

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

ORIGINAL - Company
DUPLICATE - Division
TRIPLICATE - NBM&G

RECEIVED
DEC 24 2015

APPLICATION FOR PERMIT TO DRILL AN OIL OR GAS WELL

(Application must be accompanied by \$200 permit fee. Submit proposed drilling program with this application.)

Company/Operator Grant Canyon Oil and Gas, LLC

Send permit to:

Street/ PO Box 717 17th Street, Suite 1400

City Denver State Colorado

Zip 80202 Telephone (303) 295-1906

Lease name Blackburn Unit Split Estate? Yes No

WELL LOCATION

■			

Well No. 18 22 (LPT) within the NW Q SW Q

Sec 8, T. 27N, R. 52E M.D.B.M.

UTM Northing 28243657 N; UTM Easting 500839 E (NAD83 Datum)

Field Blackburn 4454027.3 N 57384.3 E (LPT)

County Eureka

The well is 1875 feet from the North / South line and
and 861 feet from the East / West line of the section.

(Give location from section line, cross out wrong directions.)

Distance and direction from nearest town 39.4 miles south of Carlin, NV

If patented land, Fee Owner is _____

Section _____

Locate well correctly.

Fee Owner Address _____

If government land, lease serial No. is NVN - 11348

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

Lessee is Grant Canyon Oil and Gas, LLC

Address 717 17th Street, Suite 1400 Denver, Colorado 80202

Is the proposed well being considered for unconventional well stimulation? Yes No

It is proposed to drill the well to a depth of 7400 feet using a rotary rig.

The elevation is 5298 feet above sea level.

The KB will be 5310

If this is a wildcat well, attach plat by licensed surveyor showing location.

The status of a bond for this well is conformance with NRS 522.230 of the Nevada Revised Statutes is:

If bond posted with U.S. Government, what is name of surety company?

Bank of the West

Bond number? NVB - 000579

Please be advised: NAC 522.540 Confidentiality of well records. 1. Records concerning a well will not be kept confidential by the division unless the owner of the well requests confidentiality in writing or marks "confidential" on the logs of an exploratory well. Upon receiving such a request or log, the division will keep the records confidential for 6 months after their receipt unless the owner provides a written authorization for an earlier release.

I certify that I have personal knowledge of the facts above stated and that they are true, correct, and complete.

Signed Stephen W. Barnes
 Name Stephen W. Barnes
 Position Secretary
 Date 12/17/2015

Permit No. 0971
 API No. 27-011-05315
 Approval Date 5/20/2016
 By [Signature]
Deputy Administrator

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CONDITIONS OF PERMIT

1. Please send daily drilling reports to : Lowell Price.....lprice@minerals.nv.gov
 and
 Linda Wells.....lwells@minerals.nv.gov
2. See attached "Conditions of Approval."
3. 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.



BRIAN SANDOVAL
Governor

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<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

RICHARD PERRY
Administrator

CONDITIONS OF APPROVAL FOR CONVENTIONAL WELLS
(ADDITIONAL CONDITIONS OF APPROVAL MAY BE REQUIRED)

Operator:
Lease Name:
Well:

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

Submit forms and correspondence to: Nevada Division of Minerals
400 W. King Street
Suite 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@minerals.nv.gov
Cell 775-721-1774
Fax 775-684-7052

Richard M. Perry, Division Administrator
Office 775-684-7045 Email rmperry@minerals.nv.gov
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 if necessary. Approvals under the MOU apply to Fee and Federal lease locations.

John Menghini, Fluid Minerals Team, Petroleum Engineer, BLM Reno
Office 775-861-6573 Email John_Menghini@blm.gov
Cell 775- 223-1359
Fax 775-861-6711

YOUR APPLICATION TO DRILL THE BLACKBURN 22 WELL IS APPROVED
SUBJECT TO THE FOLLOWING PERMIT CONDITIONS

1. Approval of this APD 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. In addition, approval of this APD does not imply that the operator has legal access to the drilling location. When crossing private surface and when crossing public surface off-lease the operator must have an approved right-of-way.
2. All operations shall conform to the Nevada Division of Minerals Oil and Gas chapter 522 – Oil and Gas General Provisions.
3. A complete copy of the approved drilling permit must be at the drill site during the construction of the roads and drill pad, the drilling of the well, and the completion of the well.
4. The Oil, Gas, and Geothermal Program Manager with the Nevada Division of Minerals will be notified 24 hours prior to spudding well by either telephone or email.
5. Verbal notification shall be given to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at least 24 hours in advance of running and cementing casing (other than conductor casing), BOPE tests, and formation tests. BOPE pressure curves, or test charts, are to be submitted to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager by email at the completion of testing.
6. Operator will follow best management practices for all strings of casing as stipulated in the American Petroleum Institute (API) Spec.5CT, or as approved by the Administrator, or Deputy Administrator, of the Nevada Division of Minerals.
7. Type A Portland Cement is to be utilized for the cementing of all casing strings, or as approved by the Administrator, or Deputy Administrator, of the Nevada Division of Minerals.
8. Surface casing is to be cemented to the surface. If cement does not completely circulate back to the surface, distance to the top of the cement is to be measured in the annular space and reported to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager. A cement top job of the open annular space will be required. A sonic cement bond log (CBL) covering the surface casing from its casing shoe to the surface may be required by the Administrator, or Deputy Administrator, in the event significant loss of cement occurs during the cementing of the surface casing, as indicated by the amount of top job required. The CBL will be run over the surface casing prior to, or at, the next bit run in the intermediate bore hole, if required by the Administrator or Deputy Administrator. In the event a CBL does not show the needed clarity of cement occupying the annular space, the Administrator, or Deputy Administrator, may also require an ultrasonic cement bond log to be run. Digital copies of the cement bond log(s) and integrated interpretive log(s) will be provided to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager as soon as digital versions are available.
 - A. Cement tickets and cement job report illustrating pressure/rate/density curves related to the cementing of surface casing are to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the completion of the cementing procedure.
 - B. A surface casing pressure test will be run prior to drilling out the surface casing shoe. Casing will be pressured to a minimum of 1,500 psig for a minimum of 15 minutes. The casing pressure test curve is to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the conclusion of the test.
9. Intermediate casing is to be run back to surface. The intermediate casing string is to be cemented a minimum of 500 feet above the intermediate casing shoe, or 500 feet above any identified hydrocarbon bearing zone,

whichever is shallower. Additional cementing requirements may be invoked if the Administrator, or Deputy Administrator, of the Nevada Division of Minerals deems necessary.

- A. Cement tickets and cement job report illustrating pressure/rate/density curves related to the cementing of the intermediate casing are to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the completion of the cementing procedure.
 - B. An intermediate casing pressure test will be run prior to drilling out the intermediate casing shoe. The intermediate casing will be pressured to a minimum of 1,500 psig for a minimum of 15 minutes. The casing pressure test curve is to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the conclusion of the test.
 - C. A sonic cement bond log (CBL) will be run over the intermediate casing from the intermediate casing shoe to a minimum of 200 feet above the calculated top of cement prior to running the next string of casing. In the event a CBL does not show the needed clarity of cement occupying the annular space, the Administrator, or Deputy Administrator, may also require an ultrasonic cement bond log to be run. The CBL log, and ultrasonic cement bond log if required, may be acquired at any time prior to the production casing being run. Digital copies of the cement bond log(s) and integrated interpretive log(s), will be provided to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager as soon as a digital versions are available.
10. The production casing string is to be cemented to a minimum of 1,000 feet above the top zone of potential hydrocarbon interest.
- A. Cement tickets and cement job report illustrating pressure/rate/density curves related to the cementing of the production casing are to be submitted to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the completion of the cementing procedure.
 - B. A production casing pressure test will be run to a minimum of 3,000 psig for a minimum of 15 minutes. The pressure curve is to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the conclusion of the test. In the event further drilling is required, where a production liner will be run in the open hole, the pressure casing test will occur prior to drilling out the production casing shoe.
 - C. A sonic cement bond log (CBL) will be run over the production casing from the production casing shoe to a minimum of 200 feet above the calculated top of cement. In the event a CBL does not show the needed clarity of cement occupying the annular space, the Administrator may also require an ultrasonic cement bond log to be run. In the event further drilling is required, where a production liner will be hung from the production casing and run into the open hole, the sonic cement bond log (CBL), and ultrasonic cement bond log if required, will be run over the production casing prior to running and cementing the production liner. Digital copies of the cement bond log(s) and integrated interpretive log(s), will be provided to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager as soon as a digital versions are available.
 - D. In the event a production liner is hung from either the intermediate casing or production casing, a minimum 200 foot overlap is required between the production or intermediate casing shoe and the top of the production liner.
 - E. The operator shall utilize enough excess cement when cementing the production liner to cover the top of the liner by a minimum of 25 feet. If production liner cement calculations were not included in a previously approved cementing program these calculations are to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager prior to the cement procedure for approval by the Administrator, or Deputy Administrator, of the Nevada Division of Minerals. The cementing procedure may not be initiated without the approval of the Administrator or Deputy Administrator.

- F. Cement tickets and cement job report illustrating pressure/rate/density curves related to the cementing of the production liner are to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the completion of the cementing procedure.
 - G. A production casing/production liner pressure test will be run to a minimum of 3,000 psig for a minimum of 15 minutes. The pressure test curve is to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the completion of the test.
 - H. A sonic cement bond log (CBL) will be run over the production liner from the production liner shoe to the top of the liner. In the event a CBL does not show the needed clarity of cement occupying the annular space, the Administrator may also require an ultrasonic cement bond log to be run. Digital copies of the cement bond log(s) and integrated interpretive log(s) will be provided to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager as soon as digital versions are available.
11. Pressure curves for Blowout Prevention Equipment (BOPE) and Formation Integrity Tests (FIT) are to be submitted via email to the Nevada Division of Minerals Oil, Gas, and Geothermal Program Manager at the conclusion of the testing.
 12. 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 Lowell Price (lprice@minerals.nv.gov) and Linda Carrion (lwells@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.
 13. Any changes in the drilling and/or completion program require approval by the Administrator, or Deputy Administrator, of the Nevada Division of Minerals prior to any work being performed related to the change in operation. A sundry notice and the proposed change of procedure will be submitted to the Nevada Division of Minerals for approval. The submission of the sundry notice and the proposed change of procedure can be submitted by email.
 14. Directional surveys (inclination and azimuth) are to be run at a minimum of every 500 feet. If the inclination of a previously approved vertical wellbore exceeds 10° directional surveys (inclination and azimuth) will be required at a minimum of every 250 feet. If the wellbore or projected bottom hole location is within 200 feet of the lease or unit boundary, directional surveys (inclination and azimuth) are to be run at a minimum of every 100 feet.
 15. A Hydrogen Sulfide (H₂S) Contingency Plan will be submitted when required by the Nevada Division of Minerals. However, minimum safety precautions must be taken at all times. Personal safety equipment, including a portable hydrogen sulfide detector situated in a position to detect gas from the well must be on location. If company policy requires a higher standard, the operator will supply the Nevada Division of Minerals with a copy of the company plan or requirement, if not already submitted.
 16. A Well Completion Report will be filed with the Nevada Division of Minerals within thirty (30) days of the completion of drilling operations/release date of drill rig. If the well is to be completed prior to the drill rig being released, the Well Completion Report is due within thirty (30) days after completion operations are completed and drill rig is released. If a completion rig and/or completion equipment is brought onto location at a later date to complete the well, an amended Well Completion Report is to be filed with the Nevada Division of Minerals within thirty (30) days after completion rig and/or completion equipment is released. A complete set of daily operational reports are to be submitted with each Completion Report for the time period covered.
 17. Two copies of all logs run on the well and one copy of the computed logs in electronic format such as LAS, are to be submitted to the Nevada Division of Minerals within 30 days of the date of being run. Two copies of the mud log are to be submitted within 30 days of the completion of drilling operations. Any data the company wants to remain confidential for a period of six months after drilling rig is released must be marked as "Confidential", or a

separate written request for all of the well's down hole data to remain confidential for the six month period can be made to the Nevada Division of Minerals.

- 18. The State of Nevada (NAC 522A.215) - Cuttings – requirements for permit. Samples of cuttings shall be collected and submitted to the Nevada Bureau of Mines and Geology (NBMG). The Nevada Division of Minerals conditions of approval further require a minimum of 30-foot sample intervals from surface to the surface casing shoe and 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 call 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 boxes with the approximate dimensions of 3"x5"x20". The envelopes are to be identified by the Nevada Division of Minerals permit number, well name/number as noted on the Application for Permit to Drill an Oil or Gas Well (Kettleman number alone will suffice if given), and depth 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 Application for Permit to Drill an Oil or Gas Well, Division permit number, total interval (missing intervals noted), and set number.

NOTE: the cuttings are not to be sent to the Nevada 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 the samples by NBMG required to meet standards set out in this permit condition.

19. Any production of oil and/or gas will be reported on the Nevada Division of Minerals Oil and Gas Operator's Monthly Report, starting with the month in which production operations commence and continuing each month until the well is physically plugged and abandoned. The Oil and Gas Operator's Monthly report is to be filed with the Nevada Division of Minerals, along with the Administrative fee, by the last day of the month following the month for which production occurred.
20. All wells, whether drilling, producing, suspended or abandoned shall be identified by a sign or marker with the name of the operator, the well number, and the surveyed description of the well. The sign or marker will also have the BLM lease serial number if the well is located on or enters a Federal lease at depth.
21. No well abandonment operations will be commenced without the prior approval of the Nevada Division of Minerals. A sundry notice along with the plugging and abandonment procedure will be submitted to the Nevada Division of Minerals for approval.
22. Upon completion of approved plugging, a well identification marker will be erected at the wellsite location. The following information will be permanently placed on the marker: operator name, well name and number, location by quarter/quarter section, township, range, and federal lease number (if location is on a federal lease, or if wellbore enters a federal lease at depth).
23. A Well Plugging Report (Form 12) will be submitted within thirty (30) days following the actual plugging of the wellbore.
24. Any venting or flaring of gas during drilling or initial well evaluation tests will be conducted in accordance with Nevada Division of Minerals regulations.
25. Lessees, operators, have the responsibility to see that their exploration, development, production, and construction operations are conducted in such a manner which conforms to applicable State of Nevada laws and regulations, as well as Federal laws and regulations if exploration, development, production, and construction operations are being conducted on, or impact, a Federal lease.

26. All undesirable events (fires, accidents, blowouts, spills, and discharges) will be orally reported to the Oil, Gas, and Geothermal Program Manager, or the Administrator of the Nevada Division of Minerals immediately. These events will be followed with a written report within fifteen (15) days. The Nevada Division of Environmental Protection will also be notified of blowouts and abnormal surface spills and discharges through their 24 hour telephone notification hotline (in-state 1-888-331-6337, out of state 1-775-687-9485).
27. The enclosed Abandoned Mine brochures shall be posted in common personnel areas at the well site. The operator shall inform all drilling personnel and contractors associated with the drilling of the well of potential dangers, including bodily injury and death, associated with the exploration of abandoned mine workings, as well as the disturbance of possible bat habitats.