

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. 9743
ORDER NO. R-9007

APPLICATION OF MURPHY OPERATING
CORPORATION FOR A WATERFLOOD PROJECT,
ROOSEVELT COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on September 6, 1989, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 13th day of October, 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) At the time of the hearing, this case was consolidated with Division Case No. 9742 for the purpose of testimony.

(3) The applicant, Murphy Operating Corporation, seeks authority to institute a waterflood project in its proposed Jennifer Chaveroo San Andres Unit Area (being the subject of Division Case No. 9742), by the injection of water into the San Andres formation, designated and Undesignated Chaveroo-San Andres Pool, as found in that stratigraphic interval between 4,116 and 4,424 feet as measured on the Compensated Formation Density Log run in the Murphy

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Operating Corporation Hobbs "W" Well No. 2 on August 18, 1966, said well located 330 feet from the North line and 990 feet from the East line (Unit A) of Section 30, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico, through 44 existing wells all within the Unit Area and as further described in Exhibit "A" attached hereto and made a part hereof.

(4) It is proposed that the waterflood project coincide with the boundary of the proposed Jennifer Chaveroo San Andres Unit Area, which was the subject of said Case No. 9742 heard in conjunction with this, described as follows:

ROOSEVELT COUNTY, NEW MEXICO

TOWNSHIP 7 SOUTH, RANGE 33 EAST, NMPM

Section 25: All
Section 26: S/2
Sections 35 and 36: All

TOWNSHIP 7 SOUTH, RANGE 34 EAST, NMPM

Sections 18, 19 and 20: All
Section 21: NW/4
Section 29: N/2, SW/4, SW/4 SE/4, S/2 SE/4
Section 30: All

(5) The initial project area for purposes of allowable under Rule 701 should include all of Section 35 and the S/2 S/2 of Section 26, Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico. As additional wells are placed on injection, the project area should automatically expand to include the proration units on which those injection wells are located and all direct or diagonally offset proration units within the project which have producing wells thereon.

(6) Within the waterflood project there are five Division Orders currently in effect authorizing the injection of water into the San Andres formation:

- (a) R-3544, which authorized the institution of a pilot waterflood project in the Chaveroo-San Andres Pool by the injection of water into the Hobbs "W" Well No. 9 located in the SE/4 NW/4 (Unit F) of Section 29, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico;
- (b) R-3577, which authorized a pressure maintenance project in the Chaveroo-San Andres Pool by the injection of water into the State "V" Well No. 3 located in Lot 3 (Unit K) of Section 30, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico;
- (c) R-3578, which in part authorized a pressure maintenance project in the Chaveroo-San Andres Pool by the injection of water into the State "DF" Well No. 1 located in the NE/4 SE/4 (Unit I) of Section 25, Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico;
- (d) R-3596, allowed the State Well No. 1 located in the SW/4 NE/4 (Unit G) of Section 36, Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico, to be utilized as a salt water disposal well into the Chaveroo-San Andres Pool; and,
- (e) R-7809, which authorized the institution of a waterflood project in the Chaveroo-San Andres Pool by the injection of water into the State "DB" Well No. 6 located in the SW/4 SW/4 (Unit M) of Section 25, Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico.

(7) The applicant proposes to continue injection operations into the Hobbs "W" Well No. 9 (a) and State Well No. 1 (d); the State "DF" Well No. 1 (c) and State "DB" Well No. 6 (e) will be converted into producing wells and the State "V" Well No. 3 (b), which was authorized for a pressure maintenance injection well but was never utilized as such, will be converted into an injection well.

(8) The wells in the project area are in an advanced state of depletion and should be properly classified as "stripper wells."

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

(10) 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.

(11) Division Order Nos. R-3544, R-3577, R-3596 and R-7809 should be rescinded in their entirety at this time and all injection operations into those wells covered in these orders should cease immediately.

(12) That portion of Division Order No. R-3578 concerning the State "DF" Well No. 1 should also be rescinded at this time, and all injection operations into this well should cease immediately.

(13) The injection of water into each of the injection wells in the project should be accomplished through internally plastic-lined tubing installed in a packer set approximately 100 feet above the uppermost perforation and the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(14) Prior to commencing injection into any of the wells herein authorized by this order, regardless of its present status, the casing should be pressure-tested throughout the interval from the surface down to the proposed packer-setting depth, to assure the integrity of the casing.

(15) The injection wells or injection pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 800 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 a higher pressure will not result in migration of the injected waters from the San Andres formation.

(17) The Director of the Division should also have the authority to administratively approve expansion of the waterflood project by placing additional wells or redesignating those wells subject to this order on injection and/or production upon proper application by the operator.

(18) 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/or of the mechanical integrity pressure-test in order that the same may be witnessed.

(19) 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) The applicant, Murphy Operating Corporation, is hereby authorized to institute and operate a waterflood project within the Jennifer Chaveroo San Andres Unit Area (Division Case No. 9742) by the injection of water into the unitized interval which shall include the San Andres formation found in that stratigraphic interval between 4,116 and 4,424 feet as measured on the Compensated Formation Density Log run in the Murphy Operating Corporation Hobbs "W" Well No. 2 on August 18, 1966, said well located 330 feet from the North line and 990 feet from the East line (Unit A) of Section 30, Township 7 South, Range 34 East, NMPM, designated and Undesignated Chaveroo-San Andres Pool, Roosevelt County, New Mexico. The unitized formation shall further include all subsurface points throughout the Unit Area correlative to the aforementioned identified depths.

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(2) The waterflood project, hereby designated the Jennifer Chaveroo San Andres Unit Waterflood Project, shall be comprised of the following described lands in Roosevelt County, New Mexico:

TOWNSHIP 7 SOUTH, RANGE 33 EAST, NMPM

Section 25: All
Section 26: S/2
Sections 35 and 36: All

TOWNSHIP 7 SOUTH, RANGE 34 EAST, NMPM

Sections 18, 19 and 20: All
Section 21: NW/4
Section 29: N/2, SW/4, SW/4 SE/4, S/2 SE/4
Section 30: All

(3) Said waterflood project shall consist of 44 injection wells as shown on Exhibit "A" attached hereto and made a part hereof.

(4) The initial project area for purposes of allowable under Rule 701 shall be Section 35 and the S/2 S/2 of Section 26, Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico. As additional wells are placed on injection, the project area shall automatically expand to include the proration units on which those injection wells are located and all direct or diagonally offset proration units within the project which have producing wells thereon.

(5) Prior to commencing injection operations into any of the wells herein authorized by this order, regardless of its present status, the casing in each of the subject wells 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) Injection into each of the said wells shall be through internally coated tubing installed in a packer set approximately 100 feet above the uppermost perforation; the

casing-tubing annulus in each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak-detection device.

(7) Each 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 800 psi.

(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 Hobbs District Office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(10) The Director of the Division shall be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such a higher pressure will not result in migration of the injected waters from the San Andres formation.

(11) The Director of the Division shall also have the authority to administratively approve expansion of the waterflood project by placing additional wells or redesignating those wells subject to this order on injection and/or production upon proper application by the operator.

(12) The Jennifer Chaveroo San Andres Unit Waterflood Project shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

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(13) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

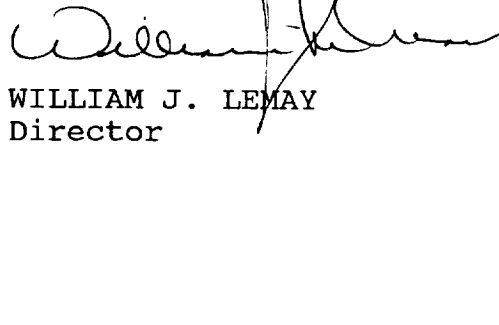
(14) Division Order Nos. R-3544, R-3577, R-3596 and R-7809 shall be rescinded in their entirety and all injection operations into those wells approved by these orders shall cease operations until such time as any wells affected have met proper authorization by the provisions of this order.

(15) The portion of Division Order No. R-3578 concerning the State "DF" Well No. 1 should also be rescinded and any injection operations for this well shall cease until such time as said well meets the provisions and terms of this order.

(16) 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

A handwritten signature in dark ink, appearing to read 'William J. Lemay', is written over the typed name. A long, thin vertical line extends from the bottom of the signature down towards the bottom of the page.

WILLIAM J. LEMAY
Director

S E A L

EXHIBIT "A"
CASE NO. 9743
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JENNIFER CHAVEROO SAN ANDRES
UNIT WATERFLOOD PROJECT

TABLE OF PROPOSED INJECTION WELLS

Unit Well Designation & Number	Former Well Name and Number	Footage Location	Unit-Section Township-Range	Proposed TSG/Packer Depth (ft)	Proposed Injection Interval (ft)
25-02	State "J" No. 1	660' FNL - 1980' FEL	B-25-7S-33E	4065/4068	4168 - 4275
25-04	State "DB" No. 1	660' FN & WL	D-25-7S-33E	4071/4074	4174 - 4336
25-06	State "DB" No. 5	1980' FL & WL	F-25-7S-33E	4079/4082	4182 - 4350
25-08	State No. 1	1980' FNL & 660' FEL	H-25-7S-33E	4093/4096	4196 - 4308
25-10	State "I" No. 1	1980' FS & EL	J-25-7S-33E	4100/4103	4203 - 4340
25-12	State "DB" No. 4	1980' FSL & 660' FWL	L-25-7S-33E	4105/4108	4208 - 4363
25-14	State "DB" No. 8	660' FSL & 1980' FWL	N-25-7S-33E	4102/4105	4205 - 4341
25-16	State "J" No. 4	990' FS & EL	P-25-7S-33E	4150/4153	4253 - 4365
26-10	Federal "26" No. 5	1980' FS & EL	J-26-7S-33E	4057/4060	4160 - 4274
26-12	Federal "26" No. 2	1980' FSL & 660' FWL	L-26-7S-33E	4039/4042	4142 - 4292
26-14	Federal "26" No. 4	660' FSL & 1980' FWL	N-26-7S-33E	3897/3900	4000 - 4294
26-16	Federal "26" No. 8	660' FS & EL	P-26-7S-33E	4050/4053	4153 - 4290
35-02	State "CV" No. 2	660' FNL & 1980' FEL	B-35-7S-33E	4058/4061	4161 - 4303
35-04	Shackelford No. 1	660' FN & WL	D-35-7S-33E	4064/4067	4167 - 4318
35-06	State Section "35" No. 3	1980' FN & WL	F-35-7S-33E	4083/4086	4186 - 4326
35-08	State Section "35" No. 5	1980' FNL & 660' FEL	H-35-7S-33E	4153/4156	4256 - 4327

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Unit Well Designation & Number	Former Well Name and Number	Footage Location	Unit-Section Township-Range	Proposed TSG/Packer Depth (ft)	Proposed Injection Interval (ft)
35-10	Hobbs "T" No. 14	1980' FS & EL	J-35-7S-33E	4104/4107	4207 - 4329
35-12	State Section "35" No. 1	1980' FSL & 660' FWL	L-35-7S-33E	4141/4144	4244 - 4334
35-14	State "DE" No. 1	660' FSL & 1980' FWL	N-35-7S-33E	4104/4107	4207 - 4336
35-16	Hobbs "T" No. 19	660' FS & EL	P-35-7S-33E	4084/4087	4187 - 4358
36-02	State Section "36" No. 1	660' FNL & 2310' FEL	B-36-7S-33E	4126/4129	4229 - 4321
36-04	State "K" No. 1	660' FN & WL	D-36-7S-33E	4081/4084	4184 - 4331
36-06	State "K" No. 6	1980' FN & WL	F-36-7S-33E	4114/4117	4217 - 4325
36-07	Chaveroo SWD No. 1	1980' FN & EL	G-36-7S-33E	4060/4063	4163 - 4460
36-12	State "K" No. 4	1980' FSL & 660' FWL	L-36-7S-33E	4141/4144	4244 - 4345
18-15	Wolf Federal No. 3	660' FSL & 2151' FEL	O-18-7S-34E	3961/3964	4064 - 4267
19-01	Wolf Federal No. 4	660' FN & EL	A-19-7S-34E	3990/3993	4093 - 4280
19-03	Hinkle Federal No. 2	990' FNL & 330' FWL	C-19-7S-34E	3958/3961	4061 - 4205
19-07	Wolf Federal No. 1	1980' FNL & 2310' FEL	G-19-7S-34E	4005/4008	4108 - 4298
19-09	State "G" No. 5	1650' FSL & 990' FEL	I-19-7S-34E	4012/4015	4115 - 4259
19-11	State "G" No. 1	1980' FSL & 660' FWL	K-19-7S-34E	4016/4019	4119 - 4215
19-15	State "G" No. 4	660' FSL & 2310' FEL	O-19-7S-34E	4035/4038	4138 - 4275
20-03	Homme Federal No. 2	660' FNL & 1980' FWL	C-20-7S-34E	4049/4052	4152 - 4298
20-05	Homme Federal No. 1	1980' FNL - 660' FWL	E-20-7S-34E	3990/3993	4093 - 4294

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Unit Well Designation & Number	Former Well Name and Number	Footage Location	Unit-Section Township-Range	Proposed T86/Packer Depth (ft)	Proposed Injection Interval (ft)
20-05	Homme Federal No. 1	1980' FNL ~ 660' FWL	E-20-7S-34E	3990/3993	4093 - 4294
20-11	NM State "20" No. 3	1980' FS & WL	K-20-7S-34E	4061/4064	4164 - 4305
20-13	NM State "20" No. 2	660' FS & WL	M-20-7S-34E	4053/4056	4156 - 4289
29-03	Hobbs "W" No. 8	330' FNL & 1650' FWL	C-29-7S-34E	4123/4126	4226 - 4355
29-05	Hobbs "W" No. 7	1650' FNL & 330' FWL	E-29-7S-34E	4115/4118	4218 - 4357
29-06	Hobbs "W" No. 9	1650' FN & WL	F-29-7S-34E	4266/4269	4369 - 4443
30-01	Hobbs "W" No. 2	330' FNL & 990' FEL	A-30-7S-34E	4056/4059	4159 - 4308
30-03	State "V" No. 1	660' FN & WL	C-30-7S-34E	4007/4010	4110 - 4298
30-07	Hobbs "W" No. 3	1650' FNL & 1980' FEL	G-30-7S-34E	4094/4097	4197 - 4337
30-09	State "V" No. 4	2310' FSL & 990' FEL	I-30-7S-34E	4139/4142	4242 - 4354
30-11	State "V" No. 3	2314' FSL & 330' FWL	K-30-7S-34E	4111/4114	4214 - 4344