

CONDITIONS OF APPROVAL FOR DRILLING

Lease Number: NVN085820X
Well Numbers: OW11, OW12
Location: OW12, T. 30 N., R. 23 E., sec. 33;
OW11, T. 29 N., R. 23 E., sec. 4;
MDM&B.
24K USGS Quad: San Emidio Desert North, NV
Operator: US Geothermal Nevada LLC

A COPY OF THESE CONDITIONS OF APPROVAL MUST BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO ENSURE COMPLIANCE

Agency Contacts

BUREAU OF LAND MANAGEMENT

Nevada State Office
PO Box 12000 (1340 Financial Blvd)
Reno, NV 89520-0006
(775) 861-6400

Petroleum Technician: Lorenzo Trimble
Office: (775) 861-6567
Cell: (775) 224-0267; ltrimble@blm.gov

Petroleum Engineer: John Menghini
Office: (775) 861-6573
Cell: (775) 223-1359; jmenghin@nv.blm.gov

Black Rock Field Office
5100 East Winnemucca Blvd.
Winnemucca, NV 89445
Authorized Officer: Sheila Mallory Acting Field Office Manager
Office Telephone: (775) 623-1578
Cell: (775) 530-4697; Email: smallory@blm.gov

Surface Management Inspection &
Enforcement: Philip Lorimer D'Amo
Office Telephone: (775) 623-1567
Cell: (775) 455-7871; Email: pdamo@blm.gov

NEVADA DIVISION OF MINERALS

Nevada Division of Minerals
400 W. King Street # 106
Carson City, NV 89703
(775) 684-7040

Oil, Gas and Geothermal Program Lead:
Lowell Price
Office: (775) 684-7045
Cell: (775) 721-1744
Fax: (775) 684-7052
lprice@govmail.state.nv.us

If Emergency Occurs and Authorized Officer is not available, please contact:
Philip Lorimer D'Amo by Cell Phone (775) 455-7871

I. PLEASE NOTE:

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR parts 3200, 3260 and 3280), lease/agreement terms, **Geothermal Resource Orders, Notice to Lessee (NTLs), the Approved Plan of Operation, Conditions of Approval** and this permit.

A complete copy of the approved application and these conditions shall be maintained on location during all construction and drilling operations. Deviation from the approved plan **without prior approval is not allowed.**

The operator is fully responsible for the actions of his subcontractors. **It is, therefore, the responsibility of the Operator to ensure that subcontractors fully understand the necessity to comply with applicable laws, regulations, Conditions of Approval, etc. and the consequences associated with non-compliance.**

Operators have the responsibility to assure that activities authorized by this permit are conducted in a manner that complies with other applicable Federal, State, and local laws and regulations.

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

This Geothermal Drilling Permit (GDP) shall be valid for 2 years from the date of approval, provided the lease does not expire. If activities have not commenced by the end of the two year period, the GDP may be returned to the operator without prejudice. Upon written request by the operator, a one-time extension to this time period may be granted by the Authorized Officer. Should the operator still desire to drill the well, a new GDP may be required and submitted to this office.

Failure to comply with the provisions of this permit, including applicable regulations, stipulations, and/or approval conditions, will be considered a violation, subject to the enforcement provisions of 43 CFR Subpart 3277.

Well Completion: A NOI Sundry with the procedure to complete the well shall be submitted and approved prior to commencing completion work if not included in the GDP.

II. Required Notifications:

The operator and contractor shall contact the BLM, Black Rock Field Office (775) 623-1567, at least 48 hours prior to commencement of access and site construction or reclamation activities.

Required Notifications continued:

The operator shall contact the Petroleum Engineering Technician / PET (refer to “Agency Contacts”, page 1) at least 24 hours prior to the following operations:

- **SPUDDING ;**
- **RUNNING AND CEMENTING OF ALL CASING STRINGS;**
- **BLOW OUT PREVENTER (BOPE) TESTS.**

In any emergency situation, post-business-hours authorization may be obtained through the Authorized Officer at the Field Office (refer to “Agency Contacts”, page 1).

III. Conditions of Approval

A. Drilling Plan—The drilling plan of the Geothermal Drilling Permit will be supplemented as follows:

1. If hydrogen sulfide is encountered the amounts must be reported to the BLM.
2. The operator shall obtain and maintain all necessary State of Nevada and local permits applicable to the drilling of this well on site.
3. For Air/Aerated drilling operations, the following equipment shall be utilized: banjo box (or equivalent); a staked down blooie line directed to a blooie pit a minimum of 100 feet downwind of the wellhead.
4. Daily drilling and completion progress reports shall be submitted to the Nevada State Office Petroleum Engineer (**PE**) on a weekly basis (refer to “Agency Contacts”, page 1) and shall include both daily mud reports and directional survey data.

B. Pressure Control

1. The results of the BOPE test shall be reported to the BLM Petroleum Engineer / **PE** or Petroleum Engineering Technician / **PET** (refer to “Agency Contacts”, page 1).
2. All tests are required to be recorded on a calibrated test chart/graph and submitted to the BLM Petroleum Engineer / **PE** or Petroleum Engineering Technician / **PET** (refer to “Agency Contacts”, page 1).
3. The results of the BOPE test shall be reported to the appropriate BLM office.

SAN EMIDIO GEOTHERMAL EXPLORATION PROJECT
Geothermal Drilling Permits
Federal Geothermal Leases NVN-75233, NVN-74196
Exploration Well Numbers OW11, OW12

CONDITIONS OF APPROVAL

1. This approval is contingent upon the lessee/operator being in receipt of and compliance with all appropriate state and local permits.
2. The lessee/operator must abide by the Lease Terms, Lease Stipulations, Conditions of Approval, and all environmental protection measures and mitigation measures included in the Applications for Permits to Drill and Operations Plan.
3. When cultural or paleontological resources, including but not limited to historic ruins, prehistoric artifacts and fossils, are discovered in the performance of the permit, the resources shall be left intact and immediately brought to the attention of the BLM authorized officer.
4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.20). Further, pursuant to 43 CFR 10.4(c) and (d), the lessee/operator shall immediately stop all activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the BLM authorized officer.
5. A careful examination of each area to be disturbed during the breeding season (March 1 to Aug 31), shall be done to assure no nests with eggs or young are present. Surveys shall be conducted by a qualified biologist acceptable to the Bureau of Land Management (BLM) Authorized Officer. If active nests are found, they shall be avoided by an appropriate distance to prevent destruction of the nest and disturbance of the nesting birds until they have fledged. Ground clearing activities outside of the breeding season are not subject to this condition of approval.
6. No hazardous material shall be used during any phase of the operations unless prior approval has been obtained from the BLM authorized officer. All onsite drilling materials and chemicals shall be properly stored to ensure the prevention of spills. No chromate or other heavy metals or environmentally harmful additives will be used..
7. No chemicals, fuels, oils, lubricants, or noxious fluids shall be disposed of at the drill sites, in the reserve or flow pits or down the wells.
8. If any chemicals, fuels, oils, lubricants, and/or noxious fluids are spilled during drilling operations, they shall be cleaned up immediately. The lessee/operator shall have absorbent on site for spill containment. After clean up, the chemicals, fuels, oils, lubricants and/or noxious fluids and any contaminated material shall be removed from the

drill site and disposed of at an approved disposal facility.

9. The lessee/operator shall be responsible for all cost associated with any releases of chemicals and/or subsurface fluids resulting from their operations and practices.
10. Material Safety Data Sheets for all drilling mud components are to be provided to the Hazmat coordinator at the Winnemucca District Office.
11. A copy of the Spill of Discharge Contingency Plan must be maintained at the drill site during active operations.
12. The reserve pits (sumps) shall be fenced on three sides during drilling. The fourth side will be sloped at a 30% incline. Upon completion of the drilling operation, at each individual site, the fourth side should also be fenced until the liquid has evaporated out of the pit and the area has undergone reclamation. All fencing material would be removed from the area during or after reclamation activities. 14 gauge or greater, 4 X 4 or smaller mesh, wire fencing should be used to fence off the reserve pit/sump area. The fence would be a minimum of 6 feet in height. Durable flagging would be placed on all newly constructed fencing and replaced as needed.
13. Flagging shall be placed on all newly erected fencing to increase visibility to wildlife.
14. Portable chemical sanitary facilities shall be available and used by all personnel during periods of well drilling and/or flow testing, and construction. These facilities shall be maintained by a local contractor.
15. All equipment and machinery shall be equipped with spark arresters and mufflers.
16. The lessee/operator shall be responsible for suppression costs for any fire resulting from their operations and practices.
17. Trash and other debris shall be contained onsite and then hauled to an approved landfill. Burial and/or burning onsite shall not be permitted.
18. The lessee/operator shall be responsible for controlling all noxious weeds and other undesirable invading plant species in the disturbed operating and reclaimed area until the revegetation activities have been determined to be successful and accepted by the BLM authorized officer. The lessee/operator shall obtain approval from the BLM authorized officer for any application of herbicide, and the request must include descriptions of the types and quantities. Seed tests of individual species must be submitted prior and approved by the BLM authorized officer unless certified weed free seed is procured for the reclamation of this project. All seed (each individual species) shall be tested for purity, noxious, poisonous and or prohibited plant species, and the test results submitted to and approved by the BLM authorized officer.
19. Once the wells are successfully completed, the drill pad shall be reduced in size to only that necessary for observation operations.

20. If a completed well will be sitting idle for longer than one year, the site shall be scarified and seeded with the BLM recommended seed mix.
21. Upon abandonment of the geothermal wells, the following shall be done:
 - a. The wells shall be plugged to comply with all Federal and State of Nevada regulations.
 - b. All reclamation of disturbed areas shall be completed within one year from the date of proper plugging and abandonment of the well. Any constructed roads, drill pads and reserve pits shall be recontoured to original grade, salvaged topsoil spread on the disturbed area and the site scarified. The disturbed area shall be seeded by hand broadcasting or drilling with the BLM recommended seed mixture. The area shall be raked or dragged to cover the seed if broadcast seeding is used. The BLM Black Rock Field Office shall be notified in writing when reclamation operations commence and are completed.
 - c. Seeding of disturbed areas will be completed using the native seed mixture found in item 22 below. Any variance in the mix shall be coordinated with the BLM Black Rock Field Office.
22. Unoccupied disturbed areas shall be seeded by the applicant as directed by the BLM Winnemucca District Office using the following native seed mixture and application rate. Any variance in the mix shall be coordinated first with the BLM Winnemucca District Office.

BLM-Recommended Seed Mix:

Species	PLS LBS./Acre	Bulk LBS./Acre	PLS/sq. ft.
Sandberg bluegrass	1.90	2.00	38
Fourwing saltbush	3.00	5.00	4
Shadscale	3.00	5.00	4
Indian ricegrass	1.00	1.25	4
Totals	8.90	13.25	50

PLS = Pure Live Seeds

23. The proposed observation well drill sites are adjacent to potential big-horn sheep habitat. Applicant should postpone activities and avoid disturbing sheep if they are present, particularly during the lambing season May 1-June 30.
24. The habitat could support a number of migratory “songbirds” birds as well as Western burrowing owls (*Athen cunicularia hypugaea*). Any proposed exploration construction activities from March 1 through August 31 at any of the proposed well sites would be preceded by appropriate bird surveys. Surveys would be performed using BLM protocols and conducted by a qualified biologist approved by the BLM. Survey results would be forwarded to and approved by the BLM biologist prior to any disturbance activities.

Should active nests be located, disturbance activities would cease until the nests are inactive or appropriate mitigation measures (i.e. buffer zones, delays, etc.) can be established.

25. The same routes used to access well sites should be used throughout the monitoring phase. From March 1 through August 31 and anytime animals will be disturbed by motorized vehicles, wells would be travelled to on foot.
26. A minimum of 12 inches of topsoil shall be salvaged during construction, and stock-piled for use during subsequent reclamation of the disturbed areas.
27. All disturbances will be reclaimed according to BLM performance standards and requirements. Reclamation will be completed at the earliest feasible time, and the operator shall reclaim the area disturbed by taking reasonable measures to prevent or control on-site and off-site damage of the Federal Lands. This includes; measures to control erosion, landslides, and water runoff; measures to isolate, remove, or control toxic materials; Reshaping the area disturbed, application of the topsoil, and re-vegetation of disturbed areas, including scarifying and reseeding overland travel disturbance; and notifying the authorized officer when reclamation has completed so that an inspection of the area can be made.
28. Any areas containing cultural resources of significance shall be avoided or the potential for impacts mitigated in a manner acceptable to the BLM Archaeologist. NGP employees, contractors, and suppliers shall be reminded that all cultural resources are protected and if uncovered shall be left in place and reported to the NGP representative and/or their supervisor.
29. Before using a “tremie line” contact the BLM and explain how you are going to use it on the surface casing.
30. Expansion of the wells would impact a National Register eligible site. The proponent can drill their observation wells, but may not expand the well pad or create any disturbance off or the existing pads.
31. The footprint of the current well pads needs to be documented and on-file with the BLM.
32. Reclamation of the reserve pits/sumps will commence when the observation well is no longer used for monitoring purposes and/or further development is not anticipated.