

**For NDOM Use Only**

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By: JL Date: 7/6/22

STATE OF NEVADA  
 COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
 400 W. King Street, Suite 106  
 Carson City, Nevada 89703  
 (775) 684-7040 | Fax (775) 684-7052  
 http://minerals.nv.gov

Date Received 6/30/2022

API # 27-009-90091

County ESMERALDA

Permit Number 1536

FOR DIVISION USE ONLY

**GEOHERMAL RESOURCE DEVELOPMENT PERMIT APPLICATION**

Name or Corporate/Business Name Fish Lake Geothermal LLC

Nevada SOS Business ID Number NV20201964615

Street Address 245 East Liberty St, Ste 520

City Reno State NV Zip Code 89501

hereby makes application for a geothermal development permit, State of Nevada, Division of Minerals.

(If applicant is a corporation, show state and date of incorporation; if a partnership, list names of partners.)

On file with NDOM.

This application is for a  Domestic well  Commercial well  Industrial well <sup>CPL</sup>

Other, specify:  Observation well  Thermal Gradient well  Re-entry

**Note:** Re-entry includes workover, deepening, or plugging back operations.

Applicant is:  Land Owner  Lease Holder

Well Name: 81A(26-7)-13

Lease Name/No: NVN-009647 Split Estate?  Yes  No

Land Type:  Federal (BLM, USFS, etc.)  Private  State

**Location of Well:**

Domestic: Street: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_

**Commercial and Industrial:**

NE \_\_\_\_\_ ¼ of, NE \_\_\_\_\_ ¼ in Section 13

Township 1S, Range 35E

UTM Northing 4190960 N; UTM Easting 409195 E (NAD83 Datum)

County Esmeralda

(If applicable, give street address below.)

Street: ~ 4 miles east of Hwy 264, ~ 12 miles north of Dyer, NV

City: Dyer, NV

State: Nevada Zip: 89418

Operator's Name: Fish Lake Geothermal LLC  
Address: 245 E. Liberty St., Suite 520  
City, St Zip: Reno, NV 89501

Drilling Contractor's Name: Open Mountain Energy  
Address: 245 E. Liberty St. Suite 520  
City, St Zip: Reno, NV 89501

Rotary Rig Description: 1500 HP. Triple, with Derrick rating of 1,000,000 lbs.

Hole Size: Production: 12 1/4" Casing Size: 13 3/8" Weight/Gauge: 61ppf/ 68 ppf; K-ff BTC.

Estimated Well Head Temperature: 70F static, 375F while flowing.

Size of BOP:  2000 psi  3000 psi  5000 psi

Planned Use of Geothermal Resource:  
To produce geothermal resources for electrical generation.

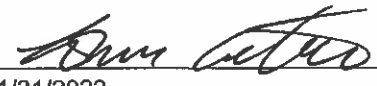
Planned Disposal of Spent Geothermal Fluid:  
To drilling reserve pits on location.

Type and Amount of Bond: \$50,000 statewide BLM bond - Rider to Fish Lake Geothermal LLC  
(Exempt for Domestic Class)

Bond Issued by: Lexon Insurance Company Serial No. Bond #: 1151513  
Geothermal Project Area (if applicable) none established

The Source of the Proposed Geothermal Resource is:  
Metasedimentary basement rocks or pre-cenozoic age.  
(List name of hot spring, geologic formation(s) or other source.)

Total Depth to be drilled: 5,600ft MD (4902ft TVD)  
Drilling will commence on or before: 4/1/2022

Signature of Applicant/Agent:   
Date: 1/31/2022

Please attach a detailed drilling program including the following information:

1. Well design schematic; casing and mud programs; potential water supply; drilling rig to be used and pad layout; blow out prevention equipment diagram and testing program; directional drilling information if applicable; map of location and access roads. Additional information may be required upon review.
2. The required fee per NAC 534A 210 or 534A.212.

CONDITIONS OF PERMIT

1. All permittees must comply with appropriate sections of the Geothermal Rules and Regulations of the Division of Minerals and with applicable rules and regulations of other local, state, and federal agencies.
2. During the drilling of domestic geothermal wells, all water strata above the geothermal horizon being used must be sealed or separated in order to prevent their contents from passing into other strata.
3. All fresh water and water of value or possible value for other beneficial uses must be confined to their respective strata and be adequately protected by methods approved by the Division. Precautions must be taken in drilling and abandoning wells to guard against any loss of fresh water from the strata in which it occurs, and the contamination of any fresh water by objectionable water.
4. The operator of any well must shut off and exclude all water from any geothermal resource-bearing stratum to the satisfaction of the Division.
5. See attached Conditions of Approval.
6. Please send daily drilling reports to : Cortney Luxford.....[cluxford@minerals.nv.gov](mailto:cluxford@minerals.nv.gov)  
and  
Valerie Kneefel .....[vkneefel@minerals.nv.gov](mailto:vkneefel@minerals.nv.gov)
7. Additional Conditions/Comments

A.	
B.	
C.	

This permit does not extend the permittee the right of ingress and egress on public, private or corporate lands.

The issuance of this permit does not waive the requirements that the permit holder obtain other permits from State, Federal, and local agencies.

**PERMIT APPROVAL**

Approved 7/6/2022 with the conditions noted above.  
Date

Permit Number 1536

  
\_\_\_\_\_  
Administrator  
Division of Minerals



**STEVE SISOLAK**  
Governor

STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
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**MICHAEL VISHER**  
Administrator

Las Vegas Office: 375 E. Warm Springs Rd, Ste 205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

## **GEOHERMAL CONDITIONS OF APPROVAL FOR PRODUCTION OR OBSERVATION WELL DRILLING PERMIT**

Submit forms and correspondence to: Nevada Division of Minerals  
400 West King Street  
Suite 106  
Carson City, NV 89703-4212

**Operator: Fish Lake Geothermal, LLC**  
**Lease Name: NVN-009647**  
**Well: 81A(26-7)-13**  
**Permit#: 1536**

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

Communications with the Division shall be directed to:

**Cortney Luxford, Fluid Minerals Program Manager**

Office 775-684-7045      Email [cluxford@minerals.nv.gov](mailto:cluxford@minerals.nv.gov)  
Cell 775-721-1774  
Fax 775-684-7052

**Michael Visher, Division Administrator**

Office 775-684-7044      Email [mvisher@minerals.nv.gov](mailto:mvisher@minerals.nv.gov)  
Cell 775-721-7625  
Fax 775-684-7052

**Dustin Holcomb, Field Specialist - Geologist**

Office 775-684-7046      Email [dholcomb@minerals.nv.gov](mailto:dholcomb@minerals.nv.gov)  
Cell 775-721-2726  
Fax 775-684-7052

Voice mail is available on all cell phones and office phones. Please leave a message if you are unable to speak to someone and we will return your call as quickly as possible.

By provision of the current Memorandum of Understanding between NDOM and BLM, you may contact the following individuals for information or approvals. Approvals under the MOU apply to Fee and Federal lease locations.

4. Well Cellars - For corrosion prevention, the cellar must be engineered, constructed, and/or maintained, to preclude standing water from long-term contact with the casing or wellbore assembly. The top of the surface casing will be a minimum of 24 inches above the cellar floor, or ground level if a cellar is not present. Surface casing will be as high as possible around intermediate casing with excess, tapered cement so water does not pool on top of cement. At the completion of the well, the drilling pad is to be contoured in a manner that drains water away from the cellar, or surface casing if a cellar is not present.
5. Change in Plans - NAC 534A.540 (3) specifies the operator will submit a sundry for permission for a change in construction of the well bore. Verbal permission may be granted to a sundry notice due to an urgency of a particular matter.
1. **NAC 534A.270 Prevention of blowout; testing of equipment for prevention of blowout; submission of test data and supporting information to Division; recording of results in daily drilling log. ([NRS 513.063](#), [534A.090](#))**
  1. An operator shall take all precautions which are necessary to keep wells under control and operating safely at all times. Well control and wellhead assemblies used in any geothermal well must meet the minimum specifications for assemblies prescribed by the American Petroleum Institute, or its successor organization, in the most current edition of Standard 53, "Well Control Equipment Systems for Drilling Wells," or as may be otherwise prescribed by the Administrator. The most current edition is available by mail from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112-5776, by telephone at (800) 854-7179 or at the Internet address <http://global.ihs.com>, for the price of \$160.
  2. Equipment for the prevention of a blowout, capable of shutting in the well during any operation, must be installed on the surface casing and maintained in good operating condition at all times. This equipment must have a rating for pressure greater than the maximum anticipated pressure at the wellhead. Equipment for the prevention of a blowout is required on any well where temperatures may exceed 200°F.
  3. The operator shall submit to the Division the pressure data and supporting information for the equipment for the prevention of a blowout as soon as practicable after the conclusion of the test conducted pursuant to subsection 3. The operator shall record the results of each test in the daily drilling log of the operator.
2. Directional Drilling - NAC 534A.360 requires directional surveys (inclination and azimuth) to be run on any well permitted directionally drilled well. Division conditions of approval further require directional survey (inclination and

sample envelopes. The envelopes are to be placed in order by interval into common drill cutting boxes with approximate dimensions of 3"x5"x20". The envelopes are to be identified by the Division permit number, well name/number as noted on the Geothermal Resource Development Permit Application, and interval.

- c. The samples are to be PROPERLY IDENTIFIED as follows: Each box is to have legibly written on one end the name of the operator and well, as noted on the Geothermal Resource Development Permit Application, Division permit number, total interval (missing intervals noted), and set number.
  - d. NOTE: the samples are not to be sent to the Division of Minerals, rather they should be sent directly to the NBMG. **The samples are due within 30 days of completion of the well.** The operator will be responsible for the cost of any further handling of your samples by the NBMG required to meet the standards set out in this permit condition.
7. Drilling Reports - The Nevada Division of Minerals will be included on the daily morning operational report distribution list during the drilling/completion of the well, starting on spud date and through date of drill rig release, or date of completion rig and/or completion equipment release, whichever occurs last. The operational morning report is to be emailed to Cortney Luxford ([cluxford@minerals.nv.gov](mailto:cluxford@minerals.nv.gov)) and Valerie Kneefel ([vkneefel@minerals.nv.gov](mailto:vkneefel@minerals.nv.gov)). The operational morning reports will include date of report, the spud date, casing information such as size, grade, weight, hole size, setting depth, and as needed, the amount and type of cement used, top of cement, depth of cementing tools, casing test method, as well as lithological descriptions of section drilled; intervals perforated, tested, acidized, fractured and results obtained; and the dates all work was performed.
  8. Well Completion Report - NAC 534.550 (1) (a) requires a well completion form to be filed with the Division of Minerals within 30 days of the cessation of drilling (rig release date).
  9. Logging - NAC 534A.350 requires two copies of all well logs run, including lithological and electrical, neutron-gamma or similar, to be filed with the Division. Computed results in LAS format must also be submitted to the Division for each electric log run. Electronic files are to be provided on CD Rom. These logs are to be submitted within 60 days of the completion of the well.

SUNDRY NOTICES  
OIL, GAS AND GEOTHERMAL

Verbal approval for the following work may be given by the Division:

1. Any emergency work necessary to prevent or control blow outs or other situations with significant potential to result in injury to the crew or damage to the environment or resource.
2. Any kick-offs necessary to by-pass bad hole or fish left in hole.
3. Changes in casing points due to bad hole.
4. Deepening, attempting to encounter resource.
5. Necessary well work to keep geothermal power plants operating.
6. Drilling equipment failure.
7. Squeeze or plug backs to prevent any injected geothermal or oil field waters from contaminating other water zones.

The operator is required to file a written sundry notice with the Division subsequent to verbal approval if the sundry notice has not already been filed. Verbal approvals will not be given for any work that can be planned in advance, such as acidizing, changes in casing points or completion, etc., reentry of a well, remedial work, production or injection testing.