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Angela M. Wood, Eastern Washington University, undergraduate student, “Uranium Natives: Mining for the Cold War”

Abstract: During the Cold War Americans sought vast supplies of uranium in the arms race to stay ahead of the Soviet Union. People who owned uranium mines were more concerned with production than they were with safety. Unfortunately one of the casualties of the race were native American mining communities that did not understand the nature of what they were working with. Due to their traditional relationship with the earth, they honestly did not think anything from the land would hurt them. They did not know about radiation. Not even scientists fully understood the substance, but they continued mining anyway, to make more weapons. Safety took a back seat to the production of weapons. How many people on Indian lands were affected? What are the long-term impacts of the mining on the environment? What is being done to address these problems? In my paper I plan to explore these questions.

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Uranium Natives: Mining for the Cold War

Abstract: During the Cold War the quest for plutonium to produce more bombs and beat the Soviets was the mission for the Department of Energy. There was constant fear of an atomic bomb being dropped on the U.S. The search for uranium was on. People who owned mines, however, were more concerned with production than they were with safety. Unfortunately, because most of the uranium was on Indian lands, one of the biggest casualties of the race were the native communities who especially didn't understand the nature of what they were working with. Due to their traditional relationship with the earth they honestly didn't think anything from the earth would hurt them. They didn't know about radiation. Not even scientists fully understood the substance but they continued anyway, to make more weapons. Safety was a lesser concern compared to the production of weapons that we were sure the Soviets were building. What are the long term effects to the people? What is being done to clean up the mines? In my paper I plan to address these questions and more.

Under the Ponderosa Pines of the Inland Northwest, native women and children gathered roots, nuts, and berries to feed their families. Birds sang in the canopies while everyone quietly worked. This subsistence of the land existed for millenia. Men hunted and fished in the cold, clear waters of the rivers. Salmon were so abundant it was said a person could walk across the Columbia River without getting one's feet wet. Food was plentiful and many thanks were given to the spirits that helped sustain them. Yet it would not last forever.

This change started with the forced migration onto reservations in the late 1800s. It wasn't till 1877 that the Spokane Indians began the move onto reservation lands. They were moved to land too rocky for farming, and almost no gold and silver for mining. Further change was brought about by the Second World War with the development of the atomic bomb and all the processes that went into making it, such as mining and refining the ore to make plutonium. This was all done here in the Inland Northwest in an efficient chain of production. There were many side effects of the production of the bombs such as radiation, mining and pollution, that led to the loss of a traditional way of life for the local native populations. Prior to the 1950s many natives continued to live a subsistence lifestyle, or on family farms. Dams were built to irrigate fields and, later, to provide water to cool the reactors of the plutonium plant at Hanford, near Richland Washington. Unforeseen was the effect radiation would have on the environment, yet production continued until the end of the Cold War.

Fifty miles northwest of Spokane, Washington, sits the Spokane Indian Reservation, which became the home of the Midnite and Sherwood Mines that provided the uranium used to make plutonium in the Northwest since 1954. Twins John and Jim LeBret went out with a geiger counter and a mineral light one evening on the reservation and ended up finding large amounts of uranium¹. This discovery became a great boon to the reservation, as it created a lot of jobs due to the high demand of uranium at the time, boosting the local economy greatly. "Uranium was worthless in the late 1800s when members of the tribe were moved from their homelands along the Spokane River to the reservation. By the 1950s, a 55 gallon barrel of uranium oxide was selling for \$32,000."² Logging at that time was the only other steady work on the reservation so the jobs created by the mines were very attractive.

The workers, mostly natives, were informed the ore was safe to be around. As they didn't believe anything from the earth would hurt them, they began to bring ore nuggets home to their families, thus spreading contamination further. Many workers "brought home dust on their clothing, exposing their families to radiation and heavy metals"³ One insurance agent in Spokane had a large nugget in his office window until he was encouraged to remove it; he was not told why. The management of the mines even encouraged the belief it was safe by not informing the workers of the dangers of radiation. Prior to the 1950s there was a health fad of radium water. It was touted as a panacea, a cure-all for everything from arthritis to old age. "The invigorating effects of

¹ Becky Kramer, "Exposure Risk Limits Food Hunt," *Spokesman Review*, June 05, 2011, www.newspapers.com

² Kramer, "Exposure"

³ Kramer, "Exposure"

the radium give a pleasant sense of well being to the radio-activity absorbed by one's body, which is retained for several hours after the treatment."⁴

Clyde Lynn, a worker in the mines in 1981, stated, "I never saw people wearing masks. Our safety training was on how to put out fires, or the importance of wearing hard hats. It was never on radioactive exposure."⁵ The safety equipment required was a hard hat, required in all mines, and usually steel-toed shoes, safety glasses, and little else. Respirators weren't even worn. The workers didn't even wear gloves when handling the "yellow cake", uranium oxide made during the milling process, when it got stuck in the chutes. The worker would just reach in and clear the blockage. The lack of concern in safety and containment of radiation not only resulted in the contamination of workers but also of local waterways and wildlife.

Scientist Lauren Donaldson of the University of Washington in Seattle came to Hanford to head up the experiments on fish to see how the effluent water from the reactors, and radiation from the mines, would affect the fish in the rivers. The fish in the experiments were dosed with differing amounts of x-rays then examined. At 100 rads (radiation absorbed dose) the fingerlings, the baby fish, appeared normal, at 250 rads scientists reported "evidence of disorganization," the yolk sacs bulged and the fish were thinning, "at 1,000 rads the fish have shrunken radically, given over to a tumor-like growth in the abdomen."⁶ At every dose above 500 rads the fish soon died. However, it

⁴ Colleen Kujawa, "Before "Raw Water" Radium Water Was the Craze," *Chicago Tribune*, Mar 03, 2018, <https://www.chicagotribune.com/opinion/commentary/ct-perspec-flash-radium-elixir-fad-cure-cocktails-0304-20180220-story.html>

⁵ Kramer, "Exposure"

⁶ Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (New York:Oxford University Press, 2013), 62.

was ultimately determined that the fish were up to forty times more toxic than the water they swam in since the radiation accumulated in the organs and tissues. While these studies were being conducted by the government, the information was kept from locals leading to misinformation and continued contamination of residents. With fish being a major food source for local tribes this resulted in major health problems down the road for both current and future generations. The local residents as well as the Indian tribes in the area were never warned about the radiation or encouraged to stop fishing.

The waste rock from the mines were used for roadbeds and other building materials and was used even in homes on the reservation. Ore spilled out of trucks as they drove down the road, leaving hot spots. It was stockpiled at the mine site, and at the processing site at Ford, where the smelter is. People on the reservations are now encouraged not to eat the game and wild plants there. Their traditional subsistence is gone, yet there are very little employment opportunities on the reservation to make money to buy food either. "A lot of our (traditional) food had disappeared,"⁷ recalls Pauline Flett, a Spokane Indian. She goes on to say that the mines were "an abomination to our tribe. All it did was leave open pits full of contaminated waters."

In an interview in 2011, Bob Brisbois, the Spokane tribes executive director, states that five members of his family died in one year because of cancer. His mother died of bone and colon cancer, having never smoked. His nephew died of bladder cancer. He didn't work in the mines, but he did have a habit of swimming in the Spokane River and eating the roots and berries that grew in the area. Clyde Lynn said,

⁷ Pauline Flett, interview by Martha Holliday, Spokane, November 4, 1999.

“They needed that uranium. They needed it for the Cold War. We, the people, were expendable. That was the attitude of the U.S. government.” Clyde Lynn’s grandmother kept a 6 inch long crystal in a suitcase under her bed. She died of cervical cancer.⁸ She thought the crystal had medicinal properties . Author Sherman Alexie lost his grandmother to esophageal cancer in 1980. After this, he and his mother took a map and put a red dot at every home where someone had died of cancer.⁹ Apparently, there were a lot of red dots. There are no official records on how many people died over the years from cancers related to the mining or milling processes. According to the EPA, there is a 1 in 5 chance of developing cancer from the lands around the mines.¹⁰

Deb Abrahamson, founder of the SHAWL Society (Sovereignty, Health, Air, Water, Land) has been an advocate for cleanup for decades. She had grown up on the Spokane Reservation, and briefly worked at the mill at nearby Ford. She says she remembers, as a child, playing with what were called ‘crazy balls’ that bounced at odd angles. She later found out they were used for crushing ore and were probably radioactive. Her adulthood had been dedicated for the protection of the environment and the marginalised people, mostly natives, who suffer the consequences. She was involved with the North Dakota oil pipeline protest, Standing Rock, in 2017, as well as the protest against storing more radioactive materials at the closed Midnite Mine back in 1994. She advocated for better protection for the cleanup workers than what the miners had as the effects of radiation are better known. She knew the jobs created would be

⁸ Kramer, “Exposure”

⁹ Warren Cornwall, “Radioactive remains: The Forgotten Story of the Northwest’s Only Uranium Mines,” Seattle Times, February 24, 2008.

¹⁰ Cornwall, “Radioactive”

appealing for the tribe. She “successfully [worked] to stop a relaxation of clean up standards at the Midnite Mine site earlier this year (2019)”¹¹ She passed away from terminal cancer January 1, 2021.

In an interview with Robert Martin of Jacobs Engineering, he told me about his work with the Environmental Protection Agency (EPA) and what is being done for cleanup. He stated that the tribes are very proactive in the cleanup of the mines. They want to make sure all is being done to make the land and waterways safe again. Part of the problem is that there is a natural background radiation level in the area. "How far do they go to clean up? Do the companies need to clean it up better than it was, or just to the natural background levels?"¹² Martin states this is a constant discussion in meetings with the companies and the EPA. He also talks about the other difficulties such as the remoteness of the site itself. It can be especially difficult to get out there in the winter due to weather. There is no power, no water (at least, not any safe water) and no buildings. These issues were addressed in the meetings leading up to the clean up project but there are still setbacks. No plan ever seems to survive implementation.

The clean up process is simple on paper, but complex in practice. There is approximately 500 million gallons of water that still needs to be treated, stored in Pit 3. There is ore and other waste materials that need to be disposed of. At Pits 1 and 2, the water was pumped out of the pits, lined with a liner, and filled in with earth. The pits were then capped with a geo-synthetic substance which is sloped and covered with

¹¹ Ted McDermott, “Deb Abrahamson Blames Mining Pollution for Her Cancer, Keeps Fighting Toxic Legacy on Spokane Reservation,” *Spokesman Review*, December 1, 2019. www.newspapers.com

¹² Robert Martin, Interview by Angela Wood, February 10, 2021.

vegetation on top. This is to keep water from building up in the pits and leaching into the ground and waterways. The water that has been pumped out of the pits is run through a filter system, then into Blue Creek, a tributary to the Spokane River.¹³ Even with the cleanup the area would still not be usable, at least not by humans. It will be a habitat, much like the Hanford Reserve, where there is wildlife and vegetation, but no human habitation. This decision has been frustrating to the tribes and the local communities because they want to turn it into a recreation area, with fishing and possibly camping. What to do about all the ore and waste material is also part of the clean up because the rocks and gravel are also contaminated. It is all so widespread, however, that finding it can be difficult. According to RCRA (1976) if an item, such as the gravel from mining, can be used as a product, then it isn't treated as a waste. This explains why there is a wide distribution of the products, but not how they will be tracked down and dealt with. The materials are all over the region, used in various construction projects. As yet, there is no definite plan on how to rectify this.

The legacy of the world's first atomic bomb lives on to this day. It affects the environment, the people, and the cultures of the area. No longer is a hunter-gatherer existence possible for the native tribes of the area. Many people still eat the fish in the rivers, but are cautioned not to eat more than two per month. The native plants that the Indians relied upon are either gone or contaminated. Many Indians die each year from cancer, yet no one has really studied why that is. There does appear to be a direct correlation between uranium exposure and cancer, but the government only recognized thyroid related cancers as being caused by uranium. They still claim that something else

¹³ Martin Interview

must be causing the increase, not the radiation. Scientists know that radiation corrupts the DNA, leads to cancer, and ultimately kills people. The government says it's something else, but could it really be anything else?

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This is an article from the Seattle Times talking about how the uranium mines have been all but forgotten to the general public, but the Indians on the reservation can't forget. Everyone knows someone who has died of cancer.

Henderson, Valerie. "Deformed Fish create concern: Tribes take Second Look at State, Federal Safety Standards on Hazardous Material." *Indian Country Today*, December 09, 1996, Accessed November 21, 2020.

<https://indiancountrytoday.com/>

This article covers the concerns that natives have about the environment and the wildlife. Local fishermen have noticed that not all the fish in the rivers appear normal.

Kramer, Becky. "Exposure Risk Limits Food Hunt" *Spokesman Review*, June 05, 2011, Accessed February 21, 2021. www.newspapers.com

This article has a great interview with one of the Spokane Indians, a volunteer gravedigger. He talks about the increase of cancer related deaths over the years and how it seems to be getting worse.

Kujawa, Colleen. "Before 'Raw Water,' Radium Water Was The Craze." *Chicago Tribune*, March 3, 2018, Accessed March 1, 2021.

<https://www.chicagotribune.com/opinion/commentary/ct-perspec-flash-radium-elixir-fad-cure-cocktails-0304-20180220-story.html>

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McDermott, Ted. "Deb Abrahamson Blames Mining Pollution on Her Cancer, Keeps Fighting Toxic Legacy on Spokane Reservation." *Spokesman Review*, Dec 1, 2019, Accessed February 21, 2021.

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This article describes the history of the environmental protection of the Spokane Reservation, and the legacy of the mines, the health problems that followed. It also contains a brief history of the tribe.

McDermott, Ted. "Deb Abrahamson, Powerful Advocate for Environmental Justice on Spokane Reservation, Dies at 65." *Spokesman Review*, Jan 4, 2021, Accessed February 21, 2021.

<https://www.spokesman.com/stories/2021/jan/03/deb-abrahamson-powerful-advocate-for-environmental/>

This article talks about the life and death of Deb Abrahamson, an environmental justice advocate for the tribes, and other people that are affected. She formed the SHAWL Society and protested the relaxation of cleanup standards for the Midnite Mine.