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. 10233
Order No. R-9474

APPLICATION OF MOBIL EXPLORATION
& PRODUCING U.S. INC., AS AGENT FOR
MOBIL PRODUCING TEXAS & NEW MEXICO INC.,
FOR APPROVAL OF 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 March 7 and March 21, 1991, at Santa Fe, New Mexico, before Examiners Jim Morrow and Michael E. Stogner, respectively.

NOW, on this 27th day of March, 1991, 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, Mobil Exploration & Producing U.S. Inc. as agent for Mobil Producing Texas & New Mexico Inc., (Mobil), seeks authority to dispose of produced salt water into the South Vacuum-Devonian Pool, in the open hole interval from approximately 11,800 feet to 13,970 feet in its State Section 27 Well No. 1 (proposed well) located 660 feet from the North line and 1983 feet from the East line (Unit B) of Section 27, Township 18 South, Range 35 East, NMPM, Lea County, New Mexico.

(3) Mobil plans to use the proposed well for disposal of lease and off-lease water. The well is needed as a back-up for the State Section 27 Well No. 2 which was approved by Oil Conservation Commission Order No. R-8645 on May 5, 1988.

(4) At the hearing Mobil submitted exhibits and testimony containing the following information and plans concerning the proposed well.

(a) It is plugged and abandoned with cement plugs at the surface, 1638 feet, and 11260 feet. 13 3/8-inch casing is set at 360 feet and 9 5/8-inch casing is set at 3,800 feet with cement circulated behind both strings. 7 5/8-inch casing set at 11,800 feet has been cut and pulled from 1,689 feet. Cement behind the 7 5/8-inch casing is from 11,800 feet to 1,715 feet. If approved, the proposed well would be cleaned out and deepened to 13,970 feet, pressure tested to ensure casing integrity, and 3 1/2-inch or 4 1/2-inch fiberglass lined tubing would be run and set in a packer at 11,750 feet. The tubing-casing annulus would be loaded with packer fluid.

(b) From a closed system, water would be injected down the tubing into the open-hole Devonian-Fusselman interval between 11,800 feet and 13,970 feet. The Devonian portion of the injection interval is below the abandoned Devonian production section, 11,650 to 11,668 feet which has been cement squeezed with 150 sacks. Average and maximum injection rates would be 10,000 and 20,000 barrels per day. The proposed well is expected to take water on a vacuum. A maximum injection pressure of 2390 psi is being requested.

(c) Based on compatibility test of Devonian water and produced waters which indicate probable scale formation, Mobil plans a scale prevention program.

(5) The following information concerning the area surrounding the proposed disposal well was submitted by Mobil through its exhibits and the testimony of its witnesses:

(a) Structure maps of the South Vacuum-Devonian Pool show a major Northwest-Southeast trending fault with an upthrown Southwest block which has been and continues to be oil productive.

(b) Devonian production from the pool has been from 14 wells located in Sections 21, 22, 26, and 27, Township 18 South, Range 35 East. Currently there are four productive wells in the Southeast part of the Pool; all are operated by Unocal. Average daily per well production

from the four wells is 20 bbls. of oil and 1,876 barrels of water. Currently there are also two former Devonian producers which are used as disposal wells. The Fusselman, non-productive in this pool, is included in the disposal interval in Mobil's State Section 27 Well No. 2 and the proposed well.

(c) The Mobil State Section 27 Well No. 2 located 1869 feet Southeast of the proposed well has been a very successful disposal well. Water injection into the 27 Well No. 2 since June 1990 has averaged approximately 6,000 barrels per day at O psi (Vacuum) surface injection pressure. Tracer surveys run in March 1988 and January 1991 show that most of the injected water is entering a lower Devonian interval from approximately 12,040 feet to 12,100 feet.

(d) The Mobil State Section 27 Well No. 2 is the only well within one-half mile of the proposed well which penetrates the proposed injection interval. It is properly constructed to prevent the migration of injected fluids from the disposal interval.

(e) Fresh water is present in the Ogalalla formation at 300 feet and the Santa Rosa at 1,400 feet. There is no evidence of open faults or other hydrological connection between the Devonian Formation and any underground source of drinking water. A water sample from a well in the area identified as the "Snyder Windmill" indicated a chloride concentration of 50 mg/liter.

(6) Snyder Ranches, Inc. protested this application and through its witness, Mr. Larry C. Squires, submitted the following testimony:

(a) Snyder Ranches lands have been damaged in the past by potash operations and oil field operations.

(b) The "Snyder Windmill" water sample came from some location other than the approximate location identified by Mobil's witness.

(c) Snyder Ranches is not protesting the granting of Mobil's application in this case, but is requesting that OCD require additional tests to ensure that fresh water in the area is being protected.

(d) Snyder Ranches is concerned that a recent water blow-out in the area may have been caused by injection operations.

(7) Additional tests and procedures to ensure fresh water protection were discussed at the hearing by Mobil and Snyder Ranches as follows:

(a) Require more frequent mechanical integrity pressure tests.

(b) Maintain pressure on the tubing-casing annulus.

(c) Periodic sampling of Snyder Ranches water well located approximately one-half mile East of Mobil's proposed well.

(8) Following the hearing, correspondence was received from Mobil requesting that the tests and procedures set out in Findings (7)(b) and (7)(c) above not be required, but recommending annual pressure testing as an additional permit requirement. Mobil also submitted a written request that the record in Case No. 9337 be included as a part of the record in this case.

(9) Snyder Ranches Inc. submitted a letter following the hearing suggesting that Mobil hire an independent water laboratory to sample the Snyder Ranches water well on a quarterly basis.

(10) The subject application indicates that Mobil would comply with OCD rules and requirements in operating the proposed well as a disposal well and that fresh water resources and oil and gas accumulations would not be adversely affected. Approval of the application is in the interest of conservation, and would prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Mobil Exploration & Producing U.S. Inc. as agent for Mobil Producing Texas & New Mexico Inc., is hereby authorized to dispose of produced salt water into the South Vacuum-Devonian Pool, in the open hole interval from approximately 11,800 feet to 13,970 feet in its State Section 27 Well No. 1 located 660 feet from the North line and 1983 feet from the East line (Unit B) of Section 27, Township 18 South, Range 35 East, NMPM, Lea County, New Mexico.

PROVIDED HOWEVER THAT, injection shall be through 3 1/2-inch or

4 1/2-inch fiberglass lined tubing set in a packer at approximately 11,750 feet, the tubing-casing annulus shall be filled with an inert packer 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 and annually thereafter, the casing in the subject well shall be pressure tested to assure the integrity of such casing in a manner and at a time that is satisfactory to the supervisor of the Division's district office at Hobbs, New Mexico.

(2) 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 2360 psi (0.2 psi per foot).

(3) The Director of the Division may authorize an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the San Andres formation.

(4) The operator shall notify 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 tests 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) Personnel from the Division's Hobbs district office shall contact Snyder Ranches Inc. personnel on or about April 1 and October 1, 1991 and 1992 and arrange to collect a water sample from the Snyder Ranch Inc. water well in Section 26 approximately one-half mile East of Mobil's proposed well. Chloride analysis of the samples shall be kept on file at the Hobbs office. After 1992, the Supervisor of the Hobbs office shall determine whether additional sampling is needed.

(8) 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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