

29 January 2024

The Honorable Katie Hobbs  
Governor of Arizona  
1700 W. Washington St.  
Phoenix, AZ 85007

Re: Close the Pinyon Plain (aka Canyon) Uranium Mine

Dear Governor Hobbs,

The undersigned organizations and scientists urge your administration's leadership to protect critical cultural and natural resource values in Arizona by revisiting and correcting the Arizona Department of Environmental Quality's (ADEQ) permitting for the Pinyon Plain uranium mine near Grand Canyon, in Baaj Nwaavjo I'tah Kukveni – Ancestral Footprints of the Grand Canyon National Monument, a national monument you strongly support.

We urge you to use your authority as Governor of Arizona to limit permitting to closure and post-closure monitoring and maintenance activities, which are the only uranium mining activities that are compatible with protecting critical cultural values and ensuring against irretrievable harm to the Grand Canyon's aquifers and springs. We urge you to exercise all other executive authorities at your disposal as may be necessary to achieve those ends.

The Pinyon Plain mine, located within Baaj Nwaavjo I'tah Kukveni – Ancestral Footprints of the Grand Canyon National Monument, began extracting uranium ore on 8 January 2024. The mine is located just south of Grand Canyon National Park atop and extending down to between two major aquifers that feed Grand Canyon springs, and at the foot of Red Butte, which the proclamation for the Ancestral Footprints monument describes as:

*[A] towering landmark that is eligible for inclusion on the National Register of Historic Places as a traditional cultural property. Called Wii'i Gdwiisa by the Havasupai and Tsé zhin Ii'ahi by the Navajo, it is defined by an eroded rock and basalt cap from ancient lava and is sacred to the Havasupai, Hualapai, Navajo, Hopi, and Zuni Peoples. Red Butte and the surrounding area are central to Tribal creation stories, and dense concentration of flaked stone tools and pottery provide evidence of thousands of years of human habitation there.<sup>1</sup>*

Given mining's incompatibility with cultural values, the toxic health legacy of uranium mining within southwest Tribal communities, and its unmitigable environmental threats, federal and state approvals have come against nearly four decades of strenuous objection from the Havasupai Tribe, other tribes, expert scientists, local communities, individual members of the public, and indigenous, faith, and

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<sup>1</sup> The Honorable Joseph R. Biden, Jr. 2923, A Proclamation on Establishment of the Baaj Nwaavjo I'tah Kukveni - Ancestral Footprints of the Grand Canyon National Monument. Accessed 13 Jan 2024: <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/08/08/a-proclamation-on-establishment-of-the-baaj-nwaavjo-itah-kukveni-ancestral-footprints-of-the-grand-canyon-national-monument/#:~:text=BIDEN%20JR.%2C%20President%20of%20the,Baaj%20Nwaavjo%20I'tah%20Kukveni%E2%80%93>

conservation groups. Hauling and processing of uranium through and near regional communities continues and worsens a legacy of environmental injustice resulting from uranium development.

In response to news that mining had begun at Pinyon Plain, the Havasupai Tribe reiterated its concern in a 11 January 2024 statement which in part reads:

*As Guardians of the Grand Canyon, we the Havasupai Tribe, have opposed uranium mining in and around our Reservation and the Grand Canyon since time immemorial. We do this to protect our people, our land, our water, our past, our present and our future. And yet, despite the historic and current assistance and advocacy from numerous allies, and the countless letters, phone calls, and personal pleas, our urgent requests to stop this life-threatening action have been disregarded.*

*Our tribal community's only source of water is fed by aquifers, which unfortunately sit directly below the Pinyon Plain Mine. The Arizona Department of Environmental Quality and the federal EPA claim there is no danger to us, that no harmful effects will come our way from this alleged "clean energy" source. But how can they so confidently make such a claim when Energy Fuels has already contaminated one of the two aquifers while digging the mine shaft, which then led to the company spraying toxic water into the air, only to be spread to the precious plants and animals by the blowing winds. A whole set of unknown and new problems will exist when the company begins transporting uranium over the land.*

*This is not just a problem that affects our remote Tribe. Rather, millions of people will now be forced to pass by an active uranium mine on their way to the majestic Grand Canyon... Shame on Energy Fuels, and those who were not brave enough to do what is right and necessary.<sup>2</sup>*

Navajo Nation President Buu Nygren on 11 January 2024 also released a statement in response to news that mining at Pinyon Plain had begun. It in part reads:

*Pinyon Plain/Canyon Mine was and is opposed by all neighboring tribes that have forever called Grand Canyon their home. Despite all of our objections through the years, we learn through the media, rather than from our federal trustee – the U.S. Department of Agriculture/U.S. Forest Service and U.S. Department of the Interior/Bureau of Land Management – as we would correctly expect, that our land and water will again be threatened with contamination.<sup>3</sup>*

State and federal mine approvals, since the outdated, but still-in-force 1986 Environmental Impact Statement, have consistently favored mining over public interests. Each has dismissed Tribal concerns, downplayed or misrepresented scientific uncertainty and environmental risks, and dismissed and underestimated the potential for mine operations to encounter, deplete, and pollute aquifers upon which regional communities depend. These aquifers directly feed Grand Canyon's springs, including

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<sup>2</sup> Havasupai Tribal Council. 2024. Statement from the Havasupai Tribe Regarding Energy Fuels.

<sup>3</sup> Honorable Buu Nygren, President, Navajo Nation. 2024. We Join Our Neighbors to Implore Our Trustee to Protect Us from the Harmful Effects of Uranium Mining. Accessed 16 January 2024:  
<https://www.facebook.com/PresidentNygren/posts/pfbid0fikzQLXdqsOKzzFLFop1gBwnEJUj93io7dSmaYvhCQqyKxdFmsnH2bPdJA2Fj1VYl>

Havasu Springs and many others, which provide water for unique biota, endangered, and/or endemic species found nowhere else on Earth.

The mine's ore bodies are positioned in geological strata between the Coconino and Redwall-Muav aquifers. Mine shaft excavation in 2016 punctured and began draining the Coconino aquifer. Each year since, the mine has pumped between eight and 11 million gallons of water from mine workings below the Coconino aquifer; that water, pumped into an open-air holding pond, has consistently exhibited concentrations of uranium and arsenic exceeding EPA drinking water standards. This ongoing flooding, during and after mining operations, threatens to travel through oxidized and water-soluble mined ore bodies, carrying pollutants into the Redwall Muav aquifer below.

Current permitting of the mine is predicated on a false scientific certainty alleging that, as stated by ADEQ, "it is virtually impossible for the mine to contaminate the Redwall-Muav Aquifer due to the impermeability and thickness of the rock layers between the bottom of the mine shaft and the Redwall-Muav Aquifer."<sup>4</sup> Prior permitting had relied on a similar assurance that developing the mine shaft would not encounter groundwater which is irrefutably disproved by ongoing pumping of contaminated groundwater from the mine shaft.

ADEQ's false certainty belies a decades-long scientific debate relating to the potential for breccia pipe uranium mines near the Grand Canyon, and the Pinyon Plain mine specifically, to deplete and pollute regional aquifers. That still-vigorous debate includes recent peer-reviewed findings of both young and old water in the Redwall-Muav aquifer beneath the mine, indicating a connection between that Redwall-Muav and Coconino aquifers and land surface above it. One peer-reviewed study's authors conclude that:

*In terms of resource management, the findings of this work indicate (1) contaminants, either from land-surface or subsurface sources, are likely to be transported into the deep aquifer, which is the primary source of South Rim springs and drinking water wells, (2) redistribution of run-off could significantly alter the net recharge, and thus discharge, and (3) current understanding of South Rim groundwater is incomplete, presenting a challenge to science-based decision making.*<sup>5</sup>

Another peer-reviewed study's authors state:

*This study explains the hydrochemical variability of South Rim springs and groundwater as primarily due to anthropogenic groundwater mixing and secondarily due to variations in local recharge, as proposed by others. The hypothesis suggests that uranium mining, local groundwater pumping, and management of the pipeline and [South Rim Water Reclamation Plant] infrastructure are all part of an interconnected South Rim groundwater system. [A] direct connection between the perched C-aquifer and R-M aquifer and mining operations is likely.*<sup>6</sup>

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<sup>4</sup> Arizona Department of Environmental Quality. 2024. Pinyon Plain Mine Frequently Asked Questions (FAQs). Accessed 13 Jan 2024 at: <https://www.azdeq.gov/PinyonPlainMine/FAQ>

<sup>5</sup> Solder, J.E., Beisner, K.R. Critical evaluation of stable isotope mixing end-members for estimating groundwater recharge sources: case study from the South Rim of the Grand Canyon, Arizona, USA. *Hydrogeol J* 28:1575–1591 (2020). <https://doi.org/10.1007/s10040-020-02194-y>

<sup>6</sup> Curry, B.H., Crosse, L.J. & Karlstrom, K.E. The Grand Canyon National Park (USA) water corridor: water supply, water quality, and recharge along the Bright Angel Fault. *Hydrogeol J* 31, 1773–1794 (2023). <https://doi.org/10.1007/s10040-023-02633-6>

These and other studies underscore the persistent scientific uncertainty and disagreement concerning the potential for grievous harm from uranium mining to critical aquifers. In light of that uncertainty, neither industry nor regulators, despite ADEQ's claims otherwise, can ensure against irretrievable damage to aquifers below the mine that feed Grand Canyon's springs. That damage, were it to occur, would be impossible to correct, and, given the values at stake, is a risk that should not be taken. Preventing that outcome requires strong leadership from your administration.

We therefore urge your administration to revisit and correct permitting for the Pinyon Plain uranium mine to protect the Grand Canyon's precious groundwater. We urge you to limit permitting to closure and post-closure monitoring and maintenance activities, which are the only uranium mining activities that are compatible with protecting critical cultural values at Red Butte and ensuring against irretrievable harm to the Grand Canyon's aquifers and springs. We urge you to exercise all other executive authorities at your disposal as may be necessary to achieve those ends; time is of the essence.

Thank you for your consideration.



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