



FRIENDS of NEVADA WILDERNESS



Via E-Mail [ [blm\\_nv\\_wdo\\_gerlach\\_geothermal@blm.gov](mailto:blm_nv_wdo_gerlach_geothermal@blm.gov)]

Tia Subia, Project Manager  
Mark E. Hall, PhD., Field Manager  
Black Rock Field Office  
Bureau of Land Management  
5100 E. Winnemucca Blvd.  
Winnemucca, NV 89445

Re: Draft Environmental Assessment -NV088151X3260 (NVWOI 0.28)  
DOI-BLM-NV-W030-2022-000I-EA  
Ormat Gerlach Geothermal Exploration Project

Dear Ms. Subia & Mr. Hall:

Friends of Nevada Wilderness and the Center for Biological Diversity jointly submit the following comments regarding the Bureau of Land Management Draft Environmental Assessment of Ormat's Gerlach Geothermal Exploration Project. Friends of Nevada Wilderness has been working on protecting the Black Rock Desert Region for many decades and was instrumental in the legislation that created the National Conservation Area and Wilderness areas. Many of our supporters and volunteers recreate in and around Gerlach, the gateway to the Black Rock Desert.

To be clear, we are requesting the BLM deny ORMAT's Operations Plan. We are strongly concerned that this project is being proposed in an area that includes and is surrounded by nationally significant resources. Proposal of an industrial scale geothermal plant which would significantly affect important resource values requires an EIS. Further, the EA separates exploration from pre-production and production which is unacceptable and the mitigation analyses and recommendations and cumulative effects analyses are incomplete and limited in scope. Much of the analysis is speculative and not supported by the facts on the ground. In short, should this project move forward we believe it is ripe for years of contention and will put ORMAT's decision making and impacts to our public lands and communities squarely in the public eye.

## **1. The Proposed Site for the New Geothermal Plant is Not Acceptable.**

With all of the renewable energy development occurring across the state of Nevada, it appears that the BLM rarely says no to an applicant and that development is a foregone conclusion, no matter the important resource values that may be impacted by the proposed action. However, an applicant and the BLM must show a need for the project and appropriate mitigation for all resources impacted by the project.

We understand that renewable energy is an important part of the administration's goals. Nevada's geothermal electrical generation plants are located predominantly in the northern portion of the State. Nevada's geothermal plants can theoretically generate up to 827 megawatts of power collectively in any given hour. A megawatt is 1,000 kilowatts, which is enough electrical power to serve up to 800 typical households. Nevada has 26 plants in 17 different locations. The 2018 gross electrical output for Nevada's 25 geothermal plants was 4,544,175 MWh, with net output (sales) being 3,587,219 MWh. Nevada's electrical generation capacity from its geothermal plants is second only to California.

<https://minerals.nv.gov/Programs/Geo/Geo/#:~:text=Nevada%20has%2026%20plants%20in,is%20second%20only%20to%20California>

Additionally, we recognize that ORMAT oversees 21 projects in the US; 11 of which are on public lands in Nevada.

<https://www.ormat.com/en/projects/all/main/?Country=USA&Seg=0&Tech=6&pageNum=1>

ORMAT Geothermal projects in Nevada include:

McGinness Hills (NV) 143 MW  
Steamboat Hills (NV) 84 MW  
Don A. Campbell (NV) 36 MW  
Tungsten (NV) 27 MW  
Brady (NV) 26 MW  
Tuscarora (NV) 18 MW  
San Emidio (NV) 11 MW (soon to be 40 MW)  
Jersey Valley (NV) 10 MW  
Blue Mountain (NV) 50 MW  
Soda Lake (NV) 14 MW  
Wabuska (NV) 3 MW

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11 Projects, TOTAL 422 MW (51% of Nevada's geothermal power)

Having said that, we have carefully reviewed the ongoing geothermal renewable energy projects across the state and have identified the proposed Gerlach project as a high concern to natural and cultural resources and the local economy of Gerlach. The proposed geothermal plant is adjacent to a National Conservation Area, two Wilderness Study Areas, and the proposed

Granite Banjo Wilderness Area that will be in the Truckee Meadows Public Lands Bill which includes BLM recognized Lands with Wilderness Characteristics. In addition to the wilderness resources, these lands are high value recreation with the Granite Foothills Recreation Management Zone and the Nobles Route of the California National Historic Trail. This area is also very well known as having one of the darkest night skies in the nation. Finally, development of an industrial scale geothermal plant virtually on top of a critical gateway community is of strong concern. These impacts, and others, require a hard look at whether or not the proposed project should be allowed.

Not every use should occur on every acre of public land. The Winnemucca District Resource Management Plan Objective D-MR 4 (BLM 2015a, p. 2-172), states, in part, that “Lands within the [Winnemucca District] would be open to geothermal and oil and gas leasing and development **except where incompatible with important resource values.**” Bottom line, we are requesting this Operation Plan be denied.

### **Our Request: Deny ORMAT's Operation Plan.**

## **2. ORMAT Needs to Write an EIS to Analyze Exploration, Pre-Production and Production**

Corporations who benefit from the public lands should be respectful stewards of the land and the people they serve. At the Washoe County pre-scoping meeting on July 19, 2022, ORMAT (Stacie Huggins, Amber Harmon, and Scott Nichols) ended the meeting at exactly 6:30 PM even though all questions were not answered.

ORMAT did not explain the reason for this proposal or provide a context for its importance. ORMAT needs to operate in a timely, proficient, and transparent manner rather than piecemealing environmental analysis to avoid taking a hard look at the true costs of developing this plant. As geothermal plants continue to be developed across the public lands in Nevada, how does this proposed particular plant (exploration is a facet of pre-production and the EA is analyzing production wells) fit in with the overall renewable energy needs of the American public? Why is this proposal so important given the permanent impacts to high value resources? What exactly does ORMAT need to find to make this a viable project? How will the energy be distributed and who specifically stands to benefit?

Additionally, all other sites in which ORMAT has developed a geothermal plant do not include similar high resource values as this proposed site. ORMAT is proposing to develop an industrial scale geothermal plant less than one-half mile from a community and adjacent to nationally important resource values. According to the EA, exploration alone would occur at approximately 20 well sites for 45 days per well. In total, this is 900 days or two and one-half years of 24-hour seven days-a-week drilling adjacent to important resource values.

Geothermal plants are major developments that significantly affect the area surrounding them and exploration cannot be separated from production nor can the development and its

associated impacts be ignored. For example, the BLM recently issued a decision to expand the San Emidio II North Valley Geothermal Project south of Gerlach. The project will upgrade the current plant and build a new power plant to produce up to 40 megawatts of electricity on 20,400 acres of public land. Construction will include a substation, up to 26 total geothermal production and injection wells, approximately 7.5 miles of aboveground pipelines and an approximately 58-mile long 120-Kilovolt overhead power line originating at the power plant that will terminate at the NV Energy Eagle Substation near Fernley, Nevada. Exploration is the first phase of development and both actions need to be considered in tandem.

**Our Request 1:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, we are requesting an EIS be developed to analyze exploration, pre-production and production and its potential significant impacts to the important resource values in the area.

**Our Request 2:** We are requesting a virtual meeting with ORMAT, along with the appropriate BLM representatives, to ensure all questions are answered regarding this proposed project. We are asking that in this meeting the need for a geothermal plant in an area with important nationally recognized resource values be described. We are also asking ORMAT to describe who exactly will benefit from this proposed geothermal power plant, how much power needs to be generated to make exploration, pre-production, and production worthwhile, and how ORMAT's proposal fits in with the administration's overall renewable energy goals. Additionally, ORMAT needs to respond to previous comments submitted by a coalition of concerned groups regarding the potential impact of this project on the rural economy of Gerlach.

### **3. ORMAT Mitigation Analysis is Faulty**

Throughout the EA, ORMAT claims that mitigation is not needed even though most resources will be impacted, or mitigation only needs to be minimal, because land would be reclaimed and fences removed. When specifically would the land be reclaimed and fences removed? The Wabuska Project in Nevada was built in 1984 and 1987. Has any of the land been reclaimed and fences removed? If not, then it is reasonable to assume that land permitted for geothermal exploration, pre-development, and development will be eliminated from public access and impacted by industrial geothermal development for decades. This means that lands will be impacted for decades to come and therefore a full mitigation analysis needs to be completed.

**Our Request:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all impacts to the important resource values in the area needs to be analyzed.

### **4. ORMAT Cumulative Analysis is Faulty**

The EA states,

“Based on the anticipated potential impacts from Alternative A: Proposed Action...when combined with impacts from past, present, and reasonably foreseeable future actions in the cumulative effects analysis area, no cumulatively significant impacts are anticipated.”

Given the anticipated impacts from two and one-half years of exploration (or if difficulties are encountered during the drilling process it could be extended to a total of 90 days, as stated in the Night Sky Baseline Report Section 3), and the reasonable expectation that an industrial scale geothermal plant could be built, the above conclusion is unreasonable and cannot be justified. In fact, a reasonable and foreseeable future action would include development of an industrial scale geothermal plant and this potential alternative needs to be analyzed.

Additionally, under Past, Present, and Reasonably Foreseeable Future Actions, the possibility of Lands with Wilderness Character and lands included in the Washoe County/Truckee Meadows Public Lands Bill being designated as new Wilderness Areas and additional NCAs with the region adjacent to the ORMAT project (including Wilderness for the Granite Mountains) needs to be analyzed.

**Our Request:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, the cumulative effects analysis needs to be re-written to honestly describe and analyze the potential significant impacts to important resource values from the anticipated development of an industrial scale geothermal plant and additional land designations.

## **5. Impacts to National Conservation Area**

Established on December 21, 2000, the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 was signed into law. This nationally important area provides essential habitat, natural and cultural resources, high value recreation protection and economic stability to the local community of Gerlach.

According to the EA,

“The southern border of the NCA is approximately 4 miles north of the AOI (see Figure A-9, Special Designations)” and therefore there would be no impacts from the project.

The fact is there is one primary road into the NCA which would run past this proposed project. Recreational users' experiences would be significantly impacted by viewing an industrial scale geothermal plant in a nationally significant area that currently has limited development. Gerlach is the gateway to the NCA and any additional development would significantly diminish the values for which Congress designated the area. In the legislation designating the NCA, Congress outlined their findings for the NCA. These are shown below.

*The Congress finds the following:*

*(1) The areas of northwestern Nevada known as the Black Rock Desert and High Rock Canyon contain and surround the last nationally significant, untouched segments of the*

*historic California emigrant Trails, including wagon ruts, historic inscriptions, and a wilderness landscape largely unchanged since the days of the pioneers.*

*(2) The relative absence of development in the Black Rock Desert and High Rock Canyon areas from emigrant times to the present day offers a unique opportunity to capture the terrain, sights, and conditions of the overland trails as they were experienced by the emigrants and to make available to both present and future generations of Americans the opportunity of experiencing emigrant conditions in an unaltered setting.*

**Our Request:** Deny ORMAT's Operation Plan and any future development because it is clearly not consistent with the intent of conserving, protecting, and enhancing the multiple nationally significant resource values in this region.

## **6. Impacts to Lands with Wilderness Character and Lands to be Included in the Washoe County/Truckee Meadows Public Lands Bill**

The BLM determined in their RMP, that two areas in the Granite Range (Granite Peak unit 42,700 acres and the Buckhorn Peak Unit at 23,400 acres) were found to have wilderness characteristics. None of these acres should be compromised by disturbance from this proposed project. Additionally, Senator Jacky Rosen is working on a Truckee Meadows Public Lands Bill that in its draft form includes the Granite Banjo Proposed Wilderness. It is quite likely that this area will be designated as Wilderness in the next year or two.

According to the EA,

"The 42,700-acre Granite Peak lands with wilderness characteristics (LWC) area is in the Granite Range; most of the area lies north of the AOI. This LWC area possesses sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. **Approximately 275 acres of the LWC area's southern portion overlap with the AOI** (Figure A-9, Special Designations, in Appendix A). This represents less than 0.01 percent of the entire LWC area. The Winnemucca District RMP Record of Decision allows for multiple-use and sustained-yield objectives in areas identified as having LWC (see Action LWC 1.1 in BLM 2015a, p. 2-45) with appropriate mitigations applied, if needed, to protect LWC criteria." It further states, "Alternative A would not have direct effects on the Granite Peak LWC area because proposed project elements would be outside the area. **Minor, indirect effects would occur because proposed project elements would be visible from portions of the LWC area. This would be on the steeply sloping southeast-facing flank of the Granite Range above the AOI, where proposed project elements would be located within approximately 0.1 mile of the LWC area. The proximity and visibility of proposed project elements would reduce opportunities and feelings of solitude or primitive and unconfined recreation for visitors in the LWC area.** This effect would be minor because numerous nearby developed areas are already visible from this portion of the



LWC area, including traffic on CR-34 and SR-447, gravel pits, and other municipal and commercial developments around Gerlach. As a result, opportunities and feelings of solitude or primitive and unconfined recreation are already low.”

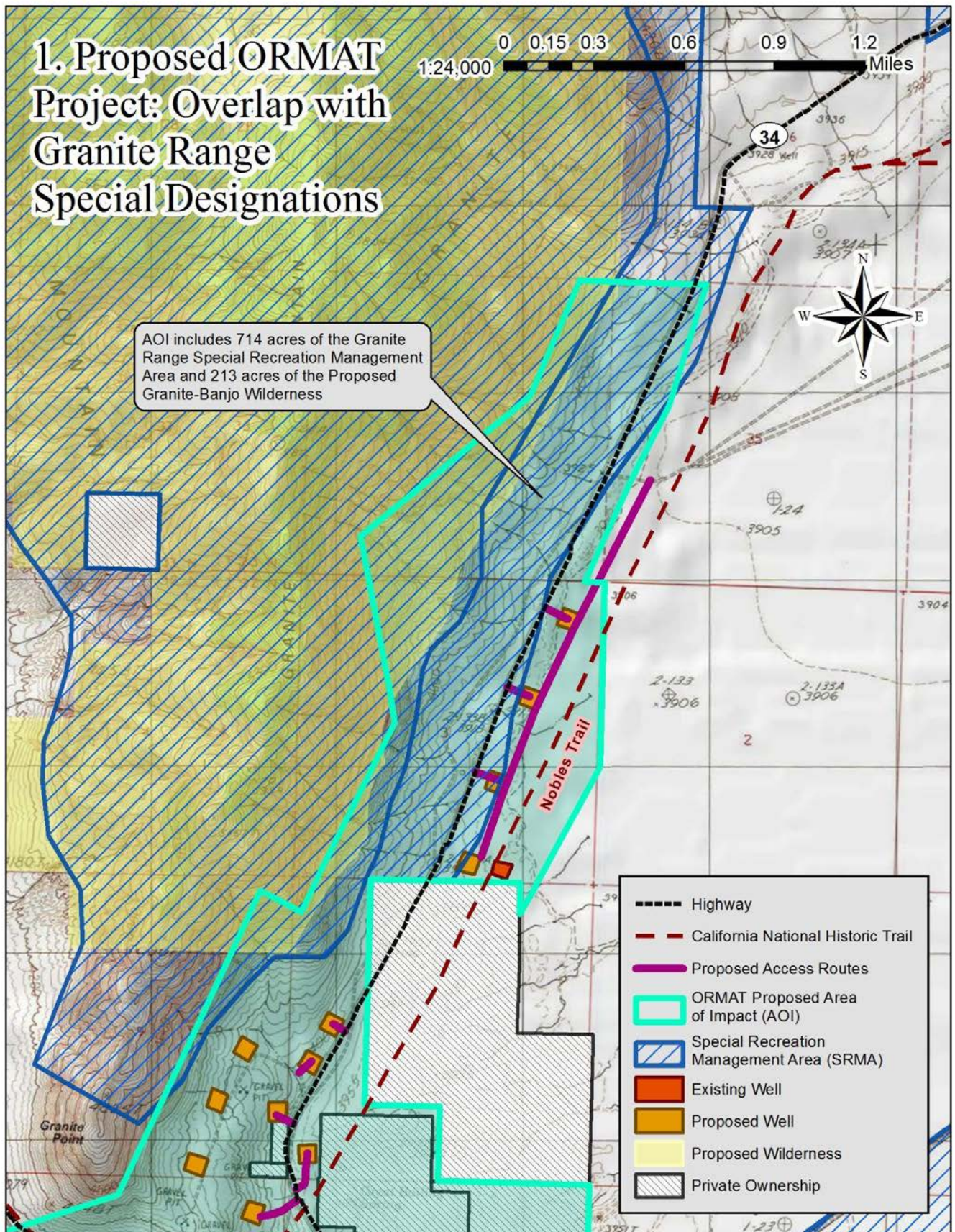
The EA also states,

**“Anticipated changes in ALAN, radiance, and sky glow would have temporary effects on the Granite Peak LWC area.** This is because light generated by drilling would be discernible from portions of the LWC area. This would be particularly true on the steeply sloping southeast-facing flank of the Granite Range above the AOI, where proposed project elements would be located within approximately 0.1 mile of the LWC area. Viewers in this area would experience reduced opportunities and feelings of solitude or primitive and unconfined recreation. This effect would be minor for several reasons. First, under a worst-case scenario, which assumes 1.5 times the amount of expected lighting would be produced, the radiance of the drill rig would increase to a level equivalent to the observed radiance of Gerlach (BLM 2022b, p. 3-4); actual lighting produced would be lower, and measures to reduce the amount of light produced would be in effect. Numerous sources of nearby ALAN are present in this area, primarily from Gerlach and Empire. As a result, night sky conditions and associated opportunities and feelings of solitude or primitive and unconfined recreation are already low in this area. Finally, effects would be temporary, lasting the duration of construction. In other portions of the LWC area farther from drilling, effects would be negligible. This is because from the perspective of viewers in other portions of the LWC area, the topography would directly obscure drilling in the AOI. Further, since existing ALAN in the region already affects night sky conditions, anticipated changes in conditions would be indistinguishable (BLM 2022b, p. 3-4).”

**Our Request 1:** Deny ORMAT’s Operation Plan and any future development because it is clearly not consistent with the intent of conserving, protecting, and enhancing the multiple nationally significant resource values in this region.

**Our Request 2:** Further, the BLM should not authorize any actions within the Granite LWC or within the boundary of the Granite Banjo Proposed Wilderness (See Map 1).







## 7. Impacts to High Value Recreation

The Project overlaps a significant portion of the Granite Foothills Recreation Management Zone. The RMZ plan recognizes that *“national or regional visitors and constituents value the surrounding public lands as a recreation/tourism opportunity.”* This plan also 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.”*** This means that any exploration or geothermal development is incompatible with the plan direction.

The 2015 Resource Management Plan for the Winnemucca District Planning Area also identifies *“a site of ‘Americana Art’ known as ‘Doobie Lane’ or Guru Road,”* which is entirely within the proposed footprint of the Proposed Gerlach Geothermal Development Project. This area is within the Granite Range SRMA, Granite Foothills Zone. BLM has granted a right of way over Guru to protect this unique cultural feature of great importance to Gerlach. It should remain protected from development and disturbance.

At the Washoe County permit administration meeting on July 19, 2022 ORMAT stated that there would be “no disturbance to Guru Road.” No exploration or development should take place in or near these historic sites.

According to the EA,

**“Alternative A would temporarily increase the amount of equipment, project traffic, and ground disturbance visible from the Granite Range SRMA. Alternative A also would permanently increase the amount of development visible from this area in the form of well pads and access roads.** However, numerous developed areas in the AOI are already visible from the SRMA, such as traffic on CR-34 and SR-447, gravel pits, and other municipal and commercial developments around Gerlach. As such, effects on the recreation setting would be minor. **Access to recreation opportunities may be temporarily restricted in the immediate work area during construction, displacing visitors from localized areas.** However, numerous other access points to the same opportunities would remain open during construction. **Visitors would be permanently displaced from fenced well pads,** but this would not restrict access to recreation opportunities in the vicinity. As such, effects from restricting or displacing recreation opportunities would be minor.”

Further, the EA states,

**“There would be no mitigation measures for recreation.**

According to our analysis, approximately 714 acres of the Granite Range Special Recreation Management Area would be impacted along with a dispersed camping area that is used for safety when the playa is wet. Mitigation measures must be developed and implemented for all resources impacted by the project including high value recreation. Clearly, restricting access along with increased equipment, project traffic, and ground disturbance are impacts that need to be ameliorated.

Drill pads, drill roads and the potential industrial geothermal plant are not minor visual elements and these will have a major impact on recreationists enjoyment of the area particularly with these developments being on the very outskirts of a gateway community.

**Our Request:** No exploration or development should occur within the Granite Range Special Recreation Management Area, including the Granite or the Granite Foothills Recreation Management Zones.

**Our Request:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all impacts to high value recreation in the area needs to be analyzed.

## 8. Impacts to Cultural Resources

Tribal Consultation for this project appears to have been woefully inadequate. Sending two separate letters, one on November 9, 2021 and the second February 7, 2022, does not meet the spirit of meaningful Tribal Consultation.

On September 13, 2022, the Department of the Interior released new guidance to improve federal stewardship of public lands, waters and wildlife by strengthening the role of Tribal governments in federal land management. New guidance from the [Bureau of Land Management \(BLM\)](#), (Permanent Instruction Memorandum No. 2022-011) provides direction for implementing provisions of [Joint Secretarial Order 3403](#) – signed by the Secretaries of the Interior and Agriculture during the 2021 White House Tribal Nations Summit – which outlines how the two Departments will strengthen Tribal co-stewardship efforts.

Additionally, the assertion that impacts to the Nobles Trail section of the California National Historic Trail are minor and limited to the duration of two and one-half years of exploration is highly concerning. Obviously, ORMAT would not be drilling up to 21 wells if they did not believe there is a geothermal source and clearly the 2.1 acre well pads, new access roads, and fencing are not being proposed with the idea that these would be removed after exploration is complete. In fact, according to our analysis, 2.5 miles of the California National Historic Trail occur within the AOI and 10 miles of National Historic Trail occur within the two mile buffer.

The EA states,

“Concerning the Nobles Route of the California NHT and the Gerlach Cemetery, KEC concludes that **“Effects of the planned exploration project will be temporary and limited to the duration of the temporary operations. While temporary changes in the visual baseline conditions of the area will occur, these will be resolved upon completion of the exploration project.** This assessment indicates no historic properties would be affected.”

“A visual effects analysis was done at KOPs in and around the indirect APE, including at the Nobles Trail section of the California NHT, the Gerlach Cemetery, and the Gerlach Water Tower. **There is the potential for temporary, indirect, adverse effects on the setting, feeling, and association of eligible or unevaluated sites, including the NHT and Gerlach Cemetery. Temporary adverse effects would occur from the visual and noise intrusion of construction activity during well drilling, which typically would last up to 45 days per well. While temporary changes in the visual and noise baseline conditions of the area would occur, these would be resolved upon completion of the exploration project.**

The KOP assessment also found that effects on the Gerlach Water Tower would be similarly limited since the view of the project from the water tower is already obstructed by Gerlach’s existing built environment. There is also the potential for similar temporary, indirect, adverse effects on Great Boiling Spring. The KOP analysis was not completed for this site because it is on a private surface. The 2006 Final Ethnographic Assessment (Bengston 2006) identified Great Boiling Spring as a potential ritual site for Northern Paiutes, but no tribes have offered any further information on Great Boiling Spring as part of the consultation process. **There is also the potential for temporary, indirect, adverse effects on the setting, feeling, and association from anticipated changes in the ALAN, radiance, and sky glow due to nighttime drilling. This is because light generated by drilling would be discernible from eligible and unevaluated sites.** This effect would be minor for several reasons. First, under a worst-case scenario, which assumes 1.5 times the amount of expected lighting would be produced, the radiance of the drill rig would increase to a level equivalent to the observed radiance of Gerlach (BLM 2022b, p. 3-4). Actual lighting produced would be lower, and measures to reduce the amount of light produced would be in effect. Numerous sources of nearby ALAN are present in this area, primarily from Gerlach and Empire. As a result, night sky conditions and the associated setting, feeling, and association are already compromised in this area. Finally, effects would be temporary, lasting the duration of construction.”

As stated under #1 above, not every use should occur on every acre of public land. The Winnemucca District Resource Management Plan Objective D-MR 4 (BLM 2015a, p. 2-172), states, in part, that “Lands within the [Winnemucca District] would be open to geothermal and oil and gas leasing and development **except where incompatible with important resource values.**”

As stated under #2 above, all other sites in which ORMAT has developed a geothermal plant do not include similar high resource values as this proposed site. ORMAT is proposing to develop an industrial scale geothermal plant less than one-half mile from a community and adjacent to important resource values. Geothermal plants are major developments that significantly affect the area surrounding them and exploration cannot be separated from production nor can the development and its associated impacts be ignored. Short and long term impacts to the Nobles Route of the National Historic Trail are unacceptable.

**Our Request 1:** Deny ORMAT's Operation Plan and any future development because it is clearly not consistent with the intent of conserving, protecting, and enhancing the multiple cultural resource values in this region.

**Our Request 2:** If the Operation Plan is not denied, we are requesting an EIS be developed to analyze exploration, pre-production and production and its potential significant impacts to the important historic resource values in the area including the National Historic Trail.

## 9. Impacts to Visual Resources

According to the EA,

Public lands in the project area are classified as VRM II and III. **The objective of VRM Class II is to retain the landscape's existing character. The level of change to the characteristic landscape should be low.** Management activities may be seen, but they should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the characteristic landscape's predominant natural features. **The objective of VRM Class III is to partially retain the landscape's existing character. The level of change to the characteristic landscape should be moderate.** Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the characteristic landscape's predominant natural features.

**"Proposed project elements and equipment would be noticeable from project KOPs; however, they would not dominate the view of the casual observer** (see a map of KOPs in Figure A-10 and visual contrast rating worksheets and photographs from KOPs in Appendix D). **The proposed project elements would repeat the basic elements present in the landscape character; this is because there are already nonnatural lines and forms, namely CR-34 and SR-447, dirt roads, fences, power lines, and other municipal and commercial developments in and around Gerlach. Access roads, wellheads, and well pad fences would be visible to the casual observer, but they would be below the horizon line and would not attract attention.** Wellheads would be painted a color consistent with BLM visual color guidelines; the color would blend with the surrounding landscape to minimize visibility...Following construction, areas of disturbed land no longer required for operations would be reclaimed, and fences would be removed. Taking these measures into account, the degree of contrast and modification imposed on the landscape by the project would be minor."

During the Washoe County pre-scoping meeting on July 19, 2022, ORMAT was asked, "...Will ORMAT commit that any geothermal plant and pipelines constructed will be outside of the viewshed of Gerlach?" "No," laughed Scott Nichols.



The fact is the Key Observation Points display little development; only a road, a powerline, a vault toilet and one shaded picnic table, and two water tanks. Overall the landscape does not display nonnatural lines and forms such as the new dirt roads, fences, well pads, and drilling rigs that are being proposed by ORMAT. Additionally, the mitigation being proposed, painting new wellheads a color consistent with BLM visual color guidelines, does not result in “minor” impacts to the visual resources in the area. VRM Class II and III do not allow for the type of exploration, pre-production, and production ORMAT is proposing. This proposal will substantially affect the viewshed of Gerlach; a gateway to a National Conservation Area with extensive designated Wilderness as well as the proposed Granite Banjo Wilderness. This area has extremely high value recreation and is one of the darkest night sky locations in the nation.

### **Our Request: Deny ORMAT’s Operation Plan.**

#### **10. Impacts to Dark Skies**

Increasingly, dark skies are recognized across the state, nation, and world as an important natural resource needing protection. Here in Nevada, dark sky legislation (SB52) passed in the 2021 Legislative session. The Massacre Rim Dark Sky Sanctuary, approximately 60 miles north of Gerlach, was recently certified by the International Dark Sky Association. Many small towns, including the town of Gerlach, rely on their dark skies to provide a sustainable source of income while protecting wildlife habitat and recreation values.



*Dark Skies over the Granite Range - photo by Bob Wick - Bureau of Land Management*

According to the EA,

**“Gerlach is known as America’s darkest town (Roeder 2017)...While there are no data available to quantify the number of people who visit the area specifically to engage in astrotourism, according to the Nevada Division of Tourism, the percentage of visitors who traveled to northern Nevada for the primary purpose of **outdoor recreation grew from 3.8 percent in 2015 to 8.0 percent in 2019** (Travel Trak America 2019). This growth in outdoor recreation demand highlights the importance of astrotourism and other nature-related tourism for local economies in northern Nevada.”**

The EA also states that,

**“Gerlach is a known astrotourism destination, attracting visitors from outside the region.** The Night Sky Baseline Report (BLM 2022b) analyzes anticipated impacts on astrotourism from ALAN produced during exploration well drilling. Anticipated astrotourism impacts from the project would be negligible. **Under a worst-case scenario, which assumes 1.5 times the amount of expected lighting would be produced, the radiance of the drill rig would increase to about the same level as the baseline observed radiance of Gerlach (BLM 2022b, Section 3.3.1). The modeled changes in sky glow would be observable to those engaged in astrotourism; however, it would be highly unlikely that the changes would be of a magnitude to discourage astrotourism in the region or displace visitors engaged in the activity. Further, impacts would be temporary in nature, lasting for the duration of drilling.** Construction would likely result in short-term, induced economic effects in Gerlach, including from purchasing rental accommodations for workers (should they stay in Gerlach), groceries, and other items. This effect would be temporary, lasting the duration of construction.”

Additionally, the Night Sky Baseline Report also states,

“Section 3. Proposed Night Sky Conditions

### 3.1 PROPOSED PROJECT OVERVIEW

According to the exploration operations plan, Ormat would drill exploration wells using a large rotary drilling rig. The rig would be up to 170 feet tall (see Figure 7 and Appendix D). The estimated drilling time for each well would be 45 days; however, difficulties encountered during the drilling process could extend the drilling period to a total of 90 days. Ormat proposes to operate the drilling rig 24 hours per day. During nighttime drilling, 120-watt fluorescent lighting on the drill rig and 250-watt lighting on the rig floor would illuminate the structure and provide worker safety. Additional ground-based auxiliary lighting is also proposed.

During nighttime operations, Ormat is proposing three portable trailers with pole-mounted light-emitting diode (LED) lights. There would be a total of twelve 320-watt fixtures oriented toward the drill rig and angled at approximately 45 degrees downward. Ormat proposes the total lumens per fixture to be 38,500 for a total light

output of 462,000 lumens from the ground-based lights. The drill rig and ground-based lighting specifications provided by Ormat are in Appendix D. Ormat would only drill one well at a time. Accordingly, it is assumed for the purposes of this report that there would never be more than one drill rig and associated lighting in the AOI at one time.”

While acknowledging the potential significant impacts caused by increased light from the project, ORMAT includes Best Management Practices but does not commit to following or analyzing them. This is unacceptable. The following from the Night Sky Baseline Report must be adopted if the project moves forward. The Night Sky Baseline Report states,

### **“3.4 BEST MANAGEMENT PRACTICES (pg 3-6)**

“Implementing best management practices into lighting and facility design and operation can minimize or avoid light trespass, which results in localized glare and radiance increases, and contributes to reduced sky darkness. Several environmental protection measures identified in the exploration operations plan would minimize the potential night sky impacts discussed in Section 3.3. In addition to the applicant- proposed environmental protection measures, the following best management practices, adapted from the National Park Service and International Dark-Sky Association, and those in Section 5.3.4 in Appendix A, are presented for consideration as opportunities to minimize ALAN from the proposed project:

- Use shielding to contain lighting within the project footprint.
- Apply a shielded light fixture with smaller wattage lights. For example, if LED-configured mobile light plants were used to reduce impacts from lighting, the predicted radiance produced at the drill site would be 5.485 nWcm-2sr-1. This is about half the current radiance from Gerlach.
- Select lamps with warmer colors. Amber-colored lights emit longer wavelengths, which give more protection to the eyes and minimize sky glow.
- Use full cut-off light fixtures that can be adjusted to point directly downward.”

If the Proposed Project Overview is followed without implementation of the BMPs the following worse case scenario would occur in the region. A line-of-sight calculation, based on the earth's curvature, shows fugitive and trespass light is visible from 3 miles away for every 6 feet above the ground a light fixture is placed. Given that rigs are 170 feet tall, at the playa level, the light impacts of “45 degree downward” unshielded lights (which would produce fugitive and trespass light) would be visible for 88 miles, on flat ground. The fugitive and trespass light would be visible for much greater distances if either the rig or the person is above the level of the playa. Based on these same line-of-sight calculations, if the person is not on the level surface of the playa, and instead is utilizing the recreational lands surrounding and above the playa, for every 6 feet in elevation above the playa, they will be impacted by the ORMAT drilling lights for an additional 3 miles.

The distance of these impacts will increase dramatically by atmospheric conditions that increase refraction, produce dust or haze, or produce a cloud layer. The dark sky impacts will differ on each one of these drilling sites depending on where each one of these sites are located (on the

playa surface, or above the playa surface), the height of the drilling rig, and the placement of lights on the rig.

Impacts of ALAN are not limited to direct line of sight to unshielded light sources; in fact the greater impact on dark skies is the cumulative effect of poorly designed industrial lighting as it contributes to light domes or sky glow that can impact areas like the Massacre Rim Dark Sky Sanctuary from over 100 miles away. Although the impact of project ALAN contributions to sky glow is mentioned in the Baseline Report (5.3.4 ALAN Best Management Practices), the report was limited to estimating sky glow to a narrow zenith angle, eg. straight overhead, and cannot provide “useful information on emissions at [zenith angle] 80-90” degrees, from the perspective of a ground-based observer- 5.4 Report Limitations. This section of the report also clearly states “[e]missions in this range [from the perspective of a ground-based observer] can be particularly deleterious to human night vision response, giving the impression of a much brighter sky than is actually present.” Despite the limitations of the Baseline Report to accurately estimate the impacts of sky glow on the experience of the night sky from the ALAN associated with the ORMAT project, section 3.3.1 Astrotourism draws the irrational and unfounded conclusion: “[e]vidence indicates that potential astrotourism impacts from sky glow resulting from the proposed project would be negligible.” The impact of the project’s sky glow on the natural night sky from the perspective of ground-based observers involved in astrotourism throughout the greater resource area must be analyzed and addressed, instead of being dismissed with an unjustified opinion. ORMAT should follow all of the Baseline Report 5.3.4 ALAN Best Management Practices, by quantifying the existing sky glow in the greater region, and monitoring the skyglow throughout the duration of the project. Doubling the sky glow radiance of Gerlach is not an option for this project. The NPS has long running studies and monitoring of the impacts of sky glow on natural night skies. <https://iopscience.iop.org/article/10.1086/512069>

The potential dark sky impacts of this project could impact the single most precious natural resource of this portion of Nevada, the deepest and darkest skies in the contiguous United States. This precious resource will be unduly compromised for residents of this area, recreationists, astronomers, astrophotographers, and wildlife. The BLM has failed to address these impacts or to ensure meaningful mitigation measures would be adopted by Ormat for reducing these impacts. Each and every drilling location will need to have its individual dark sky impacts addressed and mitigated to provide a meaningful environmental impact analysis.

### **Our Request 1: Deny ORMAT’s Operation Plan.**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all impacts to the important resource values in the area including dark skies needs to be analyzed and the Best Management Practices in the Night Sky Baseline Report be adopted and analyzed as mitigation for this project. Mitigation should include a baseline and a long term monitoring process for updating and tracking changes to the sky glow within this greater area.

**Our Request 3:** All mitigation needs to be consistent with International Dark Sky Association (IDA) recommendations for preservation of the night sky through quality lighting policies. Further, we recommend ORMAT continue to work with the NPS to reach the highest standards for reducing impacts of ALAN on resources associated with dark skies.



**Our Request 4:** Additionally, as part of dark sky mitigation, we are requesting ORMAT purchase and install IDA compliant lighting consistent with the International Dark Sky Community Program Guidelines, dated June 2018 for the town of Gerlach. This is necessary to offset light pollution caused from ORMAT's proposed operations for two and one-half years of exploration plus pre-development, and development. [International Dark Sky Community Program Guidelines](#)

IDA's [Fixture Seal of Approval program](#) certifies outdoor lighting fixtures as being Dark Sky Friendly, meaning that they minimize glare while reducing light trespass and skyglow.

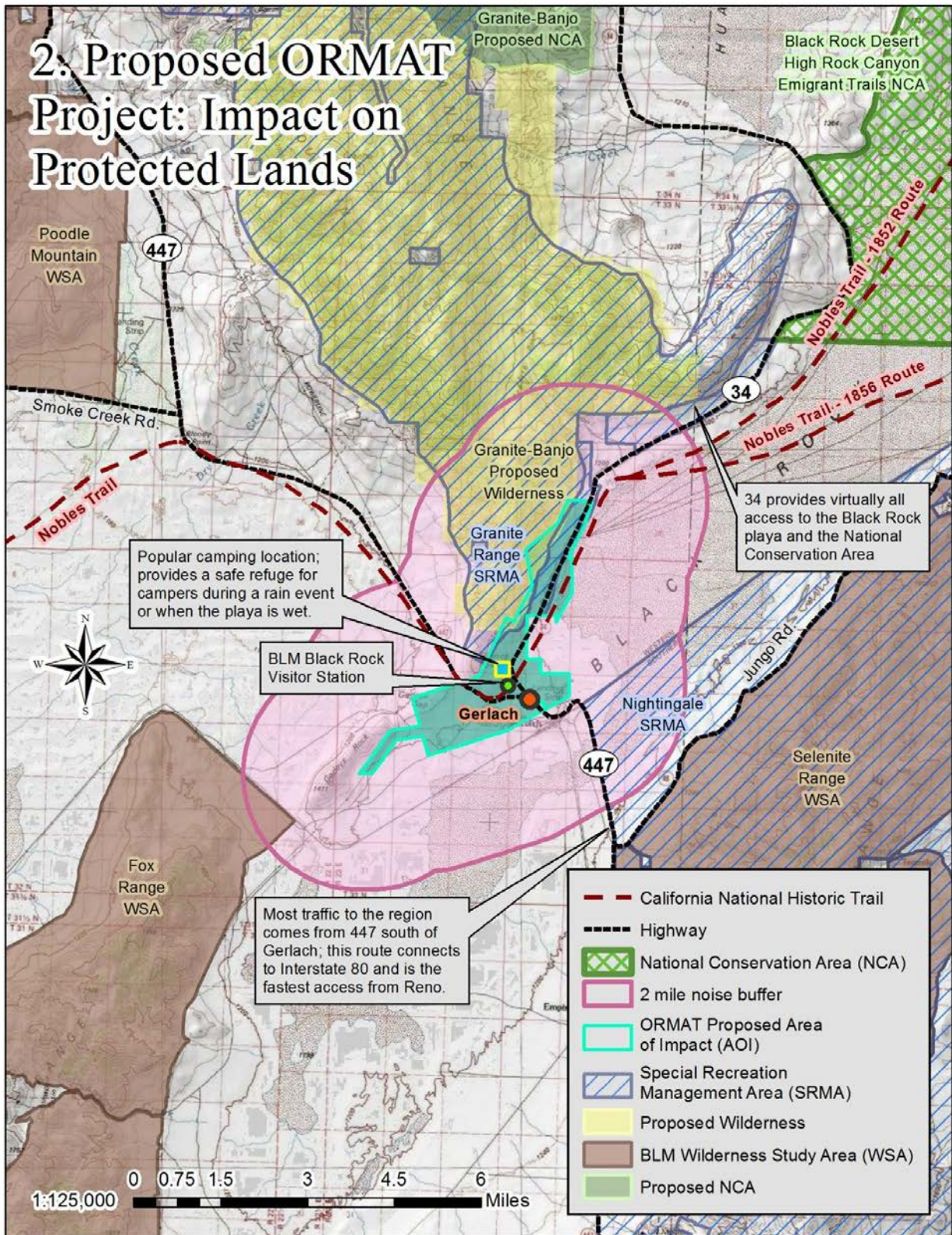
All products approved in the program are required to be fully shielded and to minimize the amount of blue light in the nighttime environment. To learn more about good outdoor lighting, visit [Lighting Basics page](#).

**Our Request 5:** No drilling should occur between the hours of 10:00 PM and 7:00 AM and all lights around the drill rigs should be extinguished. This will significantly lessen the impacts to Gerlach's dark skies.

## **11. Increased Noise Pollution**

With the AOI located within a mile of Gerlach residences, it is critical that a noise analysis be completed through the NEPA process to identify the impacts to residents of noise from the Project, and the efficacy of Ormat's suggested one rock muffler per drilling rig and a muffler for each well pad. Ambient sound levels measured at Transfer Station Road in the AOI, as part of the Burning Man Event Special Recreation Permit Final Environmental Impact Statement (BLM 2019b) between August 23 and 26, 2017, outside of the event are inadequate. Noise in and around the AOI has the potential to affect "individuals partaking in outdoor recreation, such as camping, visiting cultural sites and hot springs, retracing historic trails, and stargazing, where serenity and quiet are often desired" as stated in the EA. The EA also notes that noise can affect the community of Gerlach and wildlife. Multiple important resource values with special designations, such as NCAs, designated wilderness areas, and WSAs occur within two miles of the project area. Users of these areas will be affected by noise (See Map 2).

## 2. Proposed ORMAT Project: Impact on Protected Lands







*Proposed Granite Banjo Wilderness above the town of Gerlach Photo by Kirk Peterson*

The EA states,

“Since noise from stationary sources lessens at a rate of approximately 6 dBA per doubling of distance, **noise receptors occurring 1 to 2 miles outside the project area (approximately 5,300–10,500 feet away) would likely experience noise levels that are comparable with current conditions** (see Section 3.2.10, Noise)...**All action alternatives would comply with the BLM regulation that mandates that noise at 0.5 miles—or at the lease boundary, if closer—from a major geothermal operation should not exceed 65 dBA (43 CFR 3200.4(b)).**”

“Construction noise could temporarily impact the recreation setting. **Primarily, noise could affect experiences of isolation and remoteness, reducing the potential for positive recreation outcomes. The greatest potential for this effect would be in the Granite Peak LWC area and the Granite Range SRMA.** However, effects in these areas would be minor for several reasons. First, noise effects would be mostly limited to the portions of these areas on the steeply sloping southeast-facing flank of the Granite Range above the AOI. Recreation opportunities in this area are limited due to the rugged, steep terrain and lack of access roads, trails, or other facilities. Further, this area is already subject to noise effects from traffic on CR-34, vehicles driving on the Black Rock Desert playa, operations in the existing gravel pits in the AOI, and other noise

emanating from day-to-day activities in Gerlach. As a result, the potential for experiences of isolation and remoteness are lower in this area than elsewhere in the LWC area and SRMA. Any noise effects in these areas would also be temporary, lasting the duration of construction...Construction noise could temporarily impact the naturalness character in portions of the Granite Peak LWC area. As described above in Recreation, this effect would be most pronounced on the steeply sloping southeast-facing flank of the Granite Range above the AOI. **The naturalness character in this area is already degraded by noise effects from traffic on CR-34, vehicles driving on the Black Rock Desert playa, operations in the existing gravel pits in the AOI, and other noise emanating from day-to-day activities in Gerlach. As a result of these existing conditions, the addition of temporary construction noise would be a minor effect. ”**

The assertion that the addition of temporary construction noise would be a minor effect is false at best. Additionally, stating that the area is already degraded by noise effects from traffic on the one county road in the remote area of northern Nevada, other vehicles, the existing gravel pit, and the handful of residents of the town of Gerlach is ridiculous. A major geothermal operation is allowed to emit 65 decibels of noise at .5 miles. This is comparable to a congested urban area in the daytime or a vacuum cleaner at 10 feet at 70 decibels or a commercial area with heavy traffic or normal speech at 3 feet at 60 decibels.

Further, the noise effects would not be temporary as it is reasonable to assume that development would follow exploration. Any development in this isolated region is not in keeping with the area's isolation and remoteness. Because of the potential significant noise impacts to the residents of Gerlach along with impacts to recreationists and wildlife, a full noise analysis needs to be completed. ORMAT needs to complete a new noise analysis that looks at the baseline sound levels outside of the Burning Man event and representative of the ambient sound level of the region for the majority of the year. The analysis also needs to specifically look at the effects of project noise sources to the town of Gerlach and the project area, including the two mile buffer from the proposed site. Simply listing anticipated noise levels of equipment and vehicles is not acceptable.

**Our Request 1: Deny ORMAT's Operation Plan.**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all impacts to the important resource values in the area including noise needs to be analyzed.

**Our Request 3:** No drilling should occur between the hours of 10:00 PM and 7:00 AM.



## 12. Impacts to the Rural Economy of Gerlach



*Looking into project area - Photo by Kirk Peterson*

During the Washoe County pre-scoping meeting on July 19, 2022, it was stated that there would be “No permanent jobs for exploration drilling. The typical employment for this type of plant is ORMAT employees. There are no anticipated jobs for local people, at least for the temporary drilling.” Will there be jobs for local people during production? Where exactly will people live long term? How specifically will ORMAT contribute to the local economy and ensure their impact is positive?

Previously submitted comments regarding concerns for the economic livelihood for the community of Gerlach were completely ignored. We believe that exploration, and any consequent construction of a geothermal plant, would negatively impact the local economy by the intrusion of additional lighting, noise, workers, impacts to surface springs and groundwater, and consequent reduction of recreational activities. We are asking ORMAT to respond to our concerns rather than ignore them. Our previous comments are listed below.

“From the initial information provided as to the Project, **it appears that economic benefits to the Town of Gerlach and surrounding residents will be minimal, and possibly counterproductive.** While all customers of NV Energy may receive some benefit from additional renewable resources coming on line, that is the extent of the

benefit to the local community. **There is no influx of local jobs, nor any ability to house such workers were there ever to be.**

**Unintended consequences of the Project could also negatively impact businesses and landowners.** Geothermal development in this proposed location has the potential for significant impacts by altering or stopping existing surface springs from functioning. For example, if the Great Boiling Springs, located on private land, reduce or cease functioning, this would adversely impact the Black Rock Mud Company that relies upon its proper function.

Moreover, **Gerlach's economy significantly benefits from the tens of thousands of visitors from around the world who travel to this region year-round to experience the solitude of the vast open spaces and undeveloped vistas present in the Black Rock Desert as well as attend numerous events and pursue a variety of recreation experiences. The location of the Project within this viewshed would negatively impact the experience of these tourists, and thus the vibrant tourism industry of Gerlach."**

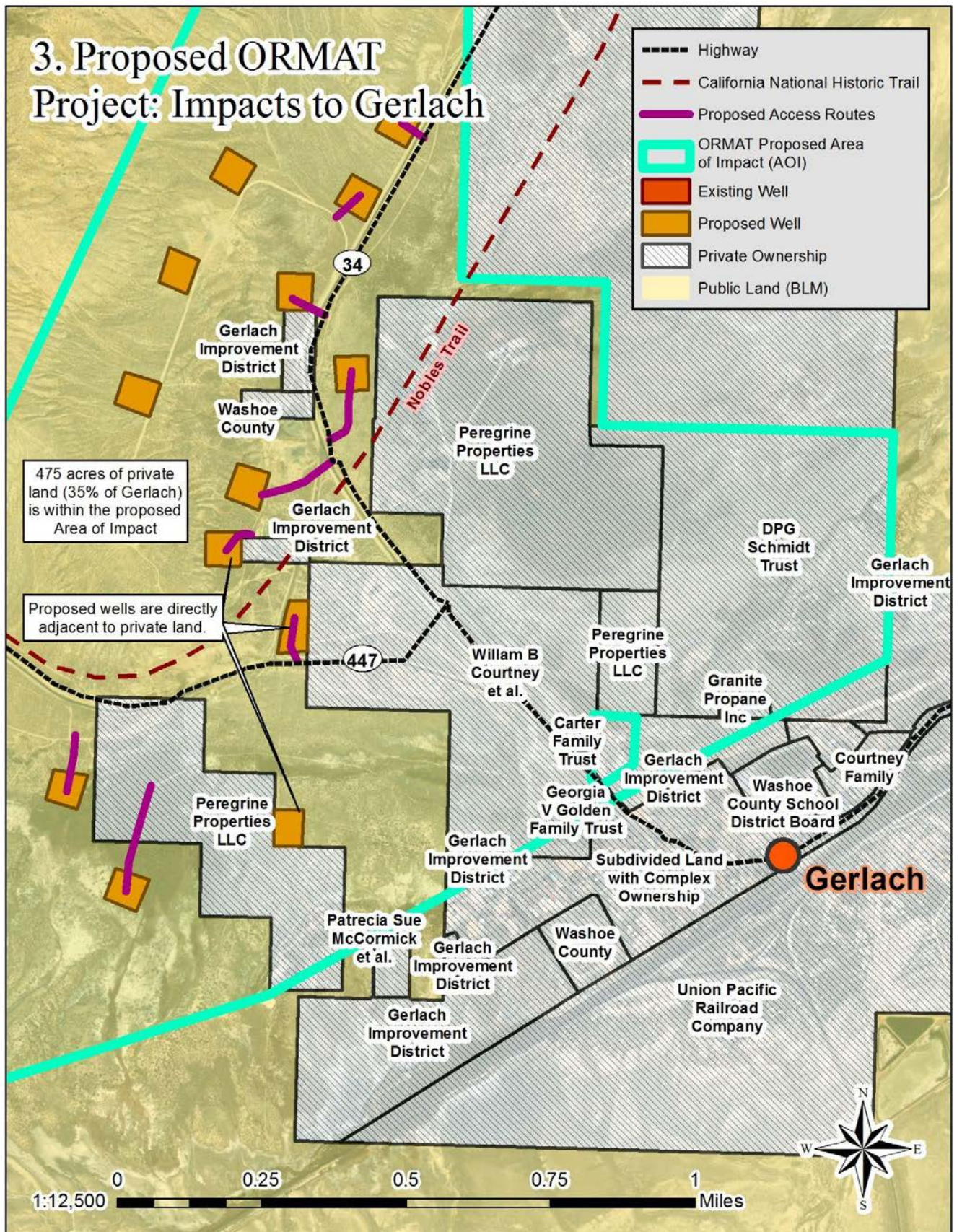
Finally, we have reason to believe that not all landowners in the town of Gerlach potentially affected by this proposed project have been individually contacted. We are concerned that ORMAT and the BLM may not have reached out to all landowners to let them know about their proposal. Has ORMAT in fact ensured that all landowners in the town of Gerlach have been properly notified of this project? Have all the landowners been given information about how to participate in this process? All of them should be on BLM's notification list to receive information about this project, especially since drill pads are located immediately adjacent to people's property. Please See Map 3 for land ownership in the vicinity of the proposed project area.



*Granite Range - Photo by Kirk Peterson*



### 3. Proposed ORMAT Project: Impacts to Gerlach





### **Our Request 1: Deny ORMAT's Operation Plan.**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all concerns and potential impacts to the rural economy of Gerlach need to be analyzed.

**Our Request 3:** Given ORMAT's significant footprint on public lands in Nevada it is reasonable to expect that this international company will become an integral member of the communities they impact. Other large industrial mining companies contribute to Nevada by participating on boards, funding events, and offering scholarships. We are requesting ORMAT not only respond to our concerns previously submitted regarding the rural economy of Gerlach but include reasonable mitigation for supporting the rural economy in the short and long term.

### **13. Impacts to Surface Water**

According to the EA,

**"Nevada's climate is changing. Observed conditions and projected trends include increased average temperatures, punctuated by more severe heat waves, increased drought, reduced winter snowpack and earlier snow melt, more frequent flooding, and increased wildfire driven by more invasive annual grasses and dryer fuels."**

**"If water quality or quantity effects are detected, appropriate measures to mitigate the effects, as determined by Ormat in coordination with the BLM Authorized Officer, would be implemented."**

ORMAT and BLM are required to specifically describe the appropriate mitigation measures they will take if water quality or quantity effects are detected so they can be analyzed in advance. Northern Nevada is undergoing its worst heat wave ever recorded and water is continuing to decline across the state and the west. This operations plan does not take into account the fact that there may not be enough water to support an industrial scale geothermal plant in the future nor does it accurately describe why a scarce resource such as water needs to be redirected to another geothermal plant in Nevada.

### **Our Request 1: Deny ORMAT's Operation Plan**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all concerns and potential impacts to water quality and quantity need to be analyzed.



**Our Request 3:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, we are requesting water be obtained from an established private ranch source and trucked to each drill site, or as a bulk water purchase from the Gerlach General Improvement District (GGID) rather than using water from shallow water wells.

#### **14. Impacts to Groundwater**

Water, particularly groundwater, is a critical resource in the vicinity of Gerlach and the Black Rock Playa. There is a history of drilling projects gone awry. Fly Geyser is a prime example of a well drilling project that got away from the drillers and has been releasing artesian water above the surface for decades. The EA states that the exploratory wells will be cased down to 200 feet to prevent contamination of the shallow aquifer by deeper water of potentially lower quality, yet no evidence is presented that 200 feet is a magic depth where there is an impermeable confining layer that will prevent any possibility of deeper geothermal water from mixing with the shallower groundwater. This glaring deficiency in the EA needs to be addressed.

The EA describes the project as an “exploration project, yet the apparent size of the drilling equipment suggests that the proposed wells will be large enough to serve as production wells if warranted. Unfortunately, there is no mention of casing diameter in the EA so it is impossible to determine if there will be adequate equipment and supplies on hand to deal with a blowout, should that occur. A truckload of barium sulfate will be inadequate to deal with a strong artesian flow in a large bore well. Given the proximity to the community of Gerlach it is essential that planning and equipment and supplies to deal with unexpected events be clearly described in the EA.

The EA describes a very sensitive groundwater dependent ecosystem within the project’s AOI. Section 3.2.1 says there are 436 acres of wetlands within the AOI according to the USFWS wetland mapper. The EA makes the dubious suggestion that in actuality, there are only 15.87 acres of wetlands in the AOI. This assertion contradicts government experts and only serves for the EA to improperly minimize the potential impacts of the project. In reality, USFWS found 127 acres of freshwater emergent wetlands, perhaps the most valuable aquatic habitat type in the Great Basin. In addition to hundreds of other aquatic features. Even if the amount of total wetlands in the AOI is less than the 436 acres, owing to some amount of it reflecting the Black Rock Playa, it is still far more than 15.87 acres.

There are also numerous important springs in the AOI, including Great Boiling Spring, Ditch Spring, Horse (Corral) Spring, Mud Spring, and three unnamed springs. Springs are critical fonts of biodiversity and life in the Great Basin Desert, and their continued proper function is essential to conservation of wildlife in this arid region.

The EA indicates that 20 wells will be drilled, taking 45 days per well. Section 2.1.4 indicates that 35,000 gallons of water per day would be needed for well drilling. Additionally, 6,000 gallons per day would be required for grading, construction, and dust control. Section 3.3.5 indicates

that as much as 1.845 million gallons of water would be consumed per well drilled, or 6.8 acre feet. With the EA authorizing as many as 20 wells, this yields a total water consumption potential of 36.9 million gallons or 136 acre-feet.

The EA fails to adequately disclose and analyze the plan for procuring 136 acre-feet of water for drilling. If the water is to be produced on-site from shallow alluvial aquifer wells, as the EA says in Section 2.1.4, then the EA must do a more thorough job of analyzing the impacts of such withdrawals. The EA fails to disclose exactly where such wells would be drilled and how the water would be transported from the wells to the drill sites. Additionally, the EA fails to adequately analyze the environmental consequences of pumping from these new wells. While the EA acknowledges there could be impacts to water rights holders, wetlands, or other surface water resources, it does not specify how or where such impacts would occur or how the included monitoring plan would mitigate such impacts. Monitoring does not equate to mitigation.

The EA also plans for significant withdrawals from the deeper geothermal reservoir. The EA authorizes 1.5 million gallons of pumping per well in a short term well test, and 15 million gallons of pumping per well in a long term well test. At 20 wells that is as much as 330 million gallons of water, or some 1,000 acre-feet. The EA dubiously states in Section 3.3.5 that there will be no impacts to surface water resources from this pumping, stating that “there is little to no mixing of the geothermal reservoir and the shallow groundwater reservoir.”

This is extremely unlikely, as evidenced by the thermal features present within the AOI. Great Boiling Spring is so called because it is a thermal feature, almost certainly discharging water from the same aquifer that Ormat is proposed to tap in this geothermal project. In the conceptual hydrologic model presented attached to the EA, Stantec makes the unlikely assertion that thermal springs such as Great Boiling Spring are simply sourced from the alluvial aquifer. It seems extremely unlikely that alluvial aquifer-sourced springs, traveling just a few miles from off the Granite Range, would somehow heat to 200°F. The connection between the geothermal aquifer and the surface water features is apparent and obvious. The idea that significant pumping and reinjection could happen in this aquifer and *not* affect springs discharging from the same aquifer strains credulity.

Indeed, there is a long history of pumping and reinjection of geothermal fluids affect adjacent surficial thermal water features. The US Fish and Wildlife Service recently gave emergency Endangered Species Act listing to the Dixie Valley toad, reflecting the dire threat posed to it by the Dixie Meadows Geothermal Project (87 F.R. 20336). The Service’s analysis of the threats faced by the toad states, “Changes associated with surface expression of thermal waters from geothermal production are common and are expected.” The Service cites numerous peer-reviewed studies demonstrating that geothermal energy production will impact adjacent surficial thermal water features.

While the proposed action is not a full production facility, there can be impacts to adjacent surficial thermal water features from exploration as well. During a long-term pump test at Dixie Meadows, changes in surficial water features were observed. In the Aquatic Resources Monitoring and Mitigation Plan (ARMMP) accompanying the revised EA for the Dixie Meadows

Geothermal Project released on January 13, 2021

([https://eplanning.blm.gov/public\\_projects/75996/200167265/20032780/250038979/Dixie%20Meadows\\_EA\\_Appendix\\_H-ARMMP\\_508.pdf](https://eplanning.blm.gov/public_projects/75996/200167265/20032780/250038979/Dixie%20Meadows_EA_Appendix_H-ARMMP_508.pdf)), McGinley and Associates describe the effects of a pump test conducted at Dixie Meadows during geothermal exploration. They conclude that temperature and water level changes at monitoring locations including springs in Dixie Meadows were the result of their pump test. The Nevada Department of Wildlife also confirmed this in their comment letters on the draft EA (attached, page 5). While the results of the pump test were actually excised from the ARMMP in the Final EA for Dixie Meadows, nonetheless the data show that changes to adjacent surficial thermal water features are entirely possible during geothermal well tests. BLM failed to disclose and analyze the impacts of the EA authorizing Ormat to pump 1,000 acre feet of water during the well tests.

The EA also fails to adequately describe the planned mitigation measures for impacts to surface water features. The EA relies heavily on a proposed surface water monitoring plan. This monitoring plan is clearly inadequate, mandating only quarterly monitoring of surface waters. The effects on surface water monitoring points of the pump test at Dixie Meadows were seen in direct temporal proximity to the pumping, and monitoring was conducted real time. If monitoring of surface water resources in the AOI of this project is only conducted quarterly, it is possible that impacts to surface water resources will go undetected. The monitoring plan also does not cover the most important and significant springs in the AOI - the privately held named springs such as Great Boiling Spring. These springs are what create the significant wetland habitat in and adjacent to the AOI, and it is their discharge levels that are most essential to maintain the value of these habitats. Without monitoring these privately held resources, it will be impossible for Ormat and the public to understand and avoid impacts from the pump tests. Thus the monitoring plan is inadequate to fully capture the impacts to surface water resources from the project.

Additionally, the mitigation plan for impacts to surface water resources is completely insufficient. The EA does not detail what the response would be if monitoring detects changes to surface water features. Section 3.3.5 of the EA simply says, "If water quality or quantity effects were detected, appropriate measures to mitigate effects, as determined by Ormat in coordination with the BLM Authorized Officer, would be implemented." This is not a plan to mitigate impacts to surface water resources, rather it is a plan to make a plan.

Where an agency relies on mitigation measures to avoid preparing an EIS, NEPA requires "analytical data to support the proposed mitigation measures." *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998), *overruled on other grounds*, *Lands Council v. McNair*, 494 F.3d 771 (9th Cir. 2007). The proposed mitigation plan must be carefully considered, based on scientific studies, and designed to protect against significant environmental harm. *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1332-33 (9th Cir. 1992). An agency's analysis should focus on the effectiveness of any proposed mitigation measures. *Western Watersheds Project v. Salazar*, 993 F. Supp. 2d 1126, 1139 (C.D. Cal. 2012), *aff'd*, 601 Fed. Appx. 586 (9th Cir. 2015). "An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective." *S. Fork Band Council Of W. Shoshone Of Nev. v. U.S. Dep't of Interior*, 588 F.3d 718, 727 (9th Cir. 2009).

The EA fails to outline what mitigation measures will be taken if there are impacts to surface water features, fails to cite scientific studies as to how such mitigation measures might be effective, and fails to evaluate the effectiveness of the vague and uncertain mitigation plan. There is functionally no plan in place in the relative likelihood that the project causes impacts to surface water features.

### **Our Request 1: Deny ORMAT's Operation Plan**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, mitigation based on exploration, pre-production and production and all concerns and potential impacts to groundwater need to be analyzed.

## **15. Impacts to Wildlife Habitat**

Increased lighting, noise, reduction in water sources, and impacts to habitat are all concerns related to wildlife. The EA continues to state that these are temporary impacts because only exploration is being considered. This argument does not have merit as a reasonable person can assume that if adequate geothermal resources are found, an industrial scale geothermal plant will be built in one of the most isolated regions in our nation.

According to the EA, "A comprehensive review of the effects of ALAN on wildlife species is included in the Night Sky Baseline Report (BLM 2022b, Section 3.3). In summary, ALAN has been shown or is inferred to have a number of effects on wildlife, as described below. Minimizing lighting during drilling operations would minimize, but not eliminate, the potential for these effects." The EA goes on to say that, "**The following effects would be temporary**, lasting the duration of drilling."

The EA also notes the effect noise has on wildlife. The EA states, "Stationary and mobile noise sources could temporarily displace wildlife from suitable habitat in the project area. This could reduce breeding or nesting success, especially if species are displaced during sensitive life cycle periods. Noise could also affect foraging opportunities or effectiveness. Generally, **these effects would last only as long as the duration of the project activity**, including during well pad and road construction, well drilling, and well testing."

"**Temporary effects on water resources** would occur if exploration activities changed the shallow groundwater aquifer's quality or quantity. This could affect the water quality or availability in the hydrologic basins for wildlife and water rights holders."

The EA states that only 52 acres of wildlife habitat would be disturbed but the AOI consists of 2,724 acres. It also alleges that **habitat removal would be temporary** because it would be reclaimed. We are highly concerned about this manner of deduction; if a room is removed from a home but rebuilt in two and one-half years, it is reasonable to assume that the homeowner



believes the room (i.e. habitat) is lost. As stated in the EA, “Temporarily disturbed suitable habitat, even if restored, can take a relatively long time to regain suitability. Also, this does not guarantee species reoccupation...Construction, operation, and maintenance of most of the past, present, and reasonably foreseeable future actions have removed, and will continue to remove, vegetation and disturb soils in the analysis area. This has reduced, and will continue to reduce, habitat quality for general and sensitive plant and wildlife species.”

Also, we noted that the section on bird life states that a Glossy Ibis was observed. While theoretically possible, this is highly unlikely since Glossy Ibis are rarely seen outside of their normal habitat along the Atlantic and Gulf coasts of the US and occasionally inland in the eastern part of the country. More likely, a White Faced Ibis, which is relatively common in this part of the country was observed. The two species are very similar and not easily told apart. We point this out because it calls into question the level of knowledge of both the observer and the supervisor reviewing the avian survey data and hence the reliability of the avian survey data.

The information on how the mud pits will be fenced and netted to prevent bird access is confusing. At one point the EA says that the pits will be fenced on three sides and open on the fourth for access. The pits need to be fenced on all four sides and covered with netting to prevent bird access. A gate for access should be adequate.

#### **Our Request 1: Deny ORMAT's Operation Plan**

**Our Request 2:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, we are requesting an EIS be developed to analyze exploration, pre-production and production and its potential significant impacts to the important resource values including wildlife in the area.

**Our Request 3:** While we are requesting the Operation Plan be denied, should ORMAT and BLM choose to continue with this proposed project, we are requesting that lands, acre for acre, be purchased for mitigation in response to the loss of Greater Sage Grouse Other Habitat Management Area lands.

#### **16. Concerns Regarding Transportation Analysis**

The EA states that any new roads or two tracks that will be used will be graded to a disturbed width of 20 feet and a travel width of 15 feet. Given the large amount of heavy equipment being transported to each drill site this is unrealistic. A large truck is at least 8 feet wide so a 15 foot travel width is a one lane road with no room to pass.

#### **Our Request 1: Deny ORMAT's Operation Plan**

**Our Request 2:** Describe what the actual road widths will be rather than minimize the apparent area of disturbance.

In conclusion, we thank you for the opportunity to provide comments. We look forward to hearing from you regarding the status of our requests. We understand the challenge of providing renewable energy and protecting the remaining pristine wildlands and high value recreation in our great state and we are happy to answer any questions or provide additional data as needed to supplement your decision making. Please feel free to reach out to us if you have any questions regarding our submission.

Sincerely,



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