



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**  
 JAN 25 2018

State of South Dakota  
 Department of Environment  
 and Natural Resources

DEPT OF ENVIRONMENT & 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: Luff Exploration Company, 1580 Lincoln, Suite 850, Denver, CO 80203  
 Telephone: 303-861-2468

Name and Address of Surface Owner:  
 Todd L. Stearns, 14 6th Ave NW, Bowman, ND 58623 and David Stearns 606 East Grant, Spearfish, SD 57783

Name and Address of Drilling Contractor and Rig Number:  
 Key Energy Services, 5077 141st Avenue NW, Williston, ND 58801; Rig 887

Surface Location of well: Qtr-Qtr, Sec, Twp, Rge, County, feet from nearest lines of section, and latitude and longitude (if available):  
 NESE, Section 14, T22N, R4E; Harding; 2000' FSL & 275' FEL; Lat 45° 52' 07.934"; Long 103°, 35' 03.618"

If Directional, top of pay and bottom hole location from nearest lines of section:  
 TOP: 1547' FSL & 125' FEL, NESE, Sec. 14, T22N, R4E      BHL: 550' FSL & 1950' FWL, SESW, Sec. 24, T22N, R4E

Acres in Spacing (Drilling) Unit: 960  
 Description of Spacing Unit: SW/4 Sec 13; SE/4 Sec 14; E/2 Sec 23; W/2 Sec 24, all in T22N, R4E

Well Name and Number:	Elevation:	Field and Pool, or Wildcat:	Proposed Depth and Formation:
State I-14H	3135' GL (Graded)	Clarkson Ranch Field, Red River B	15767' MD, 8885' TVD, Red River B

Size of Hole:	Size of Casing:	Weight per Foot:	Depth:	Cementing Program (amount, type, yield, additives)	Top of Cement:
1) 13-1/2"	9-5/8"	36#	2000'	565 sks Lite, Tail w/ 200 sks Premium	Surface
2) 8-3/4"	7"	23, 26, 29#	9157' MD	142 sks Lite, Tail w/ 499 sks Premium	4544'
3) 6-1/8"	None		15767' MD		
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.  
 Drill a medium radius horizontal well that has one lateral in the Red River "B" formation. Drill 13-1/2" surface hole to 2000' with fresh water. Run 9-5/8" casing and cement to surface. Drill 8-3/4" vertical hole to KOP at 8407'. Drill build section with an azimuth of 162 degrees to 9157' MD (8885' TVD). Vertical and build section to be drilled with invert oil mud. Run 7" casing with shoe at BHL 1547' FSL & 125' FEL Sec. 14, T22N, R4E and cement to 4544'. Drill one 6 1/8" horizontal lateral with an azimuth of 162 degrees to 15767' MD (8885' TVD) and a BHL 550' FSL & 1950' FWL, Sec 24, T22N, R4E with fresh water. Estimated start date for location construction is 3/1/18. Estimated start date for drilling is 5/10/18.  
 Pit Liner Specifications: All drilling fluids and cuttings will be contained in a pit lined with a 12 mil plastic 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: [Signature]      Name (Print): Richard D. George      Title: Manager of Operations      Date: 1/24/2018

**FOR OFFICE USE ONLY**

Approved By: Robert Townsend      Title: Administrator Minerals & Mining Program  
 Permit No.: 2075      API No.: 40 063 20782      Date Issued: 2/6/2018  
 Conditions, if any, on attached page. See attached.



**DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES**

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**PERMIT CONDITIONS**

Luff: State I-14H  
22N-4E-14 NESE, Harding County

Permit: 2075  
API: 40 063 20782

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. If drilling does not commence within one year from the issuance date, this permit will expire.
3. A 12-mil woven, reinforced high-density polyethylene liner must be used on all pits.
4. Surface runoff must be diverted around the drill site.
5. If abandoned, a plugging plan must be submitted to the department for review and approval. The plugging plan should address all requirements found in Administrative Rules of South Dakota 74:12:03.
  - A. If production casing is left in the wellbore, 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).
  - B. 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.
6. Surface reclamation of the site must be completed within one year of plugging and abandoning the well.
7. A washed set of sample cuttings (or 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

8. Please notify this office at least 72 hours 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.