

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. 10640
ORDER NO. R-9853

**APPLICATION OF ARAPAHO OIL & GAS, INC. FOR
SALT WATER DISPOSAL, EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 17, 1992, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 8th day of March, 1993, 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, Arapaho Oil & Gas, Inc., seeks authority to dispose of produced salt water into the Lovington Sand member of the San Andres formation, Grayburg-Jackson (Seven Rivers-Queen-Grayburg-San Andres) Pool, through the perforated interval from approximately 2449 feet to 2464 feet, in its Cave State Well No. 3 located 1650 feet from the North line and 330 feet from the West line (Unit E) of Section 4, Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico.
- (3) The vertical limits of the Grayburg-Jackson Pool extend from the top of the Seven Rivers formation to the base of the San Andres formation, as described by Division Order No. R-5011, issued in Case 5461 and dated May 6, 1975. Prior to January, 1987 the general area surrounding the proposed disposal well was included in the Cave Grayburg-San Andres Pool, by Division Order No. R-8391, dated January 22, 1987, said Cave Pool was abolished and the Grayburg-Jackson Pool was extended to embrace the former Cave Pool boundary. In the general area surrounding the proposed

disposal well the hydrocarbon producing horizons in the Grayburg-Jackson Pool appear to be limited to two relatively thin layers of porosity locally distinguished as the "Premier Sand" found in the Grayburg formation and the "Lovington Sand" found in the San Andres formation. The "Premier Sand" in portions of the immediate area was subject to a previously approved waterflood project and associated unitization (Cave Pool Unit Waterflood Project), approved by Division Order Nos. R-2385 and R-2384.

(4) *Extensive review of the well records that are currently on file with the Division and evidence presented at the hearing indicates that within the half-mile "area of review" around the subject wellbore, which comprises portions of Sections 32 and 33, Township 16 South, Range 31 East, NMPM, and Sections 4 and 5, Township 17 South, Range 31 East, NMPM, all in Eddy County, New Mexico, there appear to exist fourteen wells that penetrate the "Lovington Sand" member of the Grayburg-Jackson Pool:*

- a) *The following eight wells within this area of review, all of which list the applicant as operator, appear to have perforations in the "Lovington Sand" and are currently producing from the Grayburg-Jackson Pool;*

*Livers Well No. 5 in Unit "M" of Section 33,
Livers Well No. 3-Y in Unit "N" of Section 33,
Cave State Well No. 5 in Unit "C" of Section 4,
Cave State Well No. 1 in Unit "D" of Section 4,
Cave State Well No. 4 in Unit "F" of Section 4,
Cave Pool Unit Well No. 19 in Unit "K" of Section 4,
Cave State Well No. 2 in Unit "H" of Section 5,
Red Twelve State Well No. 3 in Unit "I" of Section 5;*

- b) *Three wells, the applicant's State Well No. 2 in Unit "C" of Section 4, the Cave Pool Unit Well No. 12 in Unit "E" of Section 4, and the Hedges Federal Well No. 2 in Unit "A" of Section 5, appear to be completed open-hole in the "Lovington Sand" and are also currently producing from the Grayburg-Jackson Pool;*
- c) *The applicant's Theos State Well No. 1 in Unit "G" of Section 5, which is currently shown to be a shut-in Grayburg-Jackson oil well (last reported production was for May, 1989) appears to have perforations across the "Lovington Sand" interval;*
- d) *The Cave Pool Unit Well No. 8 in Unit "B" of Section 5 appears to have been plugged back from the "Lovington Sand" interval into the "Premier Sand" interval; and,*

- e) *The plugged and abandoned Highland Corporation Levers Fed. Well No. 4 in Unit "M" of Section 33 is somewhat questionable in that the "Lovington Sand" zone is included in an un-cemented interval of 250 feet between the bottom of the hole and the first plug.*

FINDING: Collectively considering the number of producing Grayburg-Jackson wells and the suspect nature of some of the aforementioned completions and/or pluggings of the aforementioned wells within the area of review, there is sufficient doubt that the injected fluids would be confined in the injection interval and the risk that a conduit for movement of such re-injected fluids to other formations by way of said wellbores is sufficient to warrant *denial* of this application.

(5) The applicant failed to provide adequate testimony to show that approval of this application at this time is in the best interest of conservation, would prevent the premature watering-out of productive horizons, would serve to prevent undue waste and would serve to protect correlative rights.

IT IS THEREFORE ORDERED THAT:

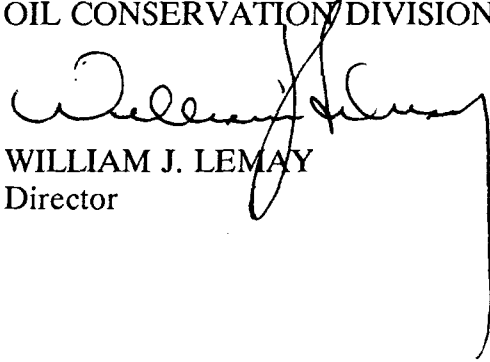
(1) The application of Arapaho Oil & Gas, Inc. to utilize its Cave State Well No. 3, located 1650 feet from the North line and 330 feet from the West line (Unit E), Section 4, Township 17 South, Range 29 East, NMPM, Eddy County, New Mexico, to dispose of produced salt water into the "Lovington Sand" member of the Grayburg-Jackson (Seven Rivers-Queen-Grayburg-San Andres) Pool, is hereby *denied*.

(2) 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