

**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

**FINDING OF NO SIGNIFICANT IMPACT**

Dixie Meadows Geothermal Utilization Project

DOI-BLM-NV-C010-2016-0014-EA

Based on the analysis of potential environmental impacts contained in the environmental assessment (EA) and considering the significance criteria in 40 Code of Federal Regulations (CFR) 1508.27, I have determined that the action does not constitute a major federal action having a significant effect on the human environment. An environmental impact statement is, therefore, not required.

**RATIONALE:**

**Context:** ORNI 32, LLC (ORNI 32 or Ormat), a subsidiary of Ormat, is proposing the Dixie Meadows Geothermal Utilization Project (project) in Dixie Valley, approximately 43 miles northeast of Fallon in Churchill County, Nevada. The project area of interest (AOI) includes lands within the Dixie Meadows Geothermal Unit that have been shown to have the highest potential for commercial feasibility through previously conducted exploration activities. ORNI 32 proposes to construct up to two geothermal power plants; drill, test, and operate up to 18 geothermal production and injection well sites and 8 core hole sites; construct and operate pipelines to carry geothermal fluid between well fields and the power plants; and construct a 120-kilovolt gen-tie line and associated structures.

Upon implementation of the decision, Ormat may start construction of a power plant, estimated at 12-megawatt output. The 12-megawatt plant will not become operational until after the minimum 12-month baseline data collection period has been successfully adhered to. If the 12-month timeframe is exceeded, the monitoring and reporting requirements must continue until the power plant becomes operational. Furthermore, if adaptive management thresholds have not been achieved or mitigation measures prove insufficient, the plant may not become operational until and unless thresholds are successfully achieved. At the end of the 12-month period, ORNI 32 must prepare a baseline summary report and deliver that report to the Bureau of Land Management (BLM) (and share it with the technical working group) so that the adequacy of the baseline dataset can be evaluated before the project can proceed into energy production phases. A second facility may not be constructed until and unless the initial facility has been in successful operation (all thresholds have not been exceeded) for a minimum of 12 months and the geothermal reservoir data indicates that additional production will be sustainable.

The proposed power plants and related wells and pipelines will be located in the AOI, on geothermal leases that are on public lands administered by the BLM Carson City District, Stillwater Field Office, and a segment of US Department of Navy (Navy) lands that have mineral rights owned by Ormat. The gen-tie line will be located off the leases, but on public lands administered by the BLM Carson City District, Stillwater Field Office, and the BLM Winnemucca District Office, Humboldt River Field Office, and a portion of Navy lands. The

proposed gen-tie will follow the existing Dixie Valley Road, outside of wetlands and riparian areas in Dixie Meadows.

The purpose of the Proposed Action is to allow ORNI 32 to develop the geothermal resources within the Dixie Meadows Geothermal Unit Area on public lands managed by the BLM that are leased to ORNI 32.

The need for the Proposed Action is established by the BLM's responsibility under the Geothermal Steam Act of 1970; the regulations under 43 CFR 3270; the Minerals Leasing Act of 1920, as amended; and Secretarial Order 3285 of March 11, 2009. In addition, states across the western US have adopted renewable portfolio standards that require electricity providers to obtain a certain percentage of power from renewable energy resources. Nevada's renewable portfolio standard requires that the state's utilities procure 50 percent of their energy from renewable sources by 2030. The Proposed Action will help to meet these mid- and long-term regional needs.

The Aquatic Resources Monitoring and Mitigation Plan (ARMMP) establishes an adaptive management approach. It requires continuous monitoring and data collection to support thresholds and mitigation measure implementation and modifications for the life of the Dixie Meadows project. Therefore, this Finding of No Significant Impact (FONSI) can be reached because any time a threshold is exceeded, site specific and/or power plant operations will be suspended until and unless appropriate mitigation through adaptive management is identified, implemented, and shown effective.

**Intensity:** The intensity of effects was considered in terms of the following:

**1. Impacts that may be both beneficial and adverse:** Based on the analysis presented in the EA, no significant impacts were identified—either specific to the project or cumulatively when combined with the reasonably foreseeable future actions. The EA considered both beneficial and adverse impacts of geothermal resource utilization in the project area vicinity. Concerns related to the potential impacts of the proposed geothermal development project on nearby hydrologic and geothermal resources, especially wetlands and riparian areas in the Dixie Meadows, as well as concern over potential impacts on sensitive species, cultural resources, and Native American cultural, religious and spiritual use arose through analysis and consultation.

The ARMMP is considered an adaptive document and as such this ARMMP will use an adaptive management approach to accommodate undefined variances, and address uncertainties in hydrologic and biologic system responses. Using this approach, baseline conditions, thresholds, management actions, and mitigation measures will be adapted throughout the life of the project to respond to the needs of the hydrologic and biologic resources, and to ensure mitigation is appropriate to reduce impacts to hydrologic resources, aquatic habitat, or sensitive species. Any changes or modifications to the ARMMP may only occur after review of the BLM, contractor, ORNI 32, and partner agencies with final approval by the BLM Authorized Officer (AO). Mitigation measures have been developed in the ARMMP to reduce or offset potential impacts and minimize overall impacts.

Through government-to-government consultation with the Fallon Paiute-Shoshone Tribe, the BLM obtained and considered Native American religious values and views of Native American

leaders. The BLM evaluated policies and procedures with the aim of protecting Native American Religious freedom, to refrain from prohibiting access and performance of religious ceremonies, and consulted with the Fallon Paiute-Shoshone Tribe in regard to the Proposed Action. The BLM, in consultation with the Proponent, has redesigned the Project to avoid, lessen or minimize adverse audible or visual impacts and to avoid unnecessary interference with Tribal religious practices.

**2. Public health and safety:** There will be no significant effects on public health and safety. There are no specific issues related to the safety and welfare of the public. The proposed plant locations, well locations, and the transmission line route have very low negative impacts to the health and safety of the public beyond their visual presence.

**3. Unique characteristics of the geographic area:** The Dixie Meadows Geothermal Unit contains the Dixie Meadows, a spring-supported area containing wetlands and riparian areas situated at the base of the Stillwater Range to the west of the Dixie Valley playa. The spring-dependent ecosystems and aquatic habitat in the Dixie Meadows support sensitive wildlife species, including the Dixie Valley toad (*Anaxyrus williamsi*) and springsnails. ORNI 32, in coordination with the BLM and technical working group including the US Fish and Wildlife Service (FWS), Naval Air Station Fallon, US Geological Survey, and the Nevada Department of Wildlife, developed the Dixie Meadows Geothermal Project ARMMP. The goal of the ARMMP is to identify and characterize hydrologic conditions and spring-dependent ecosystems in the Dixie Meadows area; the goal is also to describe the plan that ORNI 32 will implement to monitor and mitigate any potential impacts on those ecosystems associated with geothermal exploration, production, and injection activities. The ARMMP establishes monitoring goals and objectives and sets threshold and trigger values to ensure timely mitigation of any potential impacts on sensitive habitats. Achievement of monitoring goals and objectives is required to ensure project activities do not significantly affect hydrologic resources (such as groundwater, and thermal and cool springs and seeps), aquatic habitat (such as wetlands, meadows, and vegetation), or known sensitive species, including the Dixie Valley toad and springsnails. The ARMMP is an adaptive document and as such will use an adaptive management approach to accommodate undefined variances, and address uncertainties in hydrologic and biologic system responses. Using this approach, baseline conditions, thresholds, management actions, and mitigation measures will be adapted throughout the life of the project to respond to the needs of the hydrologic and biologic resources, and to ensure mitigation actions are appropriate to reduce impacts to hydrologic resources, aquatic habitat, or sensitive species. This FONSI also assumes implementation of geothermal lease stipulations and applicant-committed environmental protection measures. Implementing the ARMMP, lease stipulations, and environmental protection measures together are sufficient to mitigate significant adverse effects to the hydrologic resources, aquatic habitat, and sensitive species known to be present in the Dixie Meadows. As a result, there will be no significant effects on unique characteristics of the area. The geographic area is not located near any park lands, prime farmlands, or wild and scenic rivers.

**4. Degree to which effects are likely to be highly controversial:** The effects on the quality of the human environment may be controversial for its potential impacts to cultural resources, Native American religious expression, hydrologic resources, aquatic habitat, or known sensitive species. The types of effects on the quality of the human environment that can result from

development of geothermal fluid resources are well known and documented in northern Nevada and specifically within the jurisdiction of the Stillwater Field Office. Effects of the Proposed Action are expected to be generally consistent with those of comparable projects in the region, and in other states with similar settings. Further, implementing the adaptive management practices of the ARMMP and the lease stipulations, and applicant-committed environmental protection measures and project redesign, ensures that project activities will not significantly affect cultural resources, Native American religious expression, hydrologic resources, aquatic habitat, or known sensitive species in the Dixie Meadows. The FWS has been petitioned to list the Dixie Valley toad (*Anaxyrus williamsi*) under the Endangered Species Act and must make a 12-month finding on that petition; FWS is presently conducting a status review of the species to determine whether it warrants listing as threatened and endangered species. FWS intends to make the 12-month finding by September 2022. At any time, a threshold in the ARMMP is exceeded, site specific and/or power plant operations will be suspended until appropriate mitigation through adaptive management is identified, implemented, and shown effective.

**5. Degree to which effects are highly uncertain or involve unique or unknown risks:** The Proposed Action may be unique because of its proximity to hydrologic resources, aquatic habitat, or sensitive species. The development of geothermal resources for the production of electricity is specifically regulated and follows accepted standard operating procedures and best management practices. The BLM has previous experience implementing similar actions in similar areas and have found the effects to be reasonably predictable. Monitoring before and during project implementation, as outlined in the ARMMP, will allow the BLM to determine if geothermal exploration, production, or injection activities are impacting hydrologic conditions, spring-dependent ecosystems and habitat, or sensitive species. In this case, appropriate mitigation measures, outlined in the ARMMP, will be implemented so project activities will not significantly affect hydrologic resources, aquatic habitat, or known sensitive species in the Dixie Meadows. Ongoing surveys, resource monitoring, and new scientific data will be incorporated into the project's ARMMP. The ARMMP will use an adaptive management approach to accommodate undefined variances, and address uncertainties in hydrologic and biologic system. Using this approach, baseline conditions, thresholds, management actions, and mitigation measures are adapted throughout the life of the project to respond to the needs of the hydrologic and biologic resources, and to ensure mitigation is appropriate to reduce impacts to hydrologic resources, aquatic habitat, or sensitive species. At any time a threshold in the ARMMP is exceeded, site specific and/or power plant operations will be suspended until and unless appropriate mitigation through adaptive management is identified, implemented, and shown effective.

**6. Consideration of whether the action may establish a precedent for future actions with significant impacts:** The action is not likely to establish a precedent for future actions with significant effects.

**7. Consideration of whether the action is related to other actions with cumulatively significant impacts:** The cumulative impacts are not significant. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. The EA included analysis of the cumulative effects of the reasonably foreseeable future actions identified in Chapter 4 of the EA. The BLM concluded the action will not result in any adverse, significant impacts on the environment.

**8. Scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places:** In accordance with the National Historic Preservation Act and the State Protocol Agreement Between the BLM and the Nevada State Historic Preservation Office, the BLM sought to identify archaeological and ethnographic resources that may be adversely affected by the Project. Toward this end, the BLM implemented identification and review found in 3.12.1 of the EA. Additionally, BLM has coordinated and consulted with Native American tribal representatives throughout the project timeline. Coordination with the Fallon Paiute-Shoshone Tribe began in 2007 and consultation was initiated in 2010. Numerous meetings and field trips to the Dixie Meadows were held between 2010 and 2016, as described in Section 3.13 of the EA.

As a result, the BLM determined that the Project will have an adverse effect on the Dixie Meadows Hot Springs Site, a historic property with traditional religious and cultural significance to the Fallon Paiute-Shoshone Tribe eligible for the National Register of Historic Places under Criterion A.

To resolve the adverse effects to the site, a Memorandum of Agreement [MOA] Among the BLM, the Department of the Navy, the Advisory Council on Historic Preservation and the Nevada State Historic Preservation Officer Regarding the Dixie Meadows Development Project, Churchill County, NV (MOA) was executed.

The action will have no additional significant, adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP. This is because any areas containing cultural resources of significance will be avoided, or the potential for impacts will be mitigated in a manner acceptable to the BLM. If potential historic properties are discovered, or unanticipated effects on historic properties found, the BLM will implement the “Discovery and Unanticipated Effects Plan” included as Attachment B of the MOA.

This FONSI also assumes implementation of geothermal lease stipulations and applicant-committed environmental protection measures. All these together are sufficient to mitigate the adverse effects to the NRHP-eligible and unevaluated resources in the vicinity of the Project Area. As a result, there will be no significant unmitigated effects on cultural or historical resources.


**9. Threatened or endangered species and their critical habitat:** There will be no effects on federally threatened and endangered species or critical habitat, as such species and critical habitat are not present in the project vicinity. Several sensitive species occur in the project area, as listed in Table 17 found in Section 3.8.1 of the EA (Appendix H). By implementing the ARMMP, the BBCS, EPMs (Appendix J), and applicable Greater Sage-Grouse RDFs (Appendix B) any direct or indirect adverse impacts on sensitive species and their habitats will be avoided, minimized, and mitigated as needed. FWS has been petitioned to list the Dixie Valley toad (*Anaxyrus williamsi*) under the Endangered Species Act and must make a 12-month finding on that petition; FWS is presently conducting a status review of the species to determine whether it warrants listing as threatened and endangered species. FWS intends to make the 12-month finding by September 2022.

Ongoing surveys, resource monitoring, and new scientific data will be incorporated into the project’s ARMMP to ensure impacts will not be significant. At any time a threshold in the

ARMMP is exceeded, site specific and/or power plant operations will be suspended until and unless appropriate mitigation through adaptive management is identified, implemented, and shown effective.

**10. Any effects that threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment:** The action will not violate federal, state, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA. The action is consistent with the BLM Carson City Field Office Consolidated Resource Management Plan. The Proposed Action meets the requirements of the National Environmental Policy Act, the Clean Air Act, the Clean Water Act, the Endangered Species Act, and the National Historic Preservation Act.

SIGNATURE OF AUTHORIZED OFFICIAL:



Jake Vialpando  
Stillwater Field Manager  
Carson City District

11-23-2021

Date