



DEPARTMENT of ENVIRONMENT 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  
**RECEIVED**  
 JUL 15 2015

DEPT OF ENVIRONMENT & NATURAL RESOURCES - RAPID CITY

State of South Dakota  
 Department of Environment  
 and Natural Resources

**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: \_\_\_\_\_ Telephone: **712-362-3003**

Name and Address of Surface Owner: **Thomas L. Sunde, 1120 430<sup>th</sup> Ave., Esterville IA. 51334**  
**605 662 7887**

Name and Address of Drilling Contractor and Rig Number: **Don and Pat Spencer, 27269 Elbow Canyon Rd. Edgemont SD 57755**  
**307 644 9180**

**M-J Drilling, 9 Turkey Ln., #20, Buffalo WY, 82834 Rig #1**

Surface Location of well: Qtr-Qtr, Sec, Twp, Rge, County, feet from nearest lines of section, and latitude and longitude (if available):  
**NWSE section 34, T6S - R2E, Custer County 2198 FSL, 2311 FEL**

If Directional, top of pay and bottom hole location from nearest lines of section:  
**N/A**

Acres in Spacing (Drilling) Unit: \_\_\_\_\_ Description of Spacing Unit:  
**40 acres under lease. Description is NWSE sec. 34. Barker Dome field = 10a**

Well Name and Number:	Elevation:	Field and Pool, or Wildcat:	Proposed Depth and Formation:		
<b>Sunde 1-6-2-34 Spencer</b>	<b>4217'</b>	<b>Barker Dome extension TD of 1500'</b>	<b>Lea and Converse</b>		
Size of Hole:	Size of Casing:	Weight per Foot:	Depth:	Cementing Program (amount, type, yield, additives)	Top of Cement:
1) <b>12 1/4"</b>	<b>8 5/8"</b>	<b>24#</b>	<b>150'</b>	<b>125 sx of class 'G' or enough to circulate to surface</b>	<b>Surface</b>
2) <b>7 7/8"</b>	<b>5.5"</b>	<b>15#</b>	<b>1500'</b>	<b>200 sx of 'G' or enough to cover into Spearfish fm.</b>	<b>Spearfish fm.</b>
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.  
**Well will target Lea sands as primary; Converse sands as secondary. An oil show in the Converse will warrant a DST. An oil show in the Lea will likely be tested through casing. If commercial oil is found, a tank battery separate from the current field battery will be set-up. Anticipate a spud date of Aug. 5th, 2015.**

Pit Liner Specifications: **standard 12 mil liner will be used to cover all pits.**

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

**Tony K. Petres** Signature      **Tony K. Petres** Name (Print)      **geo. consultant** Title      **7/14/15** Date

**FOR OFFICE USE ONLY**

Approved By: **Phil Townsend** Title: **Administrator Minerals & Mining Programs**

Permit No.: **2066** API No.: **40 033 20028** Date Issued: **7/24/15**

Conditions, if any, on attached page.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

PMB 2020  
JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182  
[www.state.sd.us/denr](http://www.state.sd.us/denr)

**PERMIT CONDITIONS**

Sunde: Sunde 1-6-2-34 Spencer  
6S-2E-34 NWSE, Custer County

Permit: # 2066  
API: 40 033 20028

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. A 12-mil woven, reinforced high-density polyethylene liner must be used on all pits.
3. If drilling does not commence within one year from the issuance date, this permit will expire.
4. Surface runoff must be diverted around the drill site.
5. The surface hole must be drilled with fresh water.
6. Cement must be circulated to the ground surface on the surface casing.
7. If production casing (long string) is set:
  - A. The cement program submitted with the application shall be followed.
  - B. A cement bond log must be run and filed with the department within 60 days after completion of the well as required by Administrative Rules of South Dakota 74:12:02:12.
8. If the well is productive, only one formation may be produced, unless Thomas Sunde petitions the Board of Minerals and Environment to approve multiple completions or commingling in the wellbore.
9. Please notify this office prior to plugging or MIT so a witness can be on location. If plugging or MIT will occur after regular business hours, call Jeff Klenner at 605-929-1414.
10. 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.
    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 and Minnekahta.
    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 and Minnekahta.
  - 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.
- 11. Surface reclamation of the site must be completed within one year of plugging and abandoning the well.
- 12. 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.
- 13. A washed set of sample cuttings (and cores, if cut) must be shipped, free of charge, to:

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

- 14. Activities requiring approval from the department may not be initiated until proper approval has been obtained.