



Colorado Chapter

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Colorado Division of Reclamation, Mining & Safety

https://dnrlaserfiche.state.co.us/Forms/DRMS_Comment

drms_info@state.co.us

Re: Permit # P2023018

Dear Division of Reclamation, Mining and Safety,

Sierra Club's mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." Sierra Club has more than 2.1 million members and supporters nationwide, including more than 80,000 Coloradans. Although we are comprised of a diverse population, the tie that binds us is our commitment to conserving those places, processes and organisms that will sustain our natural heritage with all of its biological diversity.

Accordingly, the Colorado Chapter of the Sierra Club is opposed to the issuance of an exploratory drilling permit for the Slick Rock Canyon Uranium project. This proposed uranium exploratory drilling and mining development project has a high possibility of harming human health, violating environmental justice and equity, and degrading the region's wildlife and natural resources.

1. Uranium extraction processes separate uranium from its decay products which are also radioactive and contain most (80-90%) of the radioactivity in the rock (ore). The solid radioactive wastes that are left over from the milling processes, tailings and the liquid wastes raffinates, remain radioactive and contain hazardous chemicals from the recovery process (EPA 2023).

The process that will be used to recover uranium from the proposed Slick Rock Canyon mine is milling, which would be conducted at the nearby White Mesa Uranium Mill. Milling uses alkali and acid washes to isolate the uranium. Besides chemicals used in washes, the toxic tailings contain sulfide ores, molybdenum, selenium, arsenic, and mercury, and approximately 85% of the radioactivity of the original ore (NIH 2023). Regardless of how uranium is removed from rock, the extraction process creates both mining waste and mill tailings, radioactive wastes that can contaminate soil, air and water (EPA 2023). These contaminants can then move into and poison plants and animals including humans.

Exploratory drilling, mining and milling processes will both deplete Dolores River water and threaten to pollute rivers and the life that they support. Although uranium is widespread in the earth's crust, and whenever aquifer and bedrock interface, there might be some uranium in the water, **exploratory drilling or mining increases exposure of water to potential contamination** (NIH 2023).

2. The Ute Mountain Ute Tribe has long protested the White Mesa Uranium Mill Because of the potential dangers of radioactive uranium and the on-site waste containment cells from the milling process. The White Mesa Mill's sprawling waste pits, which spread across about 275 acres and contain

more than 700 million pounds of radioactive materials from contaminated sites across the country and the world, sit just a few miles from the White Mesa community (GCT 1, 2022).

White Mesa community members, tribal leaders, and the tribe's environmental department are concerned that radioactive contamination from the mill could put public health, water, and air quality at risk. The community's drinking water aquifer is located deep beneath the mill's waste pits. At a [spiritual walk](#) (GCT 2, 2022) opposing the mill on October 22, 2022, Ute Mountain [Ute Tribal Council Member Conrad Jacket](#) told the crowd assembled outside the community center. "Red, white, blue...I don't give a care what color you are, if water gets contaminated, then that's the end..." (GCT 2, 2022).

3. Uranium possesses both chemical toxicity and radioactivity. The effects of low-level radioactivity include cancer, shortening of life, and subtle changes in fertility or viability of offspring, as determined from both animal studies and data on Hiroshima and Chernobyl survivors. These effects can be delayed for decades or for generations and are not detected in short-term toxicologic studies (NIH 2023).

The Sierra Club's opposition to the issuance of an exploratory drilling permit are due to both health and environmental concerns about uranium mining including: 1) health and safety of miners and mine sites; 2) health and safety of people in the vicinity who might be affected by spread of radioactivity from the tailings or tailings ponds; and 3) environmental effects of increasing background radiation and water contamination.

Contamination from uranium mining activity will persist for generations. The dust that blows away from the sites and the copious amounts of water used for dust control and uranium extraction all contain long-lived radioisotopes that are being disseminated into the environment. In the tailings, thorium 230 decays to produce radon gas. With a half-life of 76 000 years, it will produce radon for millennia. In the atmosphere, radon decays into the radioactive solids polonium, bismuth, and lead, which enter water, crops, trees, soil, and animals, including humans (NIH 2023).

4. A recent analysis of biodiversity values across the unprotected public lands in Colorado found 71 areas on unprotected federal public lands in Colorado containing high biodiversity values; of those 71 areas, the public lands within the Dolores River Canyon Country represent [the largest and most biologically diverse unprotected publicly-owned landscape in Colorado](#) (Figure 1) (CSP 2023).

All phases of uranium development — exploration, mining and milling — can pose unique threats to species, ecosystems, and human communities. From habitat destruction and disruption of wildlife to bio-accumulation and irreversible pollution of waters, uranium exploration and mining threatens to build upon uranium's legacy of environmental and social harm. Disturbance of the land surface by mining, the temporary storage of ores and mining and processing wastes on-site, dewatering of mine workings/pits, and a variety of reclamation activities all have the potential to significantly affect the concentrations and loads of dissolved and suspended materials in surface water off-site (NIH 2011). Pollutants from the mining of uranium can contaminate aquatic ecosystems for hundreds of years, threatening downstream communities and fish and wildlife. Even small amounts of some pollutants can poison fish, accumulate in the food chain, and cause deformities and reproductive problems for aquatic species.

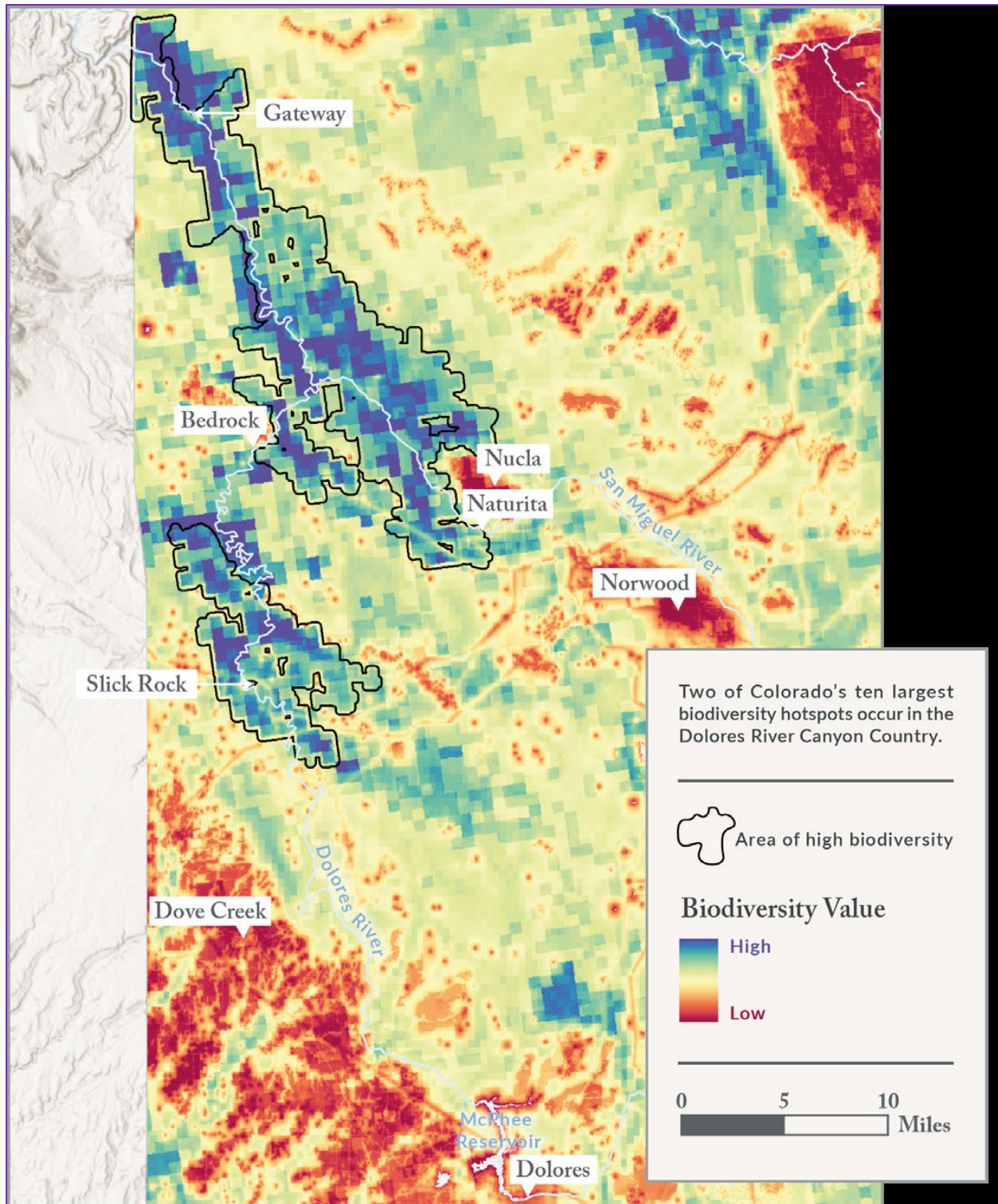



Figure 1. Of the ten largest unprotected biodiversity hotspots in Colorado, two of them are found in the Dolores River Canyon Country. SOURCE: Suraci, J., Farwell, L., Littlefield, C., Freeman, P., Zachmann, L., Landau, V., Anderson, J., Dickson, B. 2023. Achieving conservation targets by jointly addressing climate change and biodiversity loss. Ecosphere. <https://doi.org/10.1002/ecs2.4490>

Uranium mining has widespread effects, contaminating the environment with radioactive dust, radon gas, water-borne toxins, and increased levels of background radiation. There are no boundaries for air and water; the addition of long-lived radioisotopes anywhere in the environment eventually affects the health of everyone.

If permitted, this development would threaten both human culture and natural resources in both the Disappointment Valley and the Ute Mountain Ute Tribe's White Mesa community. For decades, the [Ute Mountain Ute Tribe](#) and environmental organizations, including the Grand Canyon Trust, have [raised concerns](#) that the mill poses a threat to human health and the environment (GCT 2021).

In consideration of the threats to human and environmental health from the proposed project we respectfully request that you deny exploratory drilling permits for the Slick Rock Canyon Uranium Project.

Delia G. Malone

A handwritten signature in black ink, appearing to read 'Delia Malone', with a long horizontal flourish extending to the right.

Ecologist and Wildlife Chair

Colorado Chapter of the Sierra Club

LITERATURE CITED

Conservation Science Partners (CSP). 2023. Assessment of the Biodiversity Values Provided by Unprotected Public Lands in Colorado Including the Dolores River Canyon. Final Public Report. Truckee, California, USA. Available online: https://46913af6-4945-45d0-8f6a-1ffc6aa33055.usrfiles.com/ugd/46913a_384513c6b7c943a9a0b4963b205e42c8.pdf

Grand Canyon Trust (GCT) 1. 2022. The Business of Radioactive Waste. Available online: https://www.grandcanyontrust.org/sites/default/files/resources/White_Mesa_Report_March2022_Final.pdf

Grand Canyon Trust (GCT) 2. 2022. White Mesa Ute Lead Spiritual Walk to Protest Uranium Mill. Available online: <https://www.grandcanyontrust.org/blog/white-mesa-ute-lead-spiritual-walk-protest-uranium-mill>

Grand Canyon Trust (GCT). Intertribal Walk Protests Uranium Mill Near Bears Ears. Available online: <https://www.grandcanyontrust.org/blog/intertribal-walk-protests-uranium-mill-near-bears-ears>

National Institute of Health (NIH). 2013. Uranium mining and health. National Library of Medicine. Available online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3653646/>

National Institutes of Health (NIH). 2011. Uranium Mining in Virginia: Scientific, Technical, Environmental, Human Health and Safety, and Regulatory Aspects of Uranium Mining and Processing in Virginia. Available online: <https://www.ncbi.nlm.nih.gov/books/NBK201049/>

U.S. Environmental Protection Agency. (EPA. Radioactive Waste from Uranium Mining and Milling. Available line: <https://www.epa.gov/radtown/radioactive-waste-uranium-mining-and-milling>