STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 9068
Order No. R-8423

APPLICATION OF SAGE ENERGY COMPANY
FOR SALT WATER DISPOSAL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on February 4, 1987, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 9th day of April, 1987, 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, Sage Energy Company, is the owner and operator of the New Mexico State Well No. 1 located 560 feet from the North and East lines (Unit A) of Section 31, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) The applicant proposes to utilize said well to dispose of produced salt water into the Bough "C" member of the Cisco formation within the West Tres Papalotes-Pennsylvanian Pool, with injection into the perforated interval from approximately 10,401 feet to 10,410 feet.

(4) John Etcheverry of Lovington, New Mexico, a mineral interest owner in Section 29, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico, appeared at the hearing, with council, and objected to the Oil Conservation Division's jurisdiction in such matters, stating that the Division would be authorizing "underground trespass" of the disposed fluids onto his adjoining property if this application were approved.

(5) The water to be disposed of is from the following three wells operated by the applicant and completed in the Bough "C" zone:

New Mexico "30" State Well No. 1 located 1980 feet from the South line and 800 feet from the East line (Unit I) of Section 30;

New Mexico State Well No. 2 located 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 31; and,

New Mexico State Well No. 3 located 1160 feet from the North line and 560 feet from the East line (Unit A) of Section 31;

All in Township 14 South, Range 34 East.

(6) The subject well was completed on December 15, 1971, in the Bough "C" zone in the same perforated interval as is being requested for injection purposes at this time. In 1982 the well developed holes in the casing across the San Andres formation, and although this leak was repaired, mud damage to the Bough "C" zone limited its capacity and it was subsequently shut-in.

(7) Comulative production from the subject well is 387,995 barrels of oil, 3407 barrels of water, and 338,590 MCF of gas.

(8) The nearest Bough "C" producing well to the subject disposal well is the aforementioned Well No. 3 located approximately 600 feet to the South and presently producing approximately 32 barrels of oil per day and 45 barrels of water per day.

(9) At the hearing the applicant proposed to limit the injection into the subject well at a rate not to exceed 200 barrels per day and agreed to limit the injection to hydrostatic pressure at the face of the formation.

(10) The evidence presented by Sage Energy demonstrates that there are no known fractures or permeability orientations in the pool which would cause premature water breakthrough from the subject well to the New Mexico State Well No. 3.

(11) From the foregoing, it is reasonable to conclude that the subject disposal well, at the proposed disposal rates, will eventually act like a water injection well and cause water to move oil towards Well No. 3, resulting in the recovery of oil that might not otherwise be recovered.

(12) Combined with the rate of reservoir withdrawal, disposal rate, and the amount of production of the reservoir by both the subject well and Well No. 3, the rate at which the injected water will migrate towards Well No. 3 is extremely small.

(13) Accordingly and pursuant to the evidence presented in this case, the injection and recycling of the produced water as proposed will not cause the premature and irregular encroachment of water into the surrounding producing wells, will not cause the drowning by water of a formation capable of producing oil, and will not reduce the total ultimate recovery of oil from the pool.

(14) 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 the integrity of such casing.

(15) The injection should be accomplished through 2-inch plastic-lined tubing installed in a packer set at approximately 10,361 feet; 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 leakage in the casing, tubing or packer.

(16) The injection well or system should be equipped with a pressure-limiting switch or other acceptable device which will not allow any pressure on the wellhead.

(17) The operator should give advance notification to the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(18) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(19) An increase in the injection pressure or disposal rate should be granted only after notice and hearing.

(20) Approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Sage Energy Company, is hereby authorized to utilize its New Mexico State Well No. 1 located 560 feet from the North and East lines (Unit A) of Section 31, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico, to dispose of produced salt water at a rate not to exceed 200 barrels of water per day into the West Tres Papalotes-Pennsylvanian Pool, injection to be accomplished through 2-inch tubing installed in a packer set at approximately 10,361 feet, with injection into the perforated interval from approximately 10,401 feet to 10,410 feet;

PROVIDED HOWEVER THAT, the tubing shall be plastic-lined; 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.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure integrity of such casing in a manner that is satisfactory to the supervisor of the Division's district office at Hobbs.

(2) Injection into said well shall be limited to hydrostatic pressure at the face of the formation; a pressure-limiting switch or other acceptable device which will not allow any pressure on the wellhead shall be installed and maintained.

(3) An increase in the injection pressure or disposal rate shall be granted only after notice and hearing.

(4) 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 disposal equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(5) 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 well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) The applicant shall conduct disposal operations and submit monthly reports in accordance with Rules 702, 703, 704, 705, 706, 708, and 1120 of the Division Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

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