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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. 9637  
Order No. R-8966

APPLICATION OF GRAND RESOURCES  
INC. FOR A WATERFLOOD PROJECT,  
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 26, 1989, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 9th day of August, 1989, 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, Grand Resources Inc., seeks authority to institute a waterflood project in its proposed Mesa Gallup Unit (being the subject of Division Case No. 9673) located in all or portions of Sections 10, 11, 14, 15, 23, 24 and 25 of Township 32 North, Range 18 West, NMPM, San Juan County, New Mexico, all as projected into the unsurveyed Navajo Indian Reservation, by the injection of water into the Gallup formation, designated and Undesignated Mesa-Gallup Oil Pool, through the gross perforated interval from approximately 1110 feet to 1392 feet in four existing wells shown on Exhibit "A" attached hereto and made a part hereof.

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(3) The Mesa-Gallup Oil Pool currently comprises some 1040 acres in Township 32 North, Range 18 West, NMPM, and the Mesa Gallup Unit Area comprises some 2680 acres in said Township 32 North, Range 18 West, NMPM.

(4) The wells currently located in the Mesa-Gallup Oil Pool are in an advanced state of depletion and should properly be classified as "stripper wells".

(5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) The proposed Mesa Gallup Unit Area contains a substantial amount of acreage that is currently undeveloped in the Mesa-Gallup Oil Pool.

(7) In order to assure the orderly development of the Mesa Gallup Unit Area, the proposed waterflood operations should be initially limited to the area that currently comprises the Mesa-Gallup Oil Pool, described as follows, and hereinafter referred to as the Project Area.

TOWNSHIP 32 NORTH, RANGE 18 WEST, NMPM

Section 10: S/2 SE/4

Section 14: NW/4 SW/4, E/2 SW/4, and W/2 SE/4

Section 15: NW/4 NE/4, E/2 NE/4, and NE/4 SE/4

Section 23: NE/4

Section 24: W/2

Section 25: NE/4 NW/4 and N/2 NE/4

(8) The Division Director should have the authority to administratively authorize expansion of the Project Area by placing additional wells on injection and/or production upon proper application by the operator.

(9) 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.

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(10) In order to assure that the injected water enters only the injection formation and is not allowed to escape to other formations which may reduce the effectiveness of the proposed waterflood operations, the wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth to the uppermost injection perforation in each injection well, provided however, the Division Director should have the authority to authorize an increase in said injection pressure, should circumstances warrant.

(11) Prior to commencing injection operations into the wells shown on Exhibit "A", the applicant should be required to obtain the appropriate Federal and/or Indian injection permits in accordance with the requirements of 40 CFR Part 147.

(12) The application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Oil Conservation Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Grand Resources Inc., is hereby authorized to institute a waterflood project in a portion of its Mesa Gallup Unit Area (described in Exhibit "A" of Division Order No. R-8957), by the injection of water into the Gallup formation, designated and Undesignated Mesa-Gallup Oil Pool, through the gross perforated interval from approximately 1110 feet to 1392 feet in four existing wells shown on Exhibit "A" attached hereto and made a part hereof, all located in Township 32 North, Range 18 West, NMPM, San Juan County, New Mexico.

(2) The proposed waterflood operations shall be initially limited to the area that currently comprises the Mesa-Gallup Oil Pool, described as follows, and hereinafter referred to as the Project Area.

TOWNSHIP 32 NORTH, RANGE 18 WEST, NMPM

Section 10: S/2 SE/4  
Section 14: NW/4 SW/4, E/2 SW/4, and W/2 SE/4  
Section 15: NW/4 NE/4, E/2 NE/4, and NE/4 SE/4  
Section 23: NE/4  
Section 24: W/2  
Section 25: NE/4 NW/4 and N/2 NE/4

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(3) The Division Director shall have the authority to administratively authorize expansion of the Project Area by placing additional wells on injection and/or production upon proper application by the operator.

(4) Injection into each of the wells shown on said Exhibit "A" shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost injection perforation; the casing-tubing annulus in each well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.

(5) The operator shall immediately notify the supervisor of the Division's Aztec district office of the failure of the tubing, casing, or packer in any of said injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from or around any plugged and abandoned well within the project area and shall take such steps as may be timely and necessary to correct such failure or leakage.

(6) The injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit the injection pressure at the wellhead to no more than 0.2 psi per foot of depth to the uppermost perforations therein (as more fully described in Exhibit "A"), provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(7) Prior to commencing injection operations, the casing in each of the wells shown on Exhibit "A" shall be pressure-tested from the surface to the proposed packer setting depth to assure the integrity of such casing.

(8) The operator shall notify the supervisor of the Aztec 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.

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(9) Prior to commencing injection operations into the wells shown on Exhibit "A", the applicant shall be required to obtain the appropriate Federal and/or Indian injection permits in accordance with the requirements of 40 CFR Part 147.

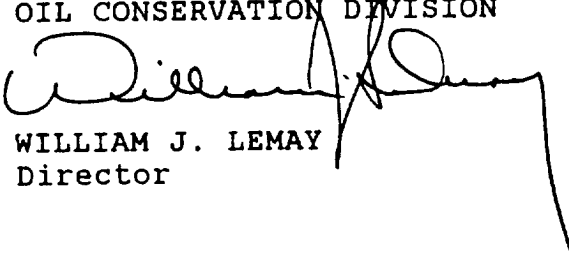
(10) The subject waterflood project is hereby designated the Mesa Gallup Unit Waterflood Project and shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(11) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(12) 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

S E A L

EXHIBIT "A"  
CASE NO. 9637  
ORDER NO. R-8966  
MESA GALLUP UNIT WATERFLOOD PROJECT INJECTION WELLS

| <u>WELL &amp; LOCATION</u>                                             | <u>MAXIMUM SURFACE<br/>INJECTION PRESSURE</u> |
|------------------------------------------------------------------------|-----------------------------------------------|
| <u>TOWNSHIP 32 NORTH, RANGE 18 WEST, NMPM</u>                          |                                               |
| Navajo "C" Well No. 1<br>1700' FNL & 685' FEL, Unit (H)✓<br>Section 15 | 245 PSIG                                      |
| Navajo Well No. 3<br>660' FSL & 1980' FWL, Unit (N)<br>Section 24      | 222 PSIG                                      |
| Navajo Well No. 11<br>330' FNL & 1650' FEL, Unit (B)✓<br>Section 23    | 276 PSIG                                      |
| Navajo Well No. 4<br>1650' FSL & 1710' FEL, Unit (J)✓<br>Section 14    | 263 PSIG                                      |