

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

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

CASE NO. 11881
ORDER NO. R-10945

**APPLICATION OF SOUTHWEST ROYALTIES, INC. FOR A PRESSURE
MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on November 20 and December 18, 1997 at Santa Fe, New Mexico, before Examiner Michael E. Stogner, and on January 8, 1998 at Santa Fe, New Mexico, before David R. Catanach..

NOW, on this 29th day of January, 1998 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant in this matter, Southwest Royalties, Inc., is the current operator of two oil and gas leases in Section 15, Township 26 South, Range 33 East, NMPM, Lea County, New Mexico: (a) the Continental Federal lease (U. S. Government lease No. NM-02985-A), which comprises the SE/4 NW/4 of said Section 15; and (b) the Ammons Madera (fee) lease, which comprises the W/2 NW/4, SW/4, and S/2 SE/4 of said Section 15. Applicant seeks authority to institute a cooperative leasehold pressure maintenance project in the Salado Draw-Delaware Pool within the following described 360-acre area:

TOWNSHIP 26 SOUTH, RANGE 33 EAST, NMPM
Section 15: W/2 NW/4, SE/4 NW/4, SW/4 and S/2 SE/4.

(3) Within this 360-acre project area, Southwest Royalties, Inc. operates the following four wells, all of which are completed within the Salado Draw-Delaware Pool:

Well Name and Number	Footage Location (Unit Letter Designation)	API Number	Perforated Interval (feet)
Continental Federal Well No. 1	1980' FNL & 1650' FWL (F)	30-025-24110	5003 - 5013
Ammons Madera Well No. 1	1980' FSL & 990' FWL (L)	30-025-23992	5002 - 5085
Ammons Madera Well No. 3	1980' FS & WL (K)	30-025-32749	5046 - 5054
Ammons Madera Well No. 4	660' FSL & 1980' FWL (N)	30-025-33308	5030 - 5043

(4) At this time Southwest Royalties, Inc. proposes to convert the Ammons Madera Well No. 1, as described above, from a shut-in oil well to a water injection well, whereby produced salt water from the three aforementioned wells (the Continental Federal Well No. 1 and the Ammons Madera Well Nos. 2 and 3) is to be re-injected back into the Salado Draw-Delaware Pool through existing perforations (5002 feet to 5085 feet).

(5) Division records indicate that the average producing rate in 1997 for the three producing wells within the proposed project area was less than 10 barrels of oil per day; therefore, these wells are considered to be in an advanced state of depletion and can properly be classified as "stripper wells".

***FINDING:** Pursuant to Division General Rule 701.G, the proposed project should properly be classified as a "waterflood project" and not a "pressure maintenance project," as originally requested.*

(6) According to the testimony presented by the applicant at the time of the hearing, Southwest Royalties, Inc.'s primary intent with the proposed conversion of the Ammons Madera Well No. 1 is to dispose of produced salt water from its Continental Federal Well No. 1 and Ammons Madera Well Nos. 3 and 4 in Units "F", "K", and "N" of said Section 15.

***FINDING:** The close proximity of the Ammons Madera Well No. 1 to the three aforementioned producing wells (1,476 feet to the Continental Federal Well No. 1, 990 feet to the Ammons Madera Well No. 3, and 1,650 feet to the Ammons Madera Well No. 4) and the utilization of the existing perforations indicates that the injection of water into this relatively thin productive interval within the Delaware formation serves to displace liquid hydrocarbons thereby benefitting the three nearby Southwest Royalties, Inc. operated wells within the proposed waterflood project area.*

(7) No offset operator, mineral interest owner, or other interested party appeared at the hearing in opposition to the subject water reinjection request.

(8) The subject waterflood project, as proposed by the applicant, is in the best interest

of conservation, exhibits sound engineering practices, serves to prevent waste, and will not impair correlative rights.

(9) The applicant submitted data on the proposed conversion of the Ammons Madera Well No. 1, the three above-described Delaware producing oil wells within its proposed project area, fresh water wells in the general area, and all other wells (including plugged wells) which penetrate the zone of interest within a ½-mile area-of-review ("AOR") of the subject injection well. This data shows that wells in the AOR are cased and/or plugged so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the AOR.

(10) The operator should take all steps necessary to ensure that the injected water enters only that specific injection interval within the Salado Draw-Delaware Pool and is not permitted to escape into other hydrocarbon productive intervals within the Salado Draw-Delaware Pool, other formations, or onto the surface from injection, production, or plugged and abandoned wells.

(11) The reinjection of produced Delaware formation water into the Ammons Madera Well No. 1 should be accomplished through 2 3/8-inch internally lined or plastic coated tubing installed in a packer set no higher than 100 feet above the top of the upper most perforation; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak-detection device should be attached to the annulus in order to determine leaks in the casing, tubing or packer.

(12) Prior to commencing injection operations, the casing in the subject well should be pressure tested throughout the interval, from the surface down to the proposed packer-setting depth, to assure integrity of such casing.

(13) The injection well or its pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 1000 psi. The Division Director however should have the authority to increase said pressure limitation, should circumstances warrant.

(14) The operator should give advance notice to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(15) The approved "project area" should be designated the "*Continental Federal-Ammons Madera Fee Cooperative Leasehold Waterflood Project*" and is to comprise the 360 acres, as described above in Finding Paragraph No. (2).

(16) The injection authority granted herein for the proposed injection wells should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(17) The subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Southwest Royalties, Inc., is hereby authorized to institute a cooperative leasehold waterflood project on its Continental Federal lease (U. S. Government lease No. NM-02985-A) and its Ammons Madera (fee) lease by the reinjection of produced salt water into the Salado Draw-Delaware Pool in its existing Ammons Madera Well No. 1 (API No. **30-025-23992**), located 1980 feet from the South line and 990 feet from the West line (Unit L) of Section 15, Township 26 South, Range 33 East, NMPM, Lea County, New Mexico.

(2) The subject cooperative leasehold waterflood project, hereby designated the "*Continental Federal-Ammons Madera Fee Cooperative Leasehold Waterflood Project*," shall be comprised of the following described 360-acre area in Lea County, New Mexico:

TOWNSHIP 26 SOUTH, RANGE 33 EAST, NMPM
Section 15: W/2 NW/4, SE/4 NW/4, SW/4 and S/2 SE/4.

(3) Southwest Royalties, Inc., as operator, shall take all steps necessary to ensure that the injected water only enters and remains confined to the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(4) Injection into the Ammons Madera Well No. 1 shall be through 2 3/8-inch internally lined or plastic coated tubing with injection into the perforated interval from approximately 5,002 feet to 5,085 feet.

(5) The tubing string in said well shall be installed in a packer set no higher than 100 feet above the upper most perforation; the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the casing, tubing or packer.

(6) Said injection well or its pressurization system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1000 psi.

(7) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation herein placed on said Ammons Madera Well No. 1 upon a proper showing by the operator that such higher pressure will not result in the migration of the injected waters from this thin injection interval within the Salado Draw-Delaware Pool.

(8) Prior to commencing injection operations, the casing in the subject well shall be

pressure tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Hobbs District Office.

(9) The operator shall notify the supervisor of the Hobbs District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(10) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing, or packer in said injection well or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(11) Should it become necessary, the supervisor of the Hobbs District Office of the Division or the Division Director may at any time order a decrease of the injection pressure within said Ammons Madera Well No. 1.

(12) The operator of the Continental Federal-Ammons Madera Fee Cooperative Leasehold Waterflood Project shall conduct injection operations in accordance with all applicable Division rules, regulations, and policies, including Division General Rules 701 through 708 and shall submit monthly progress reports in accordance with Division General Rules 706 and 1115.

(13) The injection authority granted herein for said Ammons Madera Well No. 1 shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(14) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

KATHLEEN A. GARLAND
Acting Director