

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. 9826  
ORDER NO. R-8505-A

APPLICATION OF SAGE ENERGY COMPANY  
FOR WATERFLOOD EXPANSION, DIRECTIONAL  
DRILLING, AND TO AMEND DIVISION ORDER  
NO. R-8505, LEA COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on November 29, 1989, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 9<sup>th</sup> day of February, 1990, 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) At the time of the hearing this case was consolidated with Division Case No. 9825 for the purpose of testimony.

(3) Division Order No. R-8505, issued in Case No. 9182 and dated September 4, 1987, authorized Sage Energy Company to initiate a pilot waterflood project on its New Mexico "30" State Lease by the injection of water into the Bough "C" member of the West Tres Papalotes-Pennsylvanian Pool into the No. 1 well on said lease located 1980 feet from the South line and 800 feet from the East line (Unit I) of Section 30, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico, through perforations from approximately 10,392 feet to 10,407 feet.

(4) Said Order No. R-8505 designated the above-described secondary recovery project the Sage Energy Company State "30" Lease Waterflood Project.

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(5) At this time, Sage Energy Company seeks to amend said Order No. R-8505 by redesignating said project the West Tres Papalotes Penn (Unit) Waterflood Project and to assign an area for the project to coincide with the boundary of their West Tres Papalotes Penn Unit Area, which was approved by Division Order No. R-9072, issued in Case No. 9825 and dated December 14, 1989, described as follows:

LEA COUNTY, NEW MEXICO

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM

Section 29: W/2  
 Section 30: E/2  
 Section 31: E/2  
 Section 32: NW/4

(6) Applicant further seeks to expand said project by re-entering the John Etchevery, Jr. "A" Well No. 2 located 2080 feet from the North line and 560 feet from the West line (Unit E) of Section 29, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico, and recomplete by side-tracking and directionally drilling from a kick-off point at approximately 5500 feet and bottom the well in the West Tres Papalotes-Pennsylvanian Pool at a depth of approximately 10,600 feet within 50 feet of a target point 1580 feet from the North line and 560 feet from the West line (Unit E) of said Section 29. The applicant proposes to utilize said well as a water injection well in said pool through perforations from approximately 10,402 feet to 10,470 feet.

(7) An injection well at said bottomhole location will better enable the applicant to complete an efficient waterflood injection pattern in the proposed project area.

(8) The one producing well to be integrated into the expanded waterflood project area, the John Etchevery, Jr. Well No. 1 located 1980 feet from the South line and 660 feet from the West line (Unit L) of said Section 29, is presently experiencing a response to the initial water injection well, as described in Finding Paragraph No. (2) above, which is only 1460 feet apart; however, the production prior to this response would properly classify the John Etchevery, Jr. Well No. 1 as a stripper well.

(9) The proposed waterflood expansion and further plan of operation should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(10) The applicant should be required to determine the subsurface location of the kick-off point in the wellbore prior to directional drilling and should subsequently be required to conduct an accurate wellbore survey during or upon completion of drilling operations from a kick-off point to total depth to determine its true depth and course.

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(11) The applicant should be required to notify the supervisor of the Hobbs district office of the Division of the date and time said directional surveys are to be conducted so that they may be witnessed. The applicant should further be required to provide a copy of said directional surveys to the Santa Fe and Hobbs offices of the Division upon completion.

(12) 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 into other formations or onto the surface from injection, production or plugged and abandoned wells.

(13) Injection should be accomplished through 2 7/8-inch plastic-coated tubing installed in a packer set at approximately 10,400 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 leaks in the casing, tubing or packer.

(14) Prior to commencing injection operations, the casing of 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.

(15) The injection well or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 2000 psi.

(16) The Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such high pressure will not result in migration of the injected waters from the West Tres Papalotes-Pennsylvanian Pool.

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

(18) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

**IT IS THEREFORE ORDERED THAT:**

(1) Decretory Paragraph No. (6) of Division Order No. R-8505, issued in Case No. 9182 is hereby rescinded and shall be amended to read as follows:

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"(6a) The subject waterflood project is hereby redesignated the Sage Energy Company West Tres Papalotes Penn (Unit) Waterflood Project and shall be comprised of the following described lands in Lea County, New Mexico:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM

Section 29: W/2  
Section 30: E/2  
Section 31: E/2  
Section 32: NW/4; and

(6b) Said waterflood project shall be governed by the provisions of Rules 701 through 708 of the Division General Rules and Regulations."

(2) The applicant, Sage Energy Company, is hereby authorized to expand said project by re-entering the John Etchevery, Jr. "A" Well No. 2 located 2080 feet from the North line and 560 feet from the West line (Unit E) of Section 29, Township 14 South, Range 34 East, NMPM, Lea County, New Mexico, and recomplete by side-tracking and directionally drilling from a kick-off point at approximately 5500 feet and bottom the well in the West Tres Papalotes-Pennsylvanian Pool at a depth of approximately 10,600 feet within 50 feet of a target point 1580 feet from the North line and 560 feet from the West line (Unit E) of said Section 29.

PROVIDED HOWEVER THAT, prior to the above-described directional drilling, the applicant shall establish the location of the kick-off point by conducting a continuous multi-shot directional survey of the well.

PROVIDED FURTHER THAT, during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined.

(3) The applicant shall notify the supervisor of the Hobbs district office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys to the Santa Fe and Hobbs offices of the Division upon completion.

(4) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

(5) Injection into said well shall be accomplished through 2 7/8-inch plastic-coated tubing installed in a packer set at approximately 10,400 feet, with injection into the open-hole interval from approximately 10,402 feet to 10,470 feet;

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PROVIDED HOWEVER THAT, 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 the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Hobbs District Office.

(6) The injection well or 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 2000 psi.

(7) The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the West Tres Papalotes-Pennsylvanian Pool.

(8) 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.

(9) 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.

(10) The subject well shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(11) All other provisions of Division Order No. R-8505 shall remain in full force and effect until further notice.

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

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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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