



DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
 Minerals & Mining Program
 2050 West Main, Suite #1, Rapid City, SD 57702-2493
 Telephone: 605-773-4201, FAX: 605-394-5317

FORM 2

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APR 17 2023

DEPT OF AGRICULTURE & NATURAL RESOURCES - RAPID CITY

APPLICATION FOR PERMIT TO DRILL

Type of work: Drill New Well Reenter Well Drill Directional Well Other: _____

Type of well: Oil Well Gas Well Injection Other: _____

Name and Address of Operator: **GULF EXPLORATION, LLC 9701 North Broadway Extension; Oklahoma City, Oklahoma 73114** Telephone: **405-840-3381**

Name and Address of Surface Owner: **James D. Litzel; Litzel Ranch LLC; 1015A US Highway 18; Lusk, Wyoming 82225**

Name and Address of Drilling Contractor and Rig Number: **Not Yet Determined**

Surface Location of well: Qtr-Qtr, Sec, Twp, Rge, County, feet from nearest lines of section, and latitude and longitude (if available): **1250' FNL, 500' FEL of Lot 1 (SE¼NE¼NE¼), Section 3, T9S, R1E, BHM; Lat: 43.300861, Long: -103.977423 (NAD 83)**

If Directional, top of pay and bottom hole location from nearest lines of section: **Not Applicable**

Acres in Spacing (Drilling) Unit: **40 Acres** Description of Spacing Unit: **Lot 1 (NE¼NE¼) of Section 3, T9S, R1E, BHM**

Well Name and Number:	Elevation:	Field and Pool, or Wildcat:	Proposed Depth and Formation:
Enigma #1-3	3834.4' GR	Wildcat	3800' 2nd Leo Formation

Size of Hole:	Size of Casing:	Weight per Foot:	Depth:	Cementing Program (amount, type, yield, additives)	Top of Cement:
1) 12.250"	8.625"	24.0#	400'	220 sx, circulated to surface with 100% excess	Surface
2) 7.875"	5.500"	17.0#	3800'	275 sx, circulated to 1430' with 20% excess	1430' +/-
3)					
4)					


Describe Proposed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). Use additional page(s) if appropriate.

PLEASE REFER TO THE ATTACHED DRILLING PROGNOSIS FOR ADDITIONAL INFORMATION IN THIS REGARD


Tight Hole - Please Keep All Information Confidential

Pit Liner Specifications: 12 mil plastic/vinyl liner

I hereby certify that the foregoing as to any work or operation performed is a true and correct report of such work or operation.

 Signature Sean Strickland Name (Print) Operations Manager Title 4/3/23 Date

FOR OFFICE USE ONLY

Approved By:  Title: PROGRAM ADMINISTRATOR

Permit No.: 2107 API No.: 40 047 20356 Date Issued: 6-1-23

Conditions, if any, on attached page. SEE ATTACHED



DEPARTMENT of AGRICULTURE and NATURAL RESOURCES

JOE FOSS BUILDING
523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

PERMIT CONDITIONS

Gulf: Enigma 1-3
09S-01E-3 NENE, Fall River County

Permit: # 2107
API: 40 047 20356

Approval has been granted to drill this location as detailed on the attached Application for Permit to Drill (Form #2) with the following additional conditions:

1. This permit is conditioned on compliance with all applicable requirements of South Dakota Codified Laws 45-9 and Administrative Rules of South Dakota 74:12.
2. The operator shall provide the department with the name of the drilling contractor before drilling commences.
3. A 12-mil woven, reinforced high-density polyethylene liner must be used on all pits.
4. A pre-spud inspection by department staff must occur once the site is built and pits are lined.
5. Surface runoff must be diverted around the drill site.
6. The surface hole must be drilled with fresh water.
7. If any oil-based mud is used for drilling you must have a pit reclamation plan approved by the department.
8. Cement must be circulated to the ground surface on the surface casing.
9. If production casing (long string) is set:
 - A. Cement must be circulated on the long string from TD to the top of the Inyan Kara formation plus 50 feet.
 - B. A cement bond log must be run and filed with the department within 60 days of completion of the well.
10. Please notify this office prior to plugging so a witness can be on location. If plugging will occur after regular business hours, call Jeff Klenner at 605-394-6866.
11. If abandoned: Either a plugging plan must be submitted at least 7 days prior to plugging for the department's review and approval or the following plan must be followed:
 - A. If the entire production casing is left in the wellbore:
 1. A mechanical integrity test must be conducted to verify the integrity of the casing as required by rule 74:12:03:02(4)(b)(ii).
 - a. If the test is unsuccessful, the well must be plugged as though no production casing is present or the leak must be located and isolated by squeeze cementing.
 2. All perforations must be isolated, either by squeeze cementing or placing a cast iron bridge plug, with a minimum of 20 feet of cement, above the perforations.
 3. A 100-foot plug, half in and half out of the base of the surface casing must be installed.
 4. A 25-foot cement plug at the top of the surface casing must be installed.
 5. Heavy, mud-laden fluid must be placed between all plugs.
 - B. If a portion of the production casing is removed:
 1. All perforations must be isolated, either by squeeze cementing or placing a cast iron bridge plug, with a minimum of 20 feet of cement, above the perforations.
 2. A 100-foot cement plug, half in and half out of the top of the casing stub must be installed after the retrievable part of the production casing has been removed.
 3. A 100-foot cement plug, half in and half out of the top of any fluid bearing formations or salt zone encountered between the top of the casing stub and the base of the surface casing must be installed. Fluid bearing formations at this site include: Minnelusa, Minnekahta, Canyon Springs, Sundance, and Inyan Kara.

4. A 100-foot plug, half in and half out of the base of the surface casing must be installed.
 5. A 25-foot cement plug at the top of the surface casing must be installed.
 6. Heavy, mud-laden fluid must be placed between all plugs.
- C. Without production casing:
1. 100-foot cement plugs, half in and half out of the top of any salt zones encountered and the following formations must be installed: Minnelusa, Minnekahta, Canyon Springs, Sundance, and Inyan Kara.
 2. A 100-foot cement plug, half in and half out of the base of the surface casing must be installed.
 3. A 25-foot cement plug at the top of the surface casing must be installed.
 4. Heavy, mud-laden fluid must be placed between all plugs.
- D. The casing string must be cut off at least three feet below the final ground surface contour. A plate with the name of the operator, well name and number, and legal location by quarter-quarter section, township and range must be welded to the casing stub. The location of the abandoned well must be surveyed with high resolution global positioning system equipment or other appropriate survey methods sufficient to accurately locate the well. Survey coordinates must be included in the final abandonment report.
12. Surface reclamation of the site must be completed within one year of plugging and abandoning the well.
 13. Interim reclamation must be conducted on all areas disturbed by a well drilling operation and not needed for production operations within 12 months after the well is completed in accordance with Administrative Rules of South Dakota 74:12:03:07.
 14. A washed and dried set of sample cuttings (and cores, if cut) must be shipped, free of charge, to:

Tim Cowman
Geological Survey Program
Akeley-Lawrence Science Center
University of South Dakota
414 E. Clark Street
Vermillion, SD 57069-2390