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On behalf of Friends of Black Rock High Rock (FBRHR), a legacy nonprofit dedicated to education and conservation of the Black Rock Desert High Rock Canyon Emigrant Trails National Conservation Area, we are submitting comments to Ormat's Gerlach Geothermal Exploration Project, DOI-BLM-NV-W030-2022-0001 EA.

This exploration project, with 21 geothermal explorations wells, miles of access roads, an aggregate pit and a footprint of over 54 acres will occur less than a mile from the town of Gerlach, intersect multiple cultural sites and impact private properties operating businesses both creating and dependent on tourism and outdoor recreation.

We wish to have acknowledged that the term 'exploration' belies the much more concerning project that will inevitably follow the exploration.

Nonetheless, in these comments, we will reply *specifically* to the Gerlach Geothermal Exploration Project that BLM Winnemucca District, Black Rock Field Office is seeking input on.

## **Primary Concerns**

### Cultural Impacts/Cultural Resources

- **Black Rock Desert High Rock Canyon Emigrant Trails National Conservation Area (BRNCA)** was created for its sublime solitude, quiet and expanse of untrammeled beauty. Ten contiguous and non-contiguous Congress designated Wilderness Areas and hundreds of mostly pristine emigrant trails make the largest National Conservation Area in the lower 48 states a jewel in the crown of public lands. The primary entrances to the BRNCA, along the paved State Route 34, are all within a few miles of the proposed project. Visitors will be compelled to travel through the Ormat drill pads and facilities to enter the BRNCA through a corridor of pipelines, drill pads and aggregate pits and pools. The first view of the Black Rock Desert will not be wild places, pristine public lands but of the geothermal operations. This view, its impact on locals and visitors bely the principals the BRNCA was created on.
- **The Nobles Trail** was established in 1852 to provide a new wagon route southwest from the Black Rock Desert through the Smoke Creek Desert and on to Honey Lake and Susanville. Since 1970 a non-profit group of enthusiasts has established over 700

historical markers commemorating the emigrant journey. Two of these markers, 'Granite Springs' (marker N6) and 'Great Boiling Springs' (marker N7) are within or at the beginning of the Ormat Geothermal Exploration build area. Marker N6 is on the site that the first water the emigrants came to after crossing the Black Rock Desert as well as the rock ruins of Fort Granite. Marker N6 is the site of a large deep and very hot spring. Fenced areas will prevent visitors from stopping and reading the markers and considering the cultural history of the area.

- **Preservation of Paleoindian artifacts and archaeological sites.** Extensive research on Late Pleistocene and Early Holocene has shown that the Great Basin Paleoindians occupied the lake basins of ancient Lake Lahontan and left a considerable amount of carbon dated artifacts. Shells, charcoal, bone, crescent shaped tools, fossilized coprolites, human hair and twined tule mats tell a story of early human history well over 8,000 years. The proposed Ormat site is within the lake fluctuation area of Lahontan. Many of these artifacts were found near shoreline cave areas of Handprint Cave and Elephant Mountain Cave within the BRNCA. Just two miles north of the proposed Ormat site, on ledges carved out from the tides of Lake Lahontan, crescent shaped tools used to stun waterfowl, were once abundant. The proposed Ormat site deserves a thorough review to create a baseline for understanding the potential consequence of the proposed project. As the looting of Elephant Mountain Cave has shown, once a site has been disrupted the archaeological record is unredeemable.
- **Guru Road/Dooby Lane, an intentional art and community site.** From 1970 to the time of his death in 1995 DeWayne Williams built over 450 rock engravings and monuments on a long stretch of road just one mile from Gerlach and parallel to State Route 34. Nicknamed Dooby Lane, it is a loving and humorous testament to the community of Gerlach. For two decades locals and volunteers have restored the inscriptions, removed trash, and restored work. Thousands of visitors to the BRNCA have walked the road as a significant cultural site. Guru Road is in the Ormat project plan boundary and the southern end of Guru Road is less than 700 feet from a proposed well pad. Though Ormat is required to honor the right of way of Guru Rd on public lands it is impossible to believe that the beauty and integrity of the site will remain. Or that it will remain accessible to the public.

### Environmental Impacts

- **Water table and impacts to hot springs.** Though geothermal energy has been utilized for a very long time, some of the newer technologies to maximize energy output are less verified. Will the reserve pits contain the brine and are any hazardous materials expected to contaminate those pits? Will gas or air or chemical fracking be used to lift fluids? How will this project alter groundwater temperatures? Will antifreeze be used as a heat-carrier fluid and is there a risk of groundwater contamination? According to the Ormat proposal, water required for well drilling could range up to as much as 35,000 gallons per day. Water requirements for grading, construction and dust mitigation will be around 6,000 gallons per day. Water necessary for these activities will be from wells drilled on site and approved by BLM under a temporary waiver. What are the short and long term consequences of water extraction at this level?

- **Habitat.** The exploration project impacts important wildlife habitat. As currently projected the area of disturbance will overlap into Nevada Bighorn Sheep Habitat Allotment for grazing and management. This is also an important winter grazing habitat for pronghorn antelope. Wetlands that are hydrologically connected to the project will likely be impacted. Wetlands in the desert are rare and important habitats for invertebrates, fish, migratory and resident birds and mammals.

### Economic Impacts

- **Outdoor Recreation and Ecotourism.** The proposed project overlaps a portion of the Granite Mountain Special Recreation Management Zone (RMZ) and will end easy access to a favorite recreational area to outdoor enthusiasts. The RZM directs that any facilities in this area “*will be developed, located and designed in such a way as to be consistent with preserving the character of the adjacent Black Rock Desert High Rock Canyon Emigrant Trails National Conservation Area.*” Gerlach’s economy is largely based on the tens of thousands of outdoor event participants, hunters, mineral and gem enthusiasts, rocketeers, campers and hikers who visit the area.
- **Businesses.** Geothermal development has the potential for significant impacts to local businesses, including Black Rock Mud Company, that relies on Great Boiling Springs for an array of beauty products. Burning Man Project recently acquired property with the intention of developing the property into a makerspace and sculpture garden that would be open to the public via a linking walking trail from the community of Gerlach. This commercial development is directly adjacent.

### Quality of Life/Degradation of Character

- **Light Pollution.** There is an exponential growth in the awareness and values of preserving Dark Sky landscapes and communities internationally. On a local level this can be witnessed by the International Designation of Dark Skies Sanctuary at Massacre Rim just north of BRNCA. Not only is the community of Gerlach actively seeking Dark Skies Community status with the International Dark Skies Association, the BRNCA is a popular area for meteor shower campouts and astronomy.
- **Noise.** The project lies within a mile of Gerlach residences, and despite the Ormat project plan for rock mufflers the very fact of 200 plus employees operating well drilling, moving heavy equipment, moving rocks and aggregate materials within one mile of the community 24 hours a day, 7 days a week, right next to Guru Road and adjacent to private property, is distressing.
- **View Shed.** Gerlach’s economy and quality of life is dependent on tens of thousands of visitors from around the world drawn to sublime beauty, pristine places and quietude. The location of this project within the viewshed of Gerlach, the gateway community to BRNCA, is an unacceptable consequence.

## Suggested Modifications and Mitigations

Friends of Black Rock High Rock-High Rock is dedicated to preservation, education, and conservations of the BRNCA.

We are not environmental engineers or geothermal scientists. We rely on Federal Agencies such as the Bureau of Land Management to provide us with the good science and data to make informed comments regarding public lands held in trust.

We adamantly feel that Ormat's Gerlach Geothermal Exploration Project, DOI-BLM-NV-W030-2022-0001 EA raises significant and impactful issues that must be addressed.

We believe, as other concerned stakeholders have expressed, that Ormat should provide the following data:

- Adequate pre-drilling water/heat flow, water level, geochemistry and other baseline condition data and records for springs and spring habitat, wetlands, and wells of public lands and adjacent private property.
- A detailed plan for maintaining and preserving public access to historical markers and cultural sites within and adjacent to the project.
- A detailed study of the light and noise pollution (even with the consideration of portable rock mufflers) of the project and a plan to mitigate.
- A thorough archaeological survey of resources.
- A report on the economic impacts on the town of Gerlach to include concerns regarding housing, jobs, and impact to tourism and recreation.
- A detailed plan for mitigating the impact to important wildlife habitat and the effects on migratory and resident birds.
- A mitigation plan for groundwater contamination.
- Prepare a Net Energy Analysis comparing the energy input with energy outputs to determine project viability.
- Transportation analysis to assess the potential impacts to local roads from increased use and heavy equipment. Ormat should provide data and consult with Washoe County Roads Department and NDOT.

## Summary

As a renewable resource that is abundant in Nevada (currently there are 272 active leases managed by BLM) it is encouraging to see an increase in renewable energy as an alternative to coal, oil and gas extraction that has contributed to air pollution and greenhouse gas emissions. Public lands are a part of the solution to climate change. But renewable energy projects can disrupt water, wildlife and local economies if not built in the right place. The best way to get the clean energy we need and protect the communities and places we love is to site projects in the right place.

We adamantly believe this project is not in the right place and that the Ormat project rises to the level of a major impact that not only affects the environment but is also significantly controversial. We know that an Environmental Impact Statement is far more time consuming than an Environmental Assessment, but the data generated would ensure that concerns were addressed and less damaging alternatives are considered.

We also understand that a programmatic EIS from 2008 exists but that document is outdated and does not sufficiently address the concerns detailed here and from other stakeholders.

We ask that an EIS that sufficiently addresses the concerns presented here and by other stakeholders presented in 2022 be conducted.