

STATE OF SOUTH DAKOTA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
BOARD OF MINERALS AND ENVIRONMENT

IN THE MATTER OF THE PETITION OF )  
LUFF EXPLORATION COMPANY, DENVER, )  
COLORADO, FOR AN ORDER AMENDING )  
THE APPLICABLE ORDERS FOR THE )  
SOUTH MEDICINE POLE HILLS FIELD TO )  
ESTABLISH A 960-ACRE SPACING UNIT )  
CONSISTING OF THE SW/4 OF SECTION 27, )  
THE SE/4 OF SECTION 28, THE E/2 OF )  
SECTION 33, AND THE W/2 OF SECTION )  
34, ALL IN TOWNSHIP 23 NORTH, RANGE )  
4 EAST, HARDING COUNTY, )  
APPROXIMATELY 22 MILES NORTH- )  
NORTHWEST OF BUFFALO, SOUTH )  
DAKOTA, AND AUTHORIZE THE )  
DRILLING OF A HORIZONTAL WELL )  
WITH ONE OR MORE LATERALS IN THE )  
RED RIVER "B" ZONE AT ANY LOCATION )  
NOT CLOSER THAN 500 FEET TO THE )  
BOUNDARY OF THE SPACING UNIT; TO )  
AUTHORIZE THE ISSUANCE OF A PERMIT )  
FOR THE HORIZONTAL WELL; AND FOR )  
OTHER RELIEF AS THE BOARD DEEMS )  
APPROPRIATE. )

Case No. 7-2012

**FINDINGS OF FACT,  
CONCLUSIONS OF LAW,  
AND ORDER**

The South Dakota Board of Minerals and Environment, ("Board"), held a hearing in Pierre, South Dakota, pursuant to notice on July 19, 2012, upon the Petition of Luff Exploration Company ("Luff"), in the captioned matter. A quorum of the Board was present at the hearing. The Board, having considered the testimony, other evidence and arguments offered by Luff, and having afforded other interested parties the opportunity to present evidence and arguments, now makes and enters the following:

## FINDINGS OF FACT

1. Luff has petitioned the Board for an Order amending the applicable orders for the South Medicine Pole Hills Field so as to establish a 960-acre spacing unit consisting of the SW/4 of Section 27, the SE/4 of Section 28, the E/2 of Section 33, and the W/2 of Section 34, all in Township 23 North, Range 4 East of the Black Hills Meridian, Harding County, South Dakota and to allow the drilling of a horizontal well with one or more laterals in the Red River "B" Zone at any location not closer than 500 feet to the boundary of said spacing unit.
2. Luff orally amended its Petition to change the 500 feet boundary to 660 feet in order to meet the concerns of the intervenor.
3. The intervenor agreed to withdraw his intervention based on the amendment.
4. The Department caused proper notice of the time, date and location of the hearing to be timely published pursuant to SDCL 45-9-58.
5. Luff gave proper and timely notice of the time, date and location of the hearing to all persons and entities who own interests in the mineral estate within the proposed spacing unit and to all persons and entities who own interests in adjacent sections.
6. C. Lloyd Holecek, a mineral interest owner in SE/4 Sec. 27, and NE/4 Sec. 34, submitted a petition to intervene dated June 27, 2012. No other persons or entities sought intervention prior to the intervention deadline established by the Department.
7. In Order No. 2-73b, the Board established 320-acre spacing for the South Medicine Pole Hills field. In Order No. 14-97, the Board established 640-acre

spacing for horizontal Red River "B" wells in various lands within the field, including Section 34.

8. Two wells have been drilled in the lands described above. The Stearns 1-34 well was drilled in the NESW of Section 34 in 1979 and produced approximately 47,000 barrels of oil from the Red River "D" formation before being plugged and abandoned. The Buckley 33-28 well was drilled in the NWSE of Section 28 in 1973 and produced approximately 119,000 barrels of oil from the Red River "B" formation before being abandoned in the Red River pool. Luff desires to drill a horizontal well in the Red River "B" zone with a NW/SE azimuth lying between the Buckley 33-28 location in the NWSE of Section 28 and the Stearns 1-34 location in the NESW of Section 34. Due to the structure and areal extent of the Red River accumulation in this area, such a well will, in applicant's opinion, maximize the recovery of oil and gas.
9. There are unleased mineral owners in the SW/4 of Section 27. There are two title documents of record affecting this property, the most recent dates to 1922. There are four owners of record, all of whom are now deceased.
10. A 960-acre spacing unit would provide the necessary flexibility to drill a horizontal well at the optimal location and would optimize primary recovery, prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights of all the owners in the area.
11. Such a spacing unit is not smaller than the maximum area that can be efficiently and economically drained by the proposed wells and the size, shape and location

thereof will result in the efficient and economic development of the pool as a whole.

12. Additional oil and gas would be recovered by drilling a horizontal well in the manner proposed by Luff. A well drilled in the manner proposed by Luff will efficiently and economically drain the proposed spacing unit.

Based on the foregoing Findings of Fact, the Board makes and enters the following:

### **CONCLUSIONS OF LAW**

1. The Board has authority to hear and decide this matter pursuant to SDCL 45-9-20 through 45-9-29 and ARSD 74:09:01:08.
2. All notices of the Petition and the hearing thereon were properly and timely given.
3. The Petition is complete in all respects and contains all the required and requested information.
4. A 960-acre spacing unit for the South Medicine Pole Hills Field consisting of the SW/4 of Section 27, and SE/4 of Section 28, the E/2 of Section 33, and the W/2 of Section 34, all in Township 23 North, Range 4 East, is not smaller than the maximum area that can be efficiently and economically drained by the proposed horizontal well.
5. The establishment of a spacing unit consisting of a 960-acre spacing unit for the South Medicine Pole Hills Field consisting of the SW/4 of Section 27, and SE/4 of Section 28, the E/2 of Section 33, and the W/2 of Section 34, all in Township 23 North, Range 4 East is necessary to prevent waste, to avoid the drilling of unnecessary wells, and to protect correlative rights.
6. A quiet title action or multi-decedent probate will be necessary to determine the owners of the mineral interests in SW/4 of Section 27. If there are unleased potential heirs at the time of drilling, Luff will need to initiate a proceeding before the board seeking force pooling with the risk penalty.

7. The size, shape and location of the spacing unit consisting of the 960-acre spacing unit for the South Medicine Pole Hills Field consisting of the SW/4 of Section 27, and SE/4 of Section 28, the E/2 of Section 33, and the W/2 of Section 34, all in Township 23 North, Range 4 East, will result in the efficient and economic development of the pool as a whole.

8. A permit should be issued to Luff for the drilling of a horizontal well in such spacing unit.

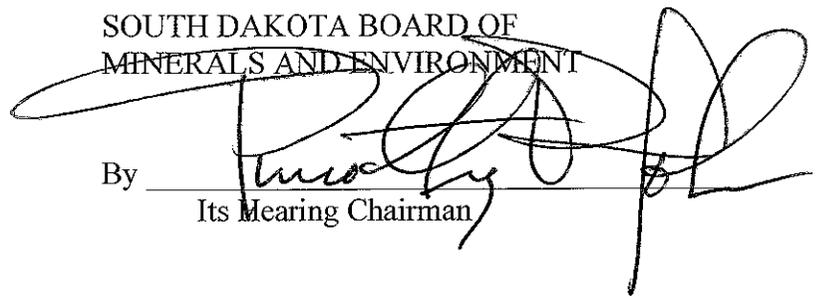
### **ORDER**

Based upon the foregoing Findings of Fact and Conclusions of Law, the Board does hereby order:

1. The Holecek Petition to Intervene is withdrawn.
2. The Petition of Luff as amended, and set forth above is granted and approved;
3. The South Medicine Pole Hills Field is hereby amended to establish a spacing unit consisting of the SW/4 of Section 27, and SE/4 of Section 28, the E/2 of Section 33, and the W/2 of Section 34, all in Township 23 North, Range 4 East, for the purpose of drilling a horizontal well with one or more laterals in the Red River "B" Zone, with all portions of the wellbore within the Red River "B" pool not isolated by cement to be located not closer than 660 feet to the boundary of said spacing unit; the portion of the well bore above the top of the Red River "B" pool but below the top of the Gunton formation may be completed open-hole;
4. Upon complying with the permitting, recording and other regulatory requirements, Luff is entitled to the issuance of a drilling permit for the drilling of a well as set forth above; and
5. Order Nos. 2-73b and 14-97, as well as any other orders of the Board which may be in conflict with the provisions hereof, are hereby amended to conform to the terms of this Order; all portions of those orders and all other orders of the Board which are not specifically amended by the terms of this Order shall remain in full force and effect until further order of the Board.

Dated at Pierre, South Dakota, this 19<sup>th</sup> day of July, 2012.

SOUTH DAKOTA BOARD OF  
MINERALS AND ENVIRONMENT

A large, stylized handwritten signature in black ink, written over the printed name of the Chairman.

By \_\_\_\_\_  
Its Mearing Chairman