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

IN THE MATTER OF THE PETITION OF LUFF EXPLORATION COMPANY, DENVER, CO., AN **APPROVING** FOR ORDER OPERATION OF Α PORTION OF CLARKSON RANCH FIELD CONSISTING OF THE S/2 OF SECTION 13, SE/4 OF SECTION 14, E/2 OF SECTION 23, ALL OF SECTION 24, AND N/2 OF SECTION 25, TOWNSHIP 22 NORTH, RANGE EAST. HARDING COUNTY, SOUTH **DAKOTA** AS THE CLARKSON RANCH RED RIVER PROVIDING FOR THE RECOVERY OF RISK COMPENSATION FROM OWNERS ELECT TO HAVE THEIR SHARE OF UNIT EXPENSES CARRIED; APPROVING UNIT AGREEMENT AND UNIT OPERATING AGREEMENT FOR THE UNIT: DESIGNATING LUFF **EXPLORATION** COMPANY AS UNIT OPERATOR: AND GRANTING SUCH OTHER RELIEF AS THE BOARD DEEMS APPROPRIATE.

FEB 2 5 2019

DEPT OF ENVIRONMENT & NATURAL RESOURCES - RAPID CITY

PETITION

Case No. 1-2019

COMES NOW the petitioner, Luff Exploration Company ("Luff"), and respectfully alleges as follows:

- 1. Luff represents the owners of interests in the oil and gas leasehold estate underlying all or portions of the South Half of Section 13, the Southeast Quarter of Section 14, the East Half of Section 23, All of Section 24, and the North Half of Section 25, Township 22 North, Range 4 East of the Black Hills Meridian. All of said lands are located in Harding County, South Dakota.
- 2. Said lands (the "Unit Area") consist of 1760 acres, more or less. The Unit Area is included within the Clarkson Ranch Field.
- 3. Pursuant to Order No. 9-1993, said Sections 24 and 25 were included in the Clarkson Ranch Field, and the Red River "B" zone underlying Sections 24 and 25 was spaced on a two wells per 640-acre basis pursuant to Order No. 14-1995. The South Half of Section 13 was included in said field pursuant to Order No. 6-2014, which additionally established a 960-acre spacing unit consisting of the South Half of Section 13 and all of Section 24. The Southeast

Quarter of Section 14 and the East Half of Section 23 were included in said field pursuant to Order No. 7-2017, which also established an overlapping 960-acre spacing unit consisting of the Southwest Quarter of Section 13, the Southeast Quarter of Section 14, the East Half of Section 23, and the West Half of Section 24.

- 4. Four producing wells have been drilled in the Unit Area. The Travers 22-24 was a vertical well drilled in 1974 by DEPCO Inc. and produced from the Red River "C" zone, and the well was plugged and abandoned in 1987. The Travers 34-24 was a vertical well drilled by DEPCO Inc. as a dry hole in 1976, but was reentered by Wyoming Resources in 1993 as a producing well in the Red River "D" zone; the well is currently operated by Luff and continues to produce. The Clarkson Ranch N-13H is a horizontal well drilled by Luff in 2014 that produces from the Red River "B" zone. Finally, the State I-14H is a horizontal well drilled by Luff in 2018 that produces from the Red River "B" zone. The Clarkson Ranch N-13H and State I-14H are both currently operated by Luff.
- 5. Two dry holes have also been drilled in the Unit area. The Travers 1-25 was drilled as a vertical dry hole by Wyoming Resources in the NE/4 of Section 25. While this well was not completed as a producer, it provides important information regarding secondary recovery potential in the south end of the Unit area. The Alyce K-24 was a vertical dry hole in the SW/4 of Section 24. It was not productive in the Red River "C" and "D" zones. Casing was run down through the Dakota (Inyan Kara) in anticipation of completing the well as a water supply well for the unit.
- 6. Luff operates a number of Red River "B" secondary recovery units in Harding County, South Dakota and Bowman County, North Dakota, including the nearby North Buffalo Red River Unit, Travers Ranch Red River Unit, and SD State Line Red River Unit. Based on Luff's experience with other Red River "B" wells and units, Luff believes that unitization of the Unit Area and implementation of a secondary recovery project consisting of a water flood will substantially increase the recovery of oil and gas from the Red River "B" formation underlying the Unit Area. At the hearing in this matter, or at an earlier date if a hearing is not held, Luff will submit exhibits addressing, among other things, the matters set forth in the Administrative Rules

of South Dakota (ARSD) 74:12:06:01, including the costs of the proposed water flood and the value of the additional hydrocarbons Luff expects to produce as a result of the secondary recovery operation.

- 7. At the present time, Luff anticipates converting the existing State I-14H well to water service injection. At a later date, depending on economics and other factors, Luff may drill additional wells within the Unit Area for either production or water injection service. Luff will obtain approval pursuant to ARSD Chapter 74:12:07 prior to commencing injection in this well or any other well in the Unit Area.
- 8. To protect the correlative rights of all owners of interests within the Unit Area, Luff believes that production from the proposed unit should be allocated on the basis of a two-phase formula, with Phase I including parameters for Current Rate (47.5%), Surface Acres (5.0%) and Remaining Primary Recovery (47.5%), and Phase II including parameters for Mobile (Movable) Oil in Place (30%) and Estimated Ultimate Recovery from Primary Recovery (Primary EUR) (70%). At the hearing in this matter, or at an earlier date if a hearing is not held, Luff will submit a proposed plan for unit operations consisting of a unit agreement and unit operating agreement addressing, among other things, the matters set forth in Section 45-9-39 of the South Dakota Codified Laws (SDCL).
- 9. Luff proposes that the name of the proposed unit be the "Clarkson Ranch Red River Unit" and that it be designated as unit operator.
- 10. Luff requests that the Board authorize the inclusion in the unit operating agreement of a provision allowing the recovery of risk compensation in accordance with ARSD Chapter 74:12:10 from interest owners who elect not to participate in the risk and cost of unit operations after being afforded a reasonable opportunity to do so.
- 11. The establishment of a secondary recovery unit and implementation of a secondary recovery program is reasonably necessary to increase substantially the ultimate recovery of oil and gas from the lands.

- 12. The value of the estimated additional recovery of oil and gas exceeds the estimated additional cost incident to conducting such operation.
- 13. The proposed unit area is of such size and shape as may be reasonably required for the conduct of the unit operations and the conduct of such operation will have no adverse effect upon other portions of the pool.
- 14. The Board has authority to hear and decide this matter pursuant to, and the subject of this petition involves, SDCL Sections 45-9-37 through 45-9-49 and ARSD 74:12:06:01.

WHEREFORE, applicant respectfully requests that the Board issue its notice of opportunity for hearing and, if any interested party intervenes in accordance with said notice, set this matter for hearing at the regularly scheduled hearings in April 2019, or such other date as may be established by the Board, and that the Board enter its order granting the relief requested.

Dated this 22nd day of February, 2019.

LUFF EXPLORATION COMPANY

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