

**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION**

**IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION COMMISSION FOR  
THE PURPOSE OF CONSIDERING:**

**APPLICATION OF LINN OPERATING, INC. TO  
AMEND COMMISSION ORDER NO. R-11980-A  
REGARDING THE EAST HOBBS SAN ANDRES  
UNIT, LEA COUNTY, NEW MEXICO.**

**Case No. 15284  
ORDER NO. R-11980-D**

**ORDER OF THE COMMISSION**

This case came before the Oil Conservation Commission (the "Commission") on the application of Linn Operating, Inc. to amend Commission Order No. R-11980-A. The Commission having conducted public hearings on May 7, 2015 and July 16, 2015, and having considered the testimony, the record, and being otherwise fully advised, enters the following findings, conclusions and order at Santa Fe, New Mexico.

**THE COMMISSION FINDS THAT:**

1. Due public notice has been given of the application and the hearing, and the Commission has jurisdiction of this case and the subject matter herein.
2. Commission Order No. R-11980-A approved the East Hobbs San Andres Unit (the "Unit"), a statutory unit, formed for the purpose of instituting a pressure maintenance project within the East Hobbs-San Andres Pool.
3. Applicant Linn Operating, Inc. ("Linn" or "Applicant") seeks an order amending Order No. R-11980-A to eliminate Ordering Paragraph (9), which requires that no fresh water be used as make-up water. Applicant intends to institute a carbon dioxide flood in the Unit at a future date, but to do so needs to re-pressurize or fill up the reservoir.
4. The following acreage is in the Unit:

**Township 18 South, Range 39 East, NMPPM**

Section 29: SW/4 and SW/4 NW/4  
Section 30: S/2 and S/2 N/2  
Section 31: N/2 N/2  
Section 32: N/2 NW/4

Containing 920 acres.

The N/2 NW/4 of Section 32 is State of New Mexico trust land. The remaining 840 acres of lands in the Unit are comprised of fee tracts.

5. At the close of the May 7, 2015 Commission hearing, the Commission continued the hearing to July 16, 2015, and requested Applicant to (a) provide notice of the continued hearing to the City of Hobbs and the Commissioner of Public Lands; (b) submit the Unit Agreement and the Unit Operating Agreement; and (c) submit additional evidence regarding alternatives to fresh water potentially available for re-pressurizing the reservoir in the Unit (including produced water, fresh water from the Glorieta formation, carbon dioxide and grey water), and the economics involved in their use.

6. At both Commission hearings, Robert Sutherland, a petroleum engineer for Tabula Rasa Partner, LLC (Applicant's partner in the proposed carbon dioxide project) testified and presented data, including data requested by the Commission, as set forth below:

(a) The Unit Agreement for the Development and Operation of the East Hobbs (San Andres) Unit contains the following provision:

Section 18. Conservation: Operations hereunder and production of Unitized Substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by State laws and regulations. The use of fresh water in waterflood operations is prohibited unless expressly approved by the Commissioner of Public Lands on the basis of excessive technological or financial burden. (Exhibit 12)

(b) Commission Order No. R-11980-A, in Ordering Paragraph (9) states:

No fresh water shall be used as make-up water or otherwise injected.

(c) Linn desires to institute a carbon dioxide enhanced recovery project in the Unit, but needs to re-pressurize the reservoir to miscible pressure. It is estimated that re-pressurization will take two years.

(d) Linn examined water sources for the project for over one and one-quarter years. The search included fresh water and "grey" water, both from the City of Hobbs, as well as available produced (salt) water sources. At the Commission's request Linn also examined use of water from the Glorieta formation (via newly drilled wells) and carbon dioxide to re-pressurize the reservoir. (Exhibits 1 – 9)

(e) The economics of the various sources were analyzed, and the analysis included:

- (i) The total costs, both capital and expenses, assuming it takes two years to re-pressurize the Unit to miscible pressure;
  - (ii) The failure case, being the total costs, both capital and expenses, if after injecting for 6 months and fill-up progress is not met the project is terminated; and
  - (iii) The project delay time from the base case of using City fresh water as a make-up water source.
- (f) The only economical source of make-up fluid is fresh water from the City of Hobbs water system. The estimated two year costs of the alternative sources of make-up fluids are two and one-half to seventeen times more expensive than the City fresh water source. In addition, there are delays in using other fluid sources, and the closest grey water and Devonian salt water are not available.
- (g) Produced Devonian water, even if available, has scaling tendencies, and thus is technically unfeasible. City water is compatible with San Andres water.
- (h) The City of Hobbs is willing and able to sell water to Applicant based on its out-of-city industrial rates. In addition, Applicant will build the City, cost free, 3300 feet of water main. (Exhibit 10)
- (i) Industrial use of fresh water is common. Fresh water is used in fracing wells, with approximately seven fracturing jobs per week in the Oil Conservation Division's Hobbs District.
- (j) If a carbon dioxide enhanced recovery project is not instituted in the Unit 4,600,000 barrels of oil will be left in the ground, causing waste.
- (k) Linn has requested permission from the Commissioner of Public Lands to use fresh water in its project, but approval has not yet been granted. (Exhibit 11)

7. No other parties entered an appearance or presented evidence in this proceeding.

**THE COMMISSION CONCLUDES THAT:**

1. Substantial evidence supports the use of City of Hobbs fresh water as make-up water to re-pressurize the Unit's reservoir as the only method to institute a carbon dioxide enhanced recovery project without excessive technological problems or financial burden.
2. Using City of Hobbs fresh water will enable Unit operations to be conducted

to provide for the most economical and efficient recovery of unitized substances.

3. Instituting a carbon dioxide enhanced recovery project in the Unit will prevent waste and protect correlative rights.

4. Substantial evidence supports the amendment of Commission Order No. R-11980-A to remove Ordering Paragraph (9).

**IT IS THEREFORE ORDERED THAT:**

1. The application of Linn Operating, Inc. for an order amending Commission Order No. R-11980-A by eliminating Ordering Paragraph (9) is hereby approved with two Commissioners supporting the application and one Commissioner opposing.

2. The approval granted herein is subject to the following conditions:

(a) This order is subject to subsequent approval by the Commissioner of Public Lands, and Applicant shall inform the Commission of such approval;

(b) Injection of make-up water shall be limited to two years from date of first injection, and Applicant shall notify the Commission in writing of the date of commencement of injection of make-up water;

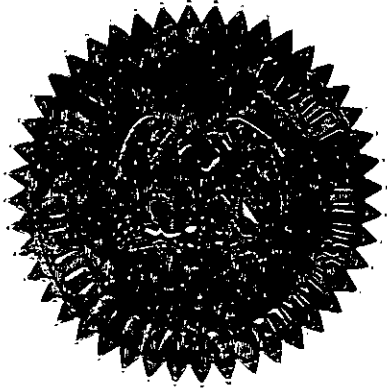
(c) Injection shall be limited to 8600 barrels of water per day; and

(d) Form C-115's filed with the Division by Applicant shall report fresh water injection as well as produced water use.

3. Jurisdiction is hereby retained for entry of such further orders as the Commission deems necessary.

DONE at Santa Fe, New Mexico on August 13, 2015.

**STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION**



SEAL

  
ROBERT BALCH, Member

 (OPPOSED)  
PATRICK PADILLA, Member

  
DAVID R. CATANACH, Chairman