NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

*ADMINISTRATIVE ORDER NO. WFX-687*

***APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD PROJECT IN THE GRAYBURG JACKSON POOL IN EDDY COUNTY, NEW MEXICO***

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-2268 as amended, Devon Energy Corporation has made application to the Division on March 26, 1996 for permission to expand its Keel-West Unit Waterflood Project in the Grayburg Jackson Pool in Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been filed in due form.

(2) Satisfactory information has been provided that all offset operators have been duly notified of the application.

(3) No objection has been received within the waiting period as prescribed by Rule 701(B).

(4) The proposed injection wells are eligible for conversion to injection under the terms of Rule 701.

(5) The proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.

(6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Devon Energy Corporation, be and the same is hereby authorized to inject water into the Grayburg and San Andres formations at approximately 2483 feet to approximately 3950 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the wells described on Exhibit "A" attached hereto, for purposes of secondary recovery.

IT IS FURTHER ORDERED THAT:

Prior to commencing injection operations into the J.L. Keel 'B' No.34 and the J.L. Keel 'B' No.37, the operator shall re-enter the Everts (Grier) Well No.1, located 330' FSL & 330' FEL in Section 31, Township 16 South, Range 31 East, NMPM, Eddy County, New Mexico, and plug and abandon the well in a manner satisfactory to the supervisor of the Artesia District Office of the Division.

The operator shall 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.

Prior to commencing injection operations into the wells, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection wells to no more than .2 psi per foot of depth to the uppermost injection perforations or open hole interval.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said wells that such higher pressure will not result in migration of the injected fluid from the Grayburg or San Andres formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Artesia district office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity tests so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing or packer in said wells and shall take such steps as may be timely and necessary to correct such failure or leakage.

The subject wells shall be governed by all provisions of Division Order No. R-2268, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein shall 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.

DONE at Santa Fe, New Mexico, on this 19th day of June, 1996.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

cc: Oil Conservation Division - Artesia

**EXHIBIT "A"**
DIVISION ORDER NO. WFX-687
***KEEL-WEST UNIT WATERFLOOD PROJECT***
APPROVED INJECTION WELLS

* Conditions apply to these wells prior to injection.

| *Well Name* | *Well No.* | *Location* | *Unit* | *S-T-R* | *Injection Interval* | *Packer Depth* | *Tubing Size* | *Injection Pressure* |
|---|---|---|---|---|---|---|---|---|
| J.L. Keel "A" | 3 | 330' FNL & 1650' FWL | C | 7-17S-31E | 2801'-3575' | 2750' | 2 3/8" | 560 |
| J.L. Keel "A" | 6 | 660' FSL & 660' FEL | P | 7-17S-31E | 2483'-3485' | 2800' | 2 3/8" | 497 |
| J.L. Keel "A" | 10 | 1980' FSL & 660' FEL | I | 7-17S-31E | 2834'-3571' | 2750' | 2 3/8" | 567 |
| J.L. Keel "A" | 28 | 1989' FSL & 2001' FEL | J | 7-17S-31E | 2770'-3550' | 2750' | 2 3/8" | 554 |
| J.L. Keel "A" | 30 | 430' FSL & 2013' FEL | O | 7-17S-31E | 2754'-3619' | 2700' | 2 3/8" | 551 |
| J.L. Keel "B" | 5 | 1980' FSL & 660' FEL | I | 8-17S-31E | 2802'-3504' | 2750' | 2 3/8" | 560 |
| J.L. Keel "B" | 9 | 1980' FNL & 660' FEL | H | 5-17S-31E | 3082'-3950' | 3050' | 2 3/8" | 616 |
| J.L. Keel "B" | 10 | 660' FNL & 1980' FEL | B | 8-17S-31E | 3019'-3813' | 2950' | 2 3/8" | 604 |
| J.L. Keel "B" | 13 | 660' FSL & 1980' FEL | O | 5-17S-31E | 2992'-3731' | 2950' | 2 3/8" | 598 |
| J.L. Keel "B" | 14 | 660' FSL & 660' FEL | P | 5-17S-31E | 3059'-3728' | 3000' | 2 3/8" | 612 |
| J.L. Keel "B" | 19 | 1980' FSL & 1980' FEL | J | 5-17S-31E | 3006'-3700' | 2950' | 2 3/8" | 601 |
| J.L. Keel "B" | 31 | 1980' FNL & 1980' FEL | G | 6-17S-31E | 2853'-3700' | 2800' | 2 3/8" | 571 |
| J.L. Keel "B" | 34* | 1880' FNL & 660' FEL | H | 6-17S-31E | 2866'-3657' | 2800' | 2 3/8" | 573 |
| J.L. Keel "B" | 36 | 1980' FNL & 1980' FWL | F | 5-17S-31E | 2977'-3709' | 2900' | 2 3/8" | 595 |
| J.L. Keel "B" | 37* | 1780' FNL & 660' FWL | H | 5-17S-31E | 2945'-3711' | 2900' | 2 3/8" | 589 |
| J.L. Keel "B" | 45 | 1930' FNL & 1830' FEL | G | 5-17S-31E | 3048'-3856' | 3000' | 2 3/8" | 610 |
| J.L. Keel "B" | 72 | 2230' FSL & 760' FEL | I | 5-17S-31E | 3082'-3858' | 3000' | 2 3/8" | 616 |
| Hudson Federal | 1 | 660' FNL & 660' FEL | A | 18-17S-31E | 2795'-3533' | 2750' | 2 3/8" | 559 |
| Hudson Federal | 6 | 2310' FNL & 990' FEL | H | 18-17S-31E | 2782'-3469' | 2700' | 2 3/8" | 556 |

| Well Name | Well No. | Location | Unit | S-T-R | Injection Interval | Packer Depth | Tubing Size | Injection Pressure |
|---|---|---|---|---|---|---|---|---|
| C.A. Russell | 6 | 990' FNL & 1384' FWL | C | 18-17S-31E | 3209'-3650' | 3150' | 2 3/8" | 642 |
| C.A. Russell | 7 | 1650' FNL & 1384' FWL | F | 18-17S-31E | 3176'-3535' | 3100' | 2 3/8" | 635 |
| C.A. Russell | 8 | 1650' FNL & 1650' FEL | G | 18-17S-31E | 2880'-3497' | 2800' | 2 3/8" | 576 |
| C.A. Russell | 9 | 660' FNL & 1980' FEL | B | 18-17S-31E | 2941'-3465' | 2900' | 2 3/8" | 588 |
| C.A. Russell | 10 | 2200' FNL & 2665' FEL | G | 18-17S-31E | 2896'-2948' | 2850' | 2 3/8" | 579 |
| C.A. Russell | 11 | 1000' FNL & 2350' FWL | C | 18-17S-31E | 3402'-3511' | 3350' | 2 3/8" | 680 |
| Turner "A" | 3 | 2220' FSL & 1760' FWL | K | 18-17S-31E | 3045'-3509' | 3000' | 2 3/8" | 609 |
| Turner "A" | 9 | 330' FNL & 1980' FEL | B | 19-17S-31E | 3348'-3530' | 3300' | 2 3/8" | 670 |
| Turner "A" | 10 | 1980' FSL & 1830' FEL | J | 18-17S-31E | 3342'-3453' | 3300' | 2 3/8" | 668 |
| Turner "A" | 11 | 660' FSL & 660' FEL | P | 18-17S-31E | 3330'-3437' | 3300' | 2 3/8" | 666 |
| Turner "A" | 12 | 330' FNL & 660' FEL | A | 19-17S-31E | 2960'-3370' | 2900' | 2 3/8" | 592 |
| Turner "A" | 13 | 1980' FSL & 660' FEL | I | 19-17S-31E | 2910'-3600' | 2850' | 2 3/8" | 582 |
| Turner "A" | 15 | 1650' FNL & 1980' FWL | F | 19-17S-31E | 2910'-3444' | 2850' | 2 3/8" | 582 |
| Turner "A" | 35 | 1800' FNL & 660' FEL | H | 19-17S-31E | 2930'-3380' | 2900' | 2 3/8" | 586 |
| Turner "A" | 36 | 1800' FNL & 1980' FEL | G | 19-17S-31E | 2934'-3418' | 2900' | 2 3/8" | 587 |
| Turner "A" | 56 | 585' FSL & 1800' FWL | N | 18-17S-31E | 2700'-3770' | 2650' | 2 3/8" | 540 |
| Turner "A" | 57 | 580' FNL & 1905' FWL | B | 19-17S-31E | 2650'-3700' | 2600' | 2 3/8" | 530 |
| Turner "A" | 58 | 560' FSL & 1880' FEL | O | 18-17S-31E | 2650'-3600' | 2600' | 2 3/8" | 530 |

All wells in Eddy County, New Mexico