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DEPT OF ENVIRONMENT & NATURAL RESOURCES - RAPID CITY

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 FOR AN ORDER APPROVING THE OPERATION OF A PORTION OF THE TRAVERS RANCH FIELD, THE STATE LINE FIELD, AND THE YELLOW HAIR FIELD, CONSISTING OF THE SE/4 OF SECTION 28, THE E/2 OF SECTION 32 AND ALL OF SECTION 33, TOWNSHIP 23 NORTH, RANGE 5 EAST, AND THE N/2 OF SECTION 4, ALL OF SECTION 5, THE E/2 AND SW/4 OF SECTION 6, THE N/2 OF SECTION 7 AND THE NW/4 OF SECTION 8, TOWNSHIP 22 NORTH, RANGE 5 EAST, HARDING COUNTY, SOUTH DAKOTA, AS THE TRAVERS RANCH RED RIVER UNIT; PROVIDING FOR THE RECOVERY OF RISK COMPENSATION FROM OWNERS WHO ELECT TO HAVE THEIR SHARE OF UNIT EXPENSES CARRIED; AMENDING EXISTING ORDERS TO INCLUDE ALL OF SAID LANDS IN THE TRAVERS RANCH FIELD; APPROVING THE 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.

**AMENDED PETITION**

Case No. 4-2012

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 in all or portions of the following described lands:

Township 23 North, Range 5 East
Section 28: SE/4
Section 32: E/2

Section 33: All

Township 22 North, Range 5 East
Section 4: N/2
Section 5: All
Section 6: E/2, SW/4
Section 7: N/2
Section 8: NW/4

Consisting of 3029.62 acres, more or less, in Harding County, South Dakota (the "Unit Area").

2. The Unit Area is included within either the Travers Ranch field, the State Line Field or the Yellow Hair field.

3. The Travers Ranch field was established by Order 3-73b which included Sections 5, 6, 7 and 8 within the field. Order No. 4-99 established 640-acre spacing for the Red River "B" pool underlying Section 5. Order No. 4-2000 established a 640-acre spacing unit consisting of the S/2 of Section 6 and the N/2 of Section 7 with up to two laterals to be drilled at any location not closer than 660 feet to the boundary of the spacing unit and Order No. 2-2005 reduced the setback for one of these laterals to 500 feet.

4. Order No. 1-73 established the State Line Field and included Sections 28, 32 and 33 within the field. Pursuant to Order No. 5-2004, the E/2 of Section 32 and the W/2 of Section 33, Township 23 North, Range 5 East, constitute a 640-acre spacing unit for the Red River "B" pool in the State Line field. Pursuant to Order No. 3-2011. the E/2 of Section 33 and the SE/4 of Section 28 constitute a 480-acre spacing unit for the Red River "B" pool in the State Line field.

5. Order No. 2-73A established 320-acre spacing for the Yellow Hair field. In Order No. 2-83, the field was extended to include Section 4. In Order No. 19-97, spacing was changed to 640-acre spacing for purposes of drilling horizontal wells in some portions of the field. In

Order No. 2-2007, a 320-acre spacing unit consisting of the N/2 of Section 4 was established for the Red River "B" pool.

6. In applicant's opinion, the Red River "B" reservoir underlying all of said lands is part of the same common source of supply.

7. Within the Unit Area, Luff has drilled a total of 1 vertical and 5 horizontal oil and gas wells in the Red River "B" formation and Luff is the operator of all of the wells included within the Unit Area. The Janvrin 1-32 was drilled as a vertical well and produced from the Red River "B" formation with a spacing unit for the State Line field consisting of the SE/4 of Section 32 and the SW/4 of Section 33. The Janvrin I-32H well was drilled as a horizontal well on a spacing unit for the State Line field consisting of the E/2 of Section 32 and the W/2 of Section 33 and produces from the Red River "B" pool. The Janvrin O-33H well was drilled on a spacing unit for the State Line field consisting of the E/2 of Section 33 and the SE/4 of Section 28. The Laurel Foust F-4H was drilled as a horizontal well on a spacing unit for the Yellow Hair field consisting of the N/2 of Section 4. The Travers N-5H was drilled as a horizontal well for the Travers Ranch field described all of Section 5 and produces from the Red River "B" pool. The Travers 1-6 was drilled as a horizontal well on a spacing unit for the Travers Ranch field consisting of the S/2 of Section 6 and the N/2 of Section 7. Luff has also drilled two wells which have produced from the Red River "D" formation, being the Travers K-5 well in Section 5 and the Travers 1-7A in the N/2 of Section 7, but the Red River "D" formation is not proposed to be included within the unitized formation which is the subject of this petition. The only well included within the State Line, Yellow Hair or Travers Ranch fields which is not operated by Luff is the Fuller Canyon Federal 1-9 well which is operated by Murex Petroleum Corporation,

but not proposed to be included within the unit. Murex Petroleum Corporation also owns a non-operated interest within the Unit Area and will therefore be included within the unit.

8. Through March 31, 2012, these wells have produced approximately 619,655 barrels of oil from the Red River "B" formation. Luff estimates that these wells will recover approximately 362,979 additional barrels of oil from the Red River "B" formation under primary recovery operations, for a total primary recovery of approximately 982,634 barrels.

9. Luff operates a number of other Red River "B" wells in the Harding County, South Dakota, and Bowman County, North Dakota area and also operates eight Red River "B" secondary recovery units in this area. Based upon Luff's experience with other 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.

10. Specifically, reservoir modeling indicates that injecting water into three horizontal wells, including two new horizontal wells and one existing horizontal well, and producing oil and gas through the four remaining horizontal wells will likely result in the recovery of approximately 510,000 additional barrels of oil, together with the associated gas that will also be recovered, from the Unit Area. The estimated cost of such an enhanced recovery method is $10.4 million. The value of these additional reserves far exceeds the costs necessary to implement a secondary recovery program. The present value, discounted at 10%, of the anticipated secondary recovery, net of the anticipated capital investment, is $9.2 million.

11. At the present time, Luff anticipates injecting water into the existing Janvrin O-33H well and two new wells to be drilled, one in the SE/4 of Section 32 and the central portion of Section 5, and one primarily along the north/south boundary between Sections 5 and 6. Luff

will obtain approval pursuant to ARSD Chapter 74:12:07 prior to commencing injection in these wells or any other well.

12. Luff further believes that to protect the correlative rights of all owners of interests within the lands, production from the proposed unit area should be allocated on the basis of a two-phase formula, with Phase I based 4% on surface acres, 48% on current rate, defined as a 6 month average daily oil production ending April 2012, and 48% on remaining recoverable oil under primary recovery, and Phase II based 68% on estimated ultimate primary recovery, 28% on movable original oil in place, and 4 % surface acres. At the hearing in this matter, 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.

13. Luff proposes that the name of the proposed unit be the "Travers Ranch Red River Unit" and that it be designated as unit operator.

14. There are no unleased mineral owners within the proposed unit. 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 74:12:10:05 from lessees who elect not to participate in the risk and cost of unit operations after being afforded a reasonable opportunity to do so. Order No. 6-2004 authorized the recovery of risk compensation from any owner who elected not to participate in the risk and cost of drilling the Janvrin I-32H well. To the extent any such owners elected not to participate and are currently subject to risk compensation in accordance with Order No. 6-2004, Luff will address how such risk compensation will be handled after the effective date of the unit in the unit operating agreement which will be provided to the Board for its consideration and approval at the hearing of this matter.

15. To facilitate and enhance the value of reporting and tracking production and injection rates, applicant believes that current orders should be amended to that all the lands included within this unit are included within a single field, and applicant believes that all of said lands should be included in the Travers Ranch field.

16. 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.

17. The value of the estimated additional recovery of oil and gas exceeds the estimated additional cost incident to conducting such operation.

18. 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.

19. 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 this matter be set for hearing at the regularly scheduled hearings in June, 2012 or such other date as may be established by the Board and that thereafter the Board enter its order amending existing orders governing the Unit Area including, without limitation, Order Nos. 1-73, 2-73a, 3-73b, 19-97, 4-99, 4-2000, 5-2004, 2-2005, 2-2007, and 3-2011, including the Unit Area within the Travers Ranch field, approving the operation of the Unit Area as unit in accordance with the unit agreement and unit operating agreement as may be submitted by Luff at the hearing of this matter including the recovery of risk compensation in accordance with such agreements, and granting such other relief as may be requested.

Dated this 13th day of April, 2012.

LUFF EXPLORATION COMPANY

John W. Morrison
CROWLEY FLECK PLLP
Suite 600, 400 East Broadway
PO Box 2798
Bismarck, ND 58502

MAY, ADAM, GERDES & THOMPSON, L.L.P.
503 South Pierre Street
PO Box 160
Pierre, SD 57501-0160

By: _____
BRETT KOENECKE

State of Colorado )
)ss.
County of Denver )

Luff Exploration Company, applicant in the captioned matter, hereby grants permission to the secretary for the performance of inspections required or authorized by SDCL Chapter 45-9 or ARSD Article 74:12.

LUFF EXPLORATION COMPANY

By: _____

GLORIA RAMIREZ NOTARY PUBLIC STATE OF COLORADO

Subscribed and sworn to this 12th day of April, 2012.

_____
Notary Public
Denver County, Colorado
My Commission Expires: 8/21/2014