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DEC 07 2010

Division of Minerals

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

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Date Received	_____
API Number	<u>37-001-90449</u>
County	<u>Churchill</u>
Permit Number	<u>1138</u>
FOR DIVISION USE ONLY	

GEOHERMAL RESOURCE DEVELOPMENT PERMIT APPLICATION

Name or Corporate/Business Name

TGP Dixie Development Company, LLC

Street Address 9590 Prototype Court, Suite 200

City Reno State NV Zip Code 89521-5916

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.)

Incorporated in the State of Delaware on November 14, 2008 with TGP Development Company, LLC the sole member.

This application is for a Domestic well Commercial well Industrial well

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: 42(12)-9

Lease Name/No: Dixie Meadows N-60685

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

Location of Well:

Domestic: Street: _____
City: _____ County: _____

Commercial and Industrial: NE $\frac{1}{4}$ of, NW $\frac{1}{4}$ in Section 9,
Township 22N, Range 35E

UTM Datum Used:	<input checked="" type="checkbox"/> NAD83 Datum	<input type="checkbox"/> NAD27 Datum
UTM Northing	<u>4405393.8</u>	N; UTM Easting <u>409994.2</u> E

County Churchill

(If applicable, give street address below.)

Street: _____

City: _____

State: _____ Zip: _____

Operator's Name: TGP Dixie Development Company, LLC
Address: 9590 Prototype Court, Suite 200
City, St Zip: Reno, NV 89521

Drilling Contractor's Name: GeoDrill
Address: 4782 Hwy 111 Brawley
City, St Zip: Brawley, CA 92227

Rotary Rig Description: Rotary

Hole Size: 42-in. Casing Size: 30-in. Weight/Gauge: 0.375-in.

Estimated Well Head Temperature: 350 +/- F

Size of BOP: 2000 psi 3000 psi 5000 psi

Planned Use of Geothermal Resource:
Geothermal electric energy production

Planned Disposal of Spent Geothermal Fluid:
Reserve Pit

Type and Amount of Bond: BLM Statewide Bond @ \$50,000. NDOM bond @ \$75,000.
(Exempt for Domestic Class)

Bond Issued by: Bank of America CD (NDOM) Serial No. BLM 284

The Source of the Proposed Geothermal Resource is:
Dixie Meadows-Comstock

(List name of hot spring, geologic formation(s) or other source.)

Total Depth to be Drilled: 8,500 ft (total vertical depth)

Drilling will Commence On or Before: January 1, 2011

Signature of Applicant/Agent: *Missy Miller*
Date: December 6, 2010

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. Additional Conditions

- A. See attached COA:

- B. _____
- C. _____

PERMIT APPROVAL

Approved 12/6/10 with the conditions noted above.
Date

Permit Number 1188



Administrator
Division of Minerals



JIM GIBBONS
Governor

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400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
<http://minerals.state.nv.us/>

Las Vegas Branch:
2030 E. Flamingo Rd.
Suite #220
Las Vegas, Nevada 89119
(702) 486-4343
Fax (702) 486-4345

ALAN R. COYNER
Administrator

GEOHERMAL CONDITIONS OF APPROVAL FOR DRILLING PERMIT

Submit forms and correspondence to: Nevada Division of Minerals
400 W. King Street, #106
Carson City, NV 89703

Communications with the Division shall be directed to:

Lowell Price, Oil, Gas and Geothermal Program Manager

Office 775-684-7045 Email lprice@govmail.state.nv.us
Cell 775-721-1774
Fax 775-684-7052

Alan Coyner, Division Administrator

Office 775-684-7047 Email acoyner@govmail.state.nv.us
Cell 775-721-0282
Fax 775-684-7052

Voicemail 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.

John Menghini, Fluid Minerals Team, Petroleum Engineer, Reno

Office 775-861-6573 Email john_menghini@blm.gov
Cell 775-223-1359
Fax 775-861-6711

YOUR APPLICATION TO DRILL IS APPROVED
SUBJECT TO THE FOLLOWING PERMIT CONDITIONS

1. **These conditions and the minimum Blow Out Prevention Equipment (BOPE) requirements shall be posted at the well site and read by all company personnel associated with the subject well.**
2. **The operator shall give notification at least 48 hours prior to spudding, drill stem testing, or production or injection testing operations.
24 Hours notification is required prior to the testing of casing or BOPE.
These notifications may be by writing, telephone, fax, or email. Please refer to the contacts list on page one of this notice.**
3. **The cementing mix for the lead cement in this program includes a 10 lb/sk of Spherelite, a spherical additive for reducing density of cement mix. This additive has been found to interfere with normal cement bond logging. The product manufacturer has stated that the good logging may be achieved with a high resolution CBL. This log can be more expensive and difficult to schedule. The operator is here notified that if this mix is used and a CBL is required by the regulatory agencies, then the high resolution logging is required, unless an alternative satisfactory method of confirming cement bonding is approved by the regulatory agencies.**
4. **Change in Plans** - NAC 534A.540 (3) (g) specifies the operator will submit a sundry for permission for change of drilling plans. Verbal permission may be granted. Subsequent sundry form submission is required. Please refer to attached Sundry Notice Requirements.
5. **Surface Casing** - NAC 534A.260 (3) requires that surface casing be sufficient to protect fresh water aquifers and not less than 10% of the proposed total depth or well or minimum 50 feet. The cementing of casing strings shall be done using the standard procedure of inside casing displacement or tab-in methods, unless other methods are approved prior to the cementing procedure.
6. **Cementing** - NAC 534A.260 (3, 4, 5) requires surface and intermediate casing to be cemented to surface. If one hundred percent (100%) returns are not obtained during the cementing operation, or if the cement falls back in the annulus, a top cement job shall be required, unless another cement program has been approved.
7. **BOPE** - After surface casing is set, all wells shall be equipped with at least the minimum required Blow Out Prevention Equipment, unless otherwise approved. NAC 534A.260 (5) requires BOPE to be tested to at least 750 psig for 30 minutes with <10% pressure loss or as approved by the Division. BOPE should be in accordance with good established oil field practice with adequate kill lines and good working order.
8. **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 azimuth) where the inclination exceeds 5 degrees or the projected bottom hole location would be 100 feet or less from the lease boundary, unless otherwise approved by the Division of Minerals.

9. **Cuttings** – *NAC 534A.310 requires samples of cutting shall be collected and submitted to Nevada Bureau of Mines and Geology (NBMG). Division conditions of approval further require a minimum of 30-intervals from surface to the surface casing point and require 10-foot intervals from the surface casing shoe to total depth.*

TWO separate sets of cuttings are to be sent prepaid to the Great Basin Science Sample and Records Library, Nevada Bureau of Mines and Geology, 2175 Raggio Parkway, Reno, Nevada 89512. For more information phone 775-682-8766 or e-mail [nbmg@unr.edu](mailto:nbmng@unr.edu).

EACH SET is to consist of at least 15 milliliters of cuttings per sampling interval that must be cleaned, dried, and placed into 3"x5" 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 (Kettleman number alone with suffice if given), and interval.

The sets 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.

NOTE: the cuttings are not to be sent to the Division of Minerals. The cuttings are due within 15 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.

10. **Drilling Reports** - A minimum of one drilling report shall be submitted to the Division of Minerals each week during drilling operations, notifying the Division of the drilling process. The Division of Minerals requests daily drilling reports. These reports may be submitted via mail, fax or email.
11. **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 completion of well or cessation of drilling.
12. **Logging** - NAC 534A.350 requires two copies of all well logs run, including lithologic and electrical, neutron-gamma or similar, to be filed with the Division. Further condition of approval requires one copy of the each logs computed results electronically, LAS or PDF formats are acceptable. Please provide electronic files on CD Rom. These logs are to be submitted within 60 days of the completion of the well.
13. **Survey Plat** - NAC534A.205 requires a certified plat of the location of the well must be filed with the Division of Minerals within 30 days of completion of the construction of the well.

14. **Emergency Notification** - In the event of a serious accident, blow out, spill or fire, immediately notify the Division of Minerals.
15. **Spills** - Spills or accidental discharge of hydrocarbons in excess of 25 gallons must be reported to the Nevada Division of Environmental Protection at 1-888-331-6337.
16. **Plugging** - NAC 534A.540 require all plugging and abandonment programs to be approved prior to commencing plugging and abandonment work. Verbal approval may be given. Subsequent submission of forms is required.

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.

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., re-entry of a well, remedial work, production or injection testing.