeast Church Rock Mine and the Kerr-McGee Quivira Mine. On July 16, 1979, the dam holding back the uranium mill tailings disposal pond was breached. Over one thousand tons of radioactive mill waste and 93 million gallons of acidic and radioactive tailings solution flowed into the Puerco River and travelled eighty miles downstream through the Navajo Nation to the community of Sanders, Arizona.¹⁴

¹¹ U.S. EPA, Five Year Plan 2014-2018: Federal Actions to Address Impacts of Uranium Contamination on the Navajo Nation, undated, https://www.epa.gov/sites/default/files/2016-06/documents/navajo_five_year_plan_2014_overview.pdf.

¹² U.S. EPA, *Northeast Church Rock and Kerr-McGee Quivira Mine Sites Community Mine Sites*, 2016, at 8, https://www.epa.gov/sites/default/files/2017-11/documents/cip_northeast_churchrock_kerr-mcgee_quivira.pdf; U.S. NRC, *Draft Environmental Impact Statement for the Disposal of Mine Waste at the United Nuclear Corporation Mill Site in McKinley County, New Mexico*, October 2020, at xix, § 4.12, <https://www.nrc.gov/docs/ML2028/ML20289A621.pdf>.

¹³ Says one public health researcher, who is Navajo, "When they did all the mining, there would be these pools that would fill up. And all of the kids swam in them. And my dad did, too." Quoted in Morales, *supra* note 8.

¹⁴ U.S. EPA, *Mine Sites*, *supra* note 12, at 21-22.

The negative health consequences of this spill are still felt today. Residents in the immediate vicinity and surrounding communities are concerned about future land use and the safety of the air and water around them. They recognize and have expressed to the U.S. EPA the ongoing need for mapping, signage, and education so that tribal members – especially children – can understand and avoid the location of mines and mine wastes close to their homes.¹⁵ And this is only one example of the legacy of uranium mining on the Navajo Nation, which continued for years and represented a tight public-private partnership, of which the effects were kept secret from the very people injured.

Indeed, the health impacts to the Navajo people related to uranium mining are vast, severe, and multi-generational. They include lung cancer, respiratory disease, renal cancer, renal failure, and other chronic renal diseases such as nephritis and kidney tubal tissue injury. Other sicknesses include myeloma, lymphomas, and primary cancer of the thyroid, male or female breast, esophagus, stomach, pharynx, small intestine, pancreas, bile ducts, gall bladder, salivary gland, urinary bladder, brain, colon, ovary, liver, or lung. There is also a growing body of evidence that connects hypertension, heart disease, and autoimmune diseases to uranium exposure.¹⁶

Analyzing mortality data from 2006 to 2009, the Navajo Epidemiology Center concluded that cancer is the second overall leading cause of death among Navajo men, after unintentional injuries, and the leading cause of death by far among Navajo women.¹⁷ Increasing rates of lung cancer in this generally non-smoking population was attributed to occupational exposure while working in the uranium mines.¹⁸ Although the incidence and mortality of the most common cancers (prostate, breast, colorectal) remain lower among Navajos than among non-Hispanic white individuals, Navajos suffer from comparatively high rates of kidney, liver, stomach and gallbladder cancers, which are connected to exposure to uranium and other toxic or radioactive constituents of mine waste.¹⁹ Renal failure is the thirteenth leading cause of death among both genders, followed by hypertensive disease.²⁰

The health legacy of uranium exposure extends to the children of exposed parents. A study of 266

¹⁵ *Id.* at 8-9.

¹⁶ Arnold, Carrie, *Once Upon a Mine: The Legacy of Uranium on the Navajo Nation*, 122 ENV. HEALTH PERSPECTIVES A44-A49 (2014), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3915248/>.

¹⁷ Navajo Epidemiology Center, NAVAJO NATION MORTALITY REPORT, 2006-2009, undated, at 5, 7, <https://www.nec.navajo-nsn.gov/Portals/0/Reports/Vital%20Statistics%20Report%202006%20to%202009%20FINAL.pdf>.

¹⁸ Brugge, D. and Goble, R., *supra* note 2; *see also* Roscoe, R. et al., *Mortality Among Navajo Uranium Miners*, 85 Am. J. of Public Health 535-541 (1995) (further mentioning tuberculosis and other respiratory diseases), [available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1615135/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1615135/) (last accessed August 2, 2021).

¹⁹ Navajo Division of Health and Navajo Epidemiology Center, CANCER AMONG THE NAVAJO, 1994-2004, undated, at 10 (citing the New Mexico Tumor Registry and the Arizona Cancer Registry), <https://www.nec.navajo-nsn.gov/Portals/0/Reports/Navajo%20Cancer%20Rpt%20062610.pdf>.

²⁰ Navajo Epidemiology Center, *surpa* note 17, at 1.

cases and matched controls suggested that children of Navajo women who lived near abandoned uranium sites were 1.83 times more likely to suffer birth defects or even death.³⁰ Some of these defects were thought to be connected to radiation exposure (*e.g.*, chromosomal disorders, single gene mutations) as well as nonrelated defects (*e.g.*, deaths due to obstetrical complications).³¹

In light of the devastation wrought on the Navajo land and people by uranium mining, the Navajo Nation has done its part from a legislative standpoint. In 2005, the Navajo Nation Council passed the Dine Natural Resources Protection Act, which prohibits uranium mining and processing on any site on Navajo Land.²¹ Then, in 2012, the Navajo Nation Council passed the Radioactive and Related Substance Equipment, Vehicles, Persons and Materials Transportation Act, which regulates the transportation of radioactive materials and uranium mining equipment across the Navajo Nation.²² We need the federal government to play its part too, by reforming the Mining Law of 1872.

III. Conclusion

From the time of our emergence as Navajo into our present world, our *Diyin Dine'é* (Navajo Deities) have entrusted us *Diné* people with preserving the pristine quality of the environment within our sacred lands. Consequently, our creation story and oral traditions are intrinsically connected to our environment and land. Each Navajo has a sacred duty to maintain *Hózhó* – harmony and balance with the environment, land, and all living beings.

It is only through doing this that we, as *Diné*, can experience wholeness, self-respect, and maintain a positive state of well-being. In contrast, when we do not do this, we experience *Hóchxó*, or all that is ugly, unhappy, and disharmonious in our world. This includes physical health issues, such as cancer; mental health issues, such as depression and suicide; environmental issues, such as drought; and social issues, such as domestic violence and alcohol and drug abuse, and even a lack of economic growth and development.

The outside world might consider such beliefs implausible, as not grounded in science, logic, or reason. As spiritual people, however, we believe that our thoughts, actions, and traditional practices contain a metaphysical power which transfers into our daily lives. One of our most important objectives as *Diné* is to protect the land, water, and air within our sacred mountains so that all living beings can live in balance and harmony and *Hózhóogo Naashá* – walk in beauty.

It is imperative that the federal government address the immediate and ongoing costs to remediate the environmental damage to Navajo lands, which are causing illness and death to present and future generations of Navajo people, by reforms to the Mining Law of 1872. These reforms may include the establishment of an abandoned mine land reclamation fund, paid for through mining

²¹ The full text of the resolution of the Navajo Nation Council and statute may be found at <https://www.nrc.gov/docs/ML0723/ML072340482.pdf>.

²² The full text of the resolution of the Navajo Nation Council and statute may be found at https://www.sierraclub.org/sites/www.sierraclub.org/files/sce/grand-canyon-chapter/political_action/CF_18_12.pdf.

royalties and fees. To this end, a new and reformed mining law should end patenting and establish a fair royalty system, based on the value of the extracted ore. Last, reforms to the General Mining Law should also include the assurance of regular, meaningful, and robust tribal consultation – as called for by Executive Order 13175 of November 6, 2000 – when federal agencies develop hardrock mining regulations which have tribal implications.

The Navajo Nation thanks you for your consideration of our testimony. Please address any questions to Santee Lewis, Executive Director of our Navajo Nation Washington Office. She may be reached at (202) 682-7380.