



KERR-MCGEE CORPORATION

KERR-MCGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

PLEASE REPLY TO

EXPLORATION AND PRODUCTION DIVISION
U.S. ONSHORE REGION
P. O. BOX 25861
OKLAHOMA CITY, OKLAHOMA 73125

PHONE

April 1, 1989

405 848-9750

Mr. Floyd O. Prando
Director, Oil & Gas Division
State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Mr. William J. LeMay, Director
State of New Mexico
Energy and Mineral Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: PLAN OF OPERATION 1989
Proposed K-M Chaveroo
San Andres Unit
Chaveroo San Andres Field
Chaves, New Mexico

Gentlemen:

Pursuant to the provisions of Section 11A. of the Unit Agreement, Kerr-McGee Corporation, designated Unit Operator of the proposed K-M Chaveroo San Andres Unit, Chaves County, New Mexico, respectfully submits for your consideration and approval, this Plan of Operation for the secondary recovery of oil by waterflood on the subject unitized land.

- I. Proposed Plan of Operation 1989: Kerr-McGee hereby proposes that the K-M Chaveroo San Andres Unit ("the Unit"), consisting of 1,280.37 acres, as more particularly delineated on the map contained in Exhibit 1 attached hereto, be formed for the purpose of secondary recovery by the waterflood method. This proposed Unit currently consists of a total of nineteen (19) producing wells and one (1) salt water disposal well. Ultimately, it is planned that the Unit will consist of nine (9) injection wells, ten (10) producing wells, and one (1) salt water disposal well.

As presented on Exhibit 1 attached, Kerr-McGee plans to construct a water injection plant in the NW/4 of Section 2, Township 8 South, Range 33 East, to service the Unit area. This plant will be constructed in such a manner to provide approximately 3,150 barrels of water per day for ample injection capability. The planned location was chosen because of its proximity to existing roads and electrical service and its central location to the proposed injection wells. A series of individual and trunk injection lines will radiate to provide injection service to the individual injection wells.

Supplemental water will be purchased from the most economical source which is available in this area. The fresh water will be supplied from the Ogallala formation which is present at an approximate depth of 185 to 240 feet below the surface. This water, combined with the San Andres produced water, has been deemed compatible by chemical analysis and previous experience in this area of New Mexico. A water supply line will be constructed from a source in Sections 8 and 9, Township 7 South, Range 34 East to the K-M Chaveroo San Andres Unit.

- II. Operating Guidelines: Kerr-McGee plans to monitor all injection wells through injection rate and pressure checks. Approximately 90 to 120 days after the initiation of injection into any given well, a tracer survey will be run in order to measure injection profiles and to determine if water channeling is occurring. If water channeling or unacceptable injection profiles are observed, appropriate remedial work will be performed. As wells are converted to injection status, the annuli of each well will be filled with packer fluid containing corrosion inhibiting chemicals. The downhole integrity of each injection well will be determined by "pressuring up" the annulus of each well and maintaining a positive pressure of 300 psig for at least thirty (30) minutes. The procedure for conversion to injection status and all remedial and drilling operations will be performed in strict adherence to the Rules and Regulations of the Oil Conservation Division and other regulatory agencies.
- III. Modification: Subject to approval, this Plan of Operation may be modified or supplemented during the year to meet changed conditions and to protect the interests of all parties to the Unit Agreement.

IV. State Lands: Exhibit 1a is a letter from Floyd O. Prando dated May 3, 1988 which reflects the State of New Mexico has ownership of the royalty in Section 1 and 2, T-8S, R-33E, Chaves County, New Mexico. This is the area that Kerr-McGee Corporation is proposing to implement a waterflood project for the secondary recovery of oil and gas.

Should you have any questions or comments, please contact the undersigned.

Respectfully submitted,

KERR-MCGEE CORPORATION



RJQ:lrg01

Exhibit 1: Map of proposed K-M Chaveroo San Andres Unit.

cc: Mr. Jerry E. Sexton
State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240-1980

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF KERR-MCGEE
CORPORATION FOR UNIT APPROVAL AND
FOR AUTHORITY TO INSTITUTE A WATERFLOOD PROJECT,
CHAVES COUNTY, NEW MEXICO.

SUPPLEMENTAL DATA REQUIRED
BY FORM C-108

- I. The purpose of this Application is for secondary recovery.
- II. The operator is Kerr-McGee Corporation of Post Office Box 25861, Oklahoma City, Oklahoma 73125, contact parties: Mr. F. B. Chambers, Mr. R. J. Quance, telephone (405) 848-9750.
- III. The well data, in both tabular and schematic form, for each well proposed for injection is attached as Exhibit 2.
- IV. This is not an expansion of an existing project.
- V. Exhibit 1 is a map identifying all wells and leases within two miles of each proposed injection well with a one-half mile radius circle drawn around each proposed injection well. The circle identifies the well's area of review.
- VI. Attached hereto as Exhibit 3 is a tabulation of well data for all wells within the proposed Unit Area. Exhibit 4 contains a tabulation of well data for wells outside the proposed Unit Area but within the "area of review". Also attached as Exhibit 5 are schematics (illustrating all plugging detail) and copies of state reports of any plugged well within the area of review.
- VII. Data on the proposed operation:
 1. It is projected that an average of 3,150 barrels of water per day will be initially injected.
 2. The proposed waterflood system shall be a closed system.
 3. It is proposed that water will be injected at an average surface pressure of 800 psig and at a maximum surface pressure of 0.2 psi per foot of depth to top of injection zone, provided that surface pressure in excess of 0.2 psi per foot of depth to injection zone may be approved by administrative application pursuant to Oil Conservation Division rules and regulations.
 4. The water to be used for injection for the waterflood project shall be acquired from the closest and most economical sources in the immediate area of the proposed Unit.

Attached hereto as Exhibit 6 are chemical analyses and compatibility analyses of the proposed injection fluid (fresh water samples from possible sources) with that of the receiving Chaveroo San Andres formation (sample from tank battery on State "F" Lease located within the proposed Unit Area).
 5. Not applicable.
- VIII. Attached hereto is geological data related to the injection zone including appropriate lithological detail, geological name, thickness and depth. This exhibit contains:

Exhibit 7 - Engineering and Geological Report - Proposed K-M Chaveroo San Andres Unit, prepared by R. J. Quance.
- IX. The proposed stimulation program, if any, is included with information contained in the Plan of Operation 1989.

X. Appropriate logging and perforating intervals for the proposed injection wells are attached as Exhibit 10.

XI. Kerr-McGee's analysis of fresh water obtained from two 500' supply wells located on the State "FU" lease is attached hereto as Exhibit 6. A letter dated February 29, 1988 from S. E. Reynolds, State Engineer advises that leases located in Sections 1 and 2, Township 8 South, Range 33 East is not within a declared underground water basin in the State of New Mexico, is attached hereto as Exhibit 14.

XII. Not applicable.

XIII. Attached hereto as Exhibit 15 is proof that copies of the application have been furnished by certified mail to: a) the owner of the surface of the land on which the proposed injection wells are to be located; and b) to the leasehold operators within one-half mile of the proposed injection wells.

XIV. Certification.

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: R. J. Quance

Title: Senior Staff Engineer
Kerr-McGee Corporation

Signature:



Date: April 1, 1989

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

May 3, 1988

U. S. Onshore Oper.
MAY 06 1988
E & P DIV.

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

Kerr-McGee Corporation
Exploration and Production Division
P. O. Box 25861
Oklahoma City, Oklahoma 73125

Re: Section 1 and 2, T-8S, R-33E, Chaves County, New Mexico

Attn: R. J. Quance

Gentlemen:

In connection with your letter dated April 26, 1988, the Oil Conservation Division has jurisdiction over the formation of secondary or other enhanced recovery projects which require water or other types of injection. Mike Stogger (505-827-5811) with the Oil Conservation Division can advise you as to the feasibility of forming cooperative agreements between one or more operators for the purpose of secondary recovery by water injection.

We created a work copy map which reflects the ownership in the areas that you have high-lighted in your map. Both maps are being returned herewith.

If you proceed with this project, you will be required to develop any fresh water wells in the name of the Land Commissioner. You may contact our John Tysseling (505-827-5752) if need any further detailed information as to the proper procedures on fresh water wells.

Very truly yours,

W. R. Humphries
Commissioner of Public Lands

A handwritten signature in cursive script, appearing to read "Floyd O. Prando".

By: Floyd O. Prando, Director
Oil and Gas Division
A/C 505-827-5744

WRH:FOP:cw
Enclosures

SUPPLEMENTAL DATA REQUIRED
BY FORM C-108

INDEX OF EXHIBITS

- Exhibit 1 - Map identifying all wells and leases within two miles of each proposed injection well (two-mile boundary highlighted in yellow). A one-half mile radius circle (drawn in red) around each proposed injection well identifies the wells' areas of review. Chart, "Redesignation of Well Names" listing original well names of wells within the Unit Area together with corresponding redesignated well names.
- Exhibit 1a - Letter dated May 3, 1988 from Floyd D. Prando that shows the leases located in Section 1 and 2, Township 8 South, Range 33 East are owned by the State of New Mexico.
- Exhibit 2 - Well data, in both tabular and schematic form, for each well proposed for injection.
- Exhibit 3&3a - Tabulation of data for all wells of public record within the proposed Unit Area.
- Exhibit 4&4a - Tabulation of data for all wells of public record outside the proposed Unit Area but within the "area of review".
- Exhibit 5 - Schematics (illustrating all plugging detail) of any plugged and abandoned well within the area of review.
- Exhibit 6 - Chemical analyses and compatibility analyses of the proposed injection fluid (fresh water samples from possible sources) with that of the receiving Chaveroo San Andres formation (sample from tank battery on State "F" Lease located within the proposed Unit Area). A map of Kerr-McGee water supply wells and windmills in the area is shown on Exhibit 6 A.
- Exhibit 7 - Engineering and Geological Report - Proposed K-M Chaveroo San Andres Unit, prepared by R. J. Quance.
- Exhibit 8 - Well data for proposed Unit.
- Exhibit 9 - Report dated November, 1966 prepared by Roswell Geological Society Symposium.
- Exhibit 10 - Log cross-section prepared for proposed Kerr-McGee Unit.
- Exhibit 11 - Production for 1988 - Proposed K-M Chaveroo San Andres Unit.
- Exhibit 12 - Decline Curves for Leases within Unit Area.
- Exhibit 13 - Proposed K-M Chaveroo San Andres Unit - Derivation of Tract Participation Factors.
- Exhibit 14 - Letter dated February 29, 1988 from S. E. Reynolds that shows the leases located in Section 1 and 2, Township 8 South, Range 33 East is not located within a declared underground water basin in the State of New Mexico.
- Exhibit 15 - Proof that copies of the application have been furnished by certified mail to: a) the owner of the surface of the land on which the proposed injection wells are to be located; and b) to the leasehold operators within one-half mile of the proposed injection wells.

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR LEASE
 KERR-MCGEE CORPORATION STATE "F"
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE
 1 660' FNL & 660' FWL 2 8S 33E

Schematic

Attached

Tubular Data

Surface Casing
 Size 8-5/8 " Cemented with 275 gx.
 TOC surface feet determined by circ out 20 sxs
 Hole size 12 1/4"

Intermediate Casing

Size " Cemented with gx.
 TOC feet determined by
 Hole size "

Long string

Size 5 1/2 " Cemented with 300 gx.
 TOC 3200 feet determined by temperature survey
 Hole size 7-7/8"
 Total depth 4380'

Injection Interval

4211 feet to 4345 feet
 (perforated ~~XXXXXXXXXXXX~~, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 (modified epoxy w/phenolic set in a
(motor oil) primer) packer at 4111 ± feet
Baker Loc Set
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres
2. Name of Field or Pool (if applicable) Chaveroo Field
3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #1
Chaveroo Field
Chaves County, New Mexico

WELL SCHEMATIC		CASING	Size 8-5/8"	Weight 24	Grade J-55	Thread ST&C	Depth 405'
		CASING	5-1/2"	14	J-55	8rd	4,380'
		TUBING	2-3/8"	4.7	J-55	EUE	4,111'
		TUBING					
		DESCRIPTION OF EQUIPMENT					DEPTH
		8-5/8" csg cemented to surface w/275 sxs					405'
		TOC (temp survey)					3,200'
		2-3/8" tubing					4,111'
		Baker Loc Set packer					4,111'
		San Andres perms: 1 shot/ft @ 4211', 4218', 4228', 4238', 4260', 4288', 4292', 4299', 4305', 4310', 4313', 4322', 4327', 4339' & 4341' (15 holes). Perf w/4JSPF 4200-40', 4255-75' & 4285-4345 (480 holes)					
		PBD					4,352'
		5 1/2" casing cemented w/300 sxs					4,380'
		TD					4,380'
		Prepared By			Date		

OPERATOR _____ LEASE _____
 KERR-MCGEE CORPORATION STATE "F"
 WELL NO. 4 FOOTAGE LOCATION 1980' FNL & 1980' FWL SECTION 2 TOWNSHIP 8S RANGE 33E

Schematic

Attached

Tubular Data

Surface Casing
 Size 8-5/8" Cemented with 275 gx.
 TOC surface feet determined by circulated out 35 sxs
 Hole size 12 1/4"
Intermediate Casing
 Size " Cemented with gx.
 TOC feet determined by
 Hole size
Long string
 Size 5 1/2" Cemented with 350 gx.
 TOC 3050 feet determined by calculation
 Hole size 7-7/8"
 Total depth 4430'

Injection Interval

4200 feet to 4328 feet
 (perforated ~~xxxxxxx~~, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" Lined with Baker plastic cap 505 set in a
(Modified epoxy w/Phenolic primer)
(material) _____ feet
Baker Loc Set _____ packer at 4100± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the Injection formation San Andres
2. Name of Field or Pool (if applicable) Chaveroo Field
3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? Oil Well
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #4
CHAVEROO FIELD
CHAVES COUNTY, NEW MEXICO

WELL SCHEMATIC	CASING	Size 8-5/8"	Weight 24	Grade J-55	Tool JST&C	Depth 433'	
<p>The schematic shows a well with a casing section from 0 to 433' and a tubing section from 433' to 4,100'. A Baker Lok Set Packer is located at 4,100'. San Andres perforations are shown between 4,200' and 4,328'. The well ends at 4,430'.</p>	CASING	5-1/2"	14	J-55	8rd	4,430'	
	TUBING	2-3/8"	4.7	J-55	EUE	4,100'	
	DESCRIPTION OF EQUIPMENT						DEPTH
	8-5/8" csg cemented to surface w/275 sxs						433'
	TOC (calc)						3,050'
	2-3/8" tubing						4,100'
	Baker Lok Set Packer						4,100'
	San Andres perfs: 1 SPF @ 4200', 4210', 4215', 4218', 4224', 4231', 4235', 4267', 4280', 4294', 4297', 4301', 4305', 4309', 4318', 4321' & 4328' (17 holes)						
	PBSD						4,398'
5 1/2" csg cemented w/350 sxs						4,430'	
TD						4,430'	
Prepared By G. Bunas					Date 1-12-89		

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR	KERR-MCGEE CORPORATION			LEASE	
WELL NO.	FOOTAGE LOCATION	STATE "F"	SECTION	TOWNSHIP	RANGE
5	1980' FSL & 660' FWL	2	2	8S	33E

Schematic

Attached

Tubular Data

Surface Coating

Size 8-5/8 " Cemented with 275 gx.
 TOC surface feet determined by circulated out 10 sxs
 Hole size 12 1/4

Intermediate Coating

Size _____ " Cemented with _____ gx.
 TOC _____ feet determined by _____
 Hole size _____

Log string

Size 5 1/2 " Cemented with 350 gx.
 TOC 2970 feet determined by calculation
 Hole size 7-7/8"
 Total depth 4346'

Injection Interval

4208 feet to 4331 feet
 (per formation or x-ray logs, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer)
(material)

Baker Lok Set packer at 4108 ± feet
(brand and model)

(or describe any other casing-tubing seal).
Other Data

1. Name of the injection formation San Andres

2. Name of field or pool (if applicable) Chaveroo Field

3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging details (bags of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #5
 Chaveroo Field
 Chaves County, New Mexico

WELL SCHEMATIC		CASING	Size 8-5/8"	Weight 24	Grade J-55	Thread 8rd	Depth 429'
		CASING	5-1/2"	14	J-55	8rd	4,346'
		TUBING	2-3/8"	4.7	J-55	EUE	4,108'
		TUBING					
DESCRIPTION OF EQUIPMENT							DEPTH
8-5/8" csg cemented to surface w/275 sxs							429'
TOC (Calc)							2,970'
2-3/8" tubing							4,108'
Baker Lok Set packer							4,108'
San Andres perfs: 1 SPF @ 4208', 4225', 4234', 4240', 4247', 4252', 4261', 4295', 4306', 4310', 4315', 4317', 4320', 4325', 4327', 4329' & 4331' (17 holes)							
PBTB							4,343'
5 1/2" casing cemented w/350 sxs							4,346'
TD							4,346'
Prepared By					Date		
C. Runyon					1/18/00		

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR LEASE
 KERR-MCGEE CORPORATION STATE "F"
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE
 7 1980' FSL & 1980' FEL 2 8S 33E

Schematic

Attached

Inbular Data

Surface Casing

Size 8-5/8 " Cemented with 275 nx.

TOC surface feet determined by circulated out 15 sxs

Hole size 12 1/4"

Intermediate Casing

Size " Cemented with nx.

TOC feet determined by

Hole size

Long string

Size 5 1/2 " Cemented with 350 nx.

TOC 2960 feet determined by calculation

Hole size 7-7/8"

Total depth 4337'

Injection Interval

4219 feet to 4328 feet
 (perforated or ~~open~~, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer)
(material)

Baker Loc Set 4119 ± packer at _____ feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Chaveroo Field

3. Is this a new well drilled for injection? Yes No

If no, for what purpose was the well originally drilled? oil well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #7
 Chaveroo Field
 Chaves County, New Mexico

WELL SCHEMATIC	CASING	Size	Weight	Grade	Thread	Depth
			8-5/8"	24	J-55	8rd
	CASING	5-1/2"	14	J-55	8rd	4,337'
	TUBING	2-3/8"	4.7	J-55	PIPE	4,119'
	TUBING					
	DESCRIPTION OF EQUIPMENT					DEPTH
	8-5/8" csg cemented to surface w/275 sxs					404'
	TOC (Calc)					2,960'
	2-3/8" tubing					4,119'
	Baker Loc Set Packer					4,119'
	San Andres perms: 1 SPF @ 4219', 4227', 4229', 4235', 4241', 4247', 4253', 4258', 4264', 4303', 4312', 4317', 4319', 4321', 4324' & 4328' (16 shots)					
	PBD					4,330'
	5 1/2" csg cemented w/350 sxs					4,337'
	TD					4,337'
	Prepared By				Date	

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR LEASE

KERR-MCGEE CORPORATION STATE "F"

WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE

10' 990' FSL & 1980' FWL 2 8S 33E

Schematic

Attached

Inbulator Data

Surface Casing

Size 8-5/8 " Cemented with 275 gx.

TOC surface feet determined by circulated out 15 sxs

Hole size 12 1/4"

Intermediate Casing

Size " " Cemented with " gx.

TOC " feet determined by "

Hole size "

Long string

Size 5 1/2 " Cemented with 350 gx.

TOC 2960 feet determined by calculation

Hole size 7-7/8"

Total depth 4336'

Injection Interval

4238 feet to 4331 feet

(perforated or ~~perforated~~ indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer)
(material)

Baker Lok Set packer at 4138 ± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the Injection formation San Andres
2. Name of Field or Pool (if applicable) Chaveroo Field
3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #10
Chaveroo Field
Chaves County, New Mexico

WELL SCHEMATIC		Size	Weight	Grade	Thread	Depth
		8-5/8"	24	J-55	8rd	407'
		5-1/2"	14	J-55	8rd	4,336'
		2-3/8"	4.7	J-55	8rd	4,138'
DESCRIPTION OF EQUIPMENT						DEPTH
8-5/8" casing cemented to surface w/275 sxs						407'
TOC (Calc)						2,960'
2-3/8" Tubing						4,138'
Baker Loc Set Packer						4,138'
San Andres perfs: 1 SPF @ 4238', 4239', 4245, 4248',						
4250, 4263', 4264', 4265', 4282', 4283', 4306', 4310',						
4319', 4322', 4325', 4327', 4329' & 4331' (18 holes)						
PBSD						4,334'
5 1/2" casing cemented w/350 sxs						4,336'
TD						4,336'
Prepared By						Date

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR LEASE
 KERR-MCGEE CORPORATION STATE "F"
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE
 13 990' FSL & 1980' FEL 2 8S 33E

Schematic

Attached

Tubular Data

Surface Casing

Size 8-5/8 " Cemented with 275 nx.

TOC surface feet determined by circulated out 10 sxs

Hole size 12 1/4

Intermediate Casing

Size " Cemented with nx.

TOC feet determined by

Hole size

Long string

Size 5 1/2 " Cemented with 350 nx.

TOC 2965 feet determined by calculation.

Hole size 7-7/8"

Total depth 4340'

Injection Interval

4241' feet to 4336 feet
 (perforated or ~~apertured~~ indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer)
(material)

Baker Lok Set packer at 4141 ± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Chaveroo Field

3. Is this a new well drilled for injection? Yes No

If no, for what purpose was the well originally drilled? oil well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE "F" #13
Chaveroo Field
Chaves County, New Mexico

WELL SCHEMATIC	CASING	Size	Weight	Grade	Thread	Depth
	CASING	8-5/8"	24	J-55	8rd	401'
	CASING	5-1/2"	14	J-55	8rd	4,340'
	TUBING	2-3/8"	4.7	J-55	EUE	4,141'
	TUBING					
DESCRIPTION OF EQUIPMENT						DEPTH
8-5/8" casing cemented to surface w/275 sxs						401'
TOC (Calc)						2,965'
2-3/8" tubing						4,141'
Baker Lok Set Packer						4,141'
San Andres perms: 1 SPF @ 4241', 4243', 4244', 4246', 4247', 4256', 4266', 4268', 4271', 4273', 4275', 4292', 4306', 4319', 4321', 4326', 4332', 4334', 4335', 4336' (20 holes)						
PBD						4,338'
5 1/2" casing cemented w/350 sxs						4,340'
TD						4,340'
Prepared By C. Rinas					Date 1/17/80	

INJECTION WELL DATA SHEET

SIDE 1

OPERATOR LEASE
 Kerr-McGee Corporation State Tract "C"
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE
 1 660' FNL & 1980' FEL 2 8S 33E

Schematic

Attached

Tubular Data

Surface Casing

Size 8-5/8 " Cemented with 250 px.
 TOC surface foot determined by circulation
 Hole size 11"

Intermediate Casing

Size " Cemented with px.
 TOC feet determined by

Long string

Size 4 1/2 " Cemented with 375 px.
 TOC 2557 feet determined by calculation

Hole size 7-7/8"

Total depth 4500'

Injection interval

4204 feet to 4347 feet
 (perforated or ~~XXXXXX~~ XXXXXX, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer) (material)
Baker Lok Set packer at 4104 ± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres
2. Name of Field or Pool (if applicable) Chaveroo Field
3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

STATE TRACT "C" #1
Chaveroo Field
Chaves County, New Mexico

WELL SCHEMATIC	CASING	Size	Weight	Grade	Thread	Depth
	CASING	8-5/8"	24	J-55	8rd	372'
	CASING	4-1/2"	10.5	J-55	8rd	4,500'
	TUBING	2-3/8"	4.7	J-55	EUE	4,104'
	TUBING					
DESCRIPTION OF EQUIPMENT						DEPTH
8-5/8" casing cemented to surface w/250 sxs						372'
TOC (Calc)						2,557'
2-3/8" tubing						4,104'
Baker Loc Set Packer						4,104'
San Andres perms: 1 SPF @ 4204', 4224', 4235', 4265', 4280', 4294', 4298', 4308', 4316', 4333', 4347'						
(11 holes)						
PBTB						4,390'
4 1/2" casing cemented w/375 sxs						4,500'
TD						4,500'
Prepared By C. Runas				Date 1/12/80		

OPERATOR LEASE
 KERR-MCGEE CORPORATION STATE TRACT "C"
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE
 3 1980' FNL & 660' FEL 2 8S 33E

Schematic

Attached

Tubular Data

Surface Casing
 Size 8-5/8 " Cemented with 250 px.
 TOC surface feet determined by circulation
 Hole size 11"
Intermediate Casing
 Size " Cemented with px.
 TOC feet determined by
 Hole size
Long string
 Size 4½ " Cemented with 375 px.
 TOC 2418 feet determined by calculation
 Hole size 7-7/8"
 Total depth 4500'

Injection Interval

4236 feet to 4380 feet
 (perforated or ~~annular~~, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 net in a
(modified epoxy w/phenolic primer)
(material) _____ feet
Baker Lok Set _____ packer at 4136 ± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres
2. Name of Field or Pool (if applicable) Chaveroo Field
3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 2-3/8" lined with Baker plastic cap 505 set in a
(modified epoxy w/Phenolic primer)
(material)

Baker Lok Set packer at 4144 ± feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Chaveroo Field

3. Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? oil well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

EXHIBIT 3

TABULATION OF WELL DATA FOR WELLS WITHIN THE PROPOSED UNIT AREA
 PROPOSED K-M CHAVEROO SAN ANDRES UNIT
 CHAVES COUNTY, NEW MEXICO

TRACT OPERATOR LEASE #	WELL #	UNIT	NEW UNIT WELL #	WELL STATUS	COMPLETION DATE	DATUM ELEVATION FEET	TD OF PBTD FEET	CSG RECORD SIZE INCHES	DEPTH FEET	COMPLETION INTERVAL FEET	INITIAL TREATMENT		INITIAL POTENTIAL BOPD	MCFD	BHPD	REMARKS	CUMULATIVE PROD TO 12/31/88	USEABLE WELLS	
											ACID GAL	# SAND FRAC							
1	Section 2, T8S, R33E Kerr-McGee Corporation State "F"	1	D 006	S	06-07-66	4381	4380	5-1/2	300	4380	4211-4345	2000	45,000	F 346	96	0	Last Prod. Date 04/87	68,269	1
		2	C 005	P	06-19-66	4366	4406	5-1/2	350	4406	4199-4347	2500	45,000	F 261	150	0		67,868	1
		3	E 008	P	07-15-66	4367	4420	5-1/2	350	4420	4203-4339	4500	---	P 129	100 est	16		83,345	1
		4	F 009	P	07-17-66	4362	4430	5-1/2	350	4430	4200-4328	2500	37,500	F 200	175	0		115,211	1
		5	L 016	P	09-08-66	4377	4346	5-1/2	350	4346	4208-4331	2500	45,000	F 266	210 est	0		184,095	1
		6	K 015	P	09-03-66	4367	4342	5-1/2	350	4342	4211-4322	4500	---	P 77	15 est	0		130,167	1
		7	J 014	P	09-17-66	4357	4337	5-1/2	350	4337	4219-4328	2500	45,000	F 436	328 est	0		86,553	1
		8	I 013	P	09-25-66	4346	4334	5-1/2	350	4334	4210-4329	2500	45,000	F 390	234 est	0		92,594	1
		10	N 018	P	10-11-66	4365	4336	5-1/2	350	4336	4238-4331	2500	45,000	F 473	284 est	0	Last Prod. Date 06/88	100,154	1
		11	M 017	P	10-26-66	4376	4344	5-1/2	350	4344	4210-4332	2500	45,000	F 395	217 est	0		84,764	1
		12	O 019	P	11-05-66	4357	4344	5-1/2	350	4344	4233-4337	2500	45,000	F 312	187	0		84,312	1
		13	P 020	P	11-27-66	4347	4340	5-1/2	350	4340	4241-4336	2000	30,000	P 217	76 est	0		62,548	1
		14	C 007	P	10-03-80	4366	4500	4-1/2	730	4499	4185-4253	5500	111,000	P 14	9	81		16,856	1
		2	Bristol Levick State "2"	1	G 010	P	08-23-66 01-14-76	4360	4450	4-1/2	325	4450	4216-4353 4412-4426	2000	45,000	F 124	209	--	
3	Kerr-McGee Corporation State Tract "C"	1	B 004	P	06-20-66	4352	4500	4-1/2	375	4500	4204-4347	2500	40,000	F 308	171	--		95,337	1
		2	A 003	P	07-14-66	4356	4479	4-1/2	375	4479	4221-4358	2500	40,000	F 280	99	--		85,156	1
		3	H 011	P	07-20-66	4355	4500	4-1/2	375	4500	4236-4380	2250	39,000	F 280	115	--		110,483	1
3	Section 1, T8S, R33E Kerr-McGee Corporation State Tract "C"	4	D 002	P	08-10-66	4351	4500	4-1/2	375	4492	4244-4338	2100	40,000	P 75	15	32	SMD well approved 12-9-68	34,660	1
		5	C 001	I	08-05-66	4347	4500	4-1/2	375	4500	4239-4416	2000	--	P TA				0	0
4	Kerr-McGee Corporation State "FU"	9	E 012	P	09-29-66 01-25-68	4340	4334	5-1/2	350	4334	4306-4330 4238-4266	2500	--	F 144	86 est	0		64,052	1
												2500	45,000					-----	1,660,627

EXHIBIT 3A

TABULATION OF WELL DATA FOR WELLS WITHIN THE PROPOSED UNIT AREA
 PROPOSED K-M CHAVEROO SAN ANDRES UNIT
 CHAVES COUNTY, NEW MEXICO

ACT OPERATOR LEASE #	WELL #	UNIT	TYPE OF LOG	HOLE SIZE INCHES	CASING RECORD SIZE INCHES	SAX	DEPTH FEET	TOC DETERMINED BY
1	Section 2, T8S, R33E Kerr-McGee Corporation State "F"	D	Schlumberger Gamma Ray - Density	12 1/4	8 5/8	275	405	Surface Circ out 20 sxs.
		C	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	399	Surface Circ out 50 sxs.
		E	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	425	Surface Circ out 15 sxs.
		F	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	433	Surface Circ out 35 sxs.
		L	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	429	Surface Circ out 10 sxs.
		K	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	405	Surface Circ out 15 sxs.
		J	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	404	Surface Circ out 15 sxs.
		I	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	405	Surface Circ out 10 sxs.
		N	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	407	Surface Circ out 15 sxs.
		M	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	406	Surface Circ out 15 sxs.
		O	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	408	Surface Circ out 15 sxs.
		P	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	401	Surface Calc.
		C	Schlumberger Neutron - Density	12 1/4	8 5/8	400	410	Surface Calc.
		2	Bristol Levick State "2"	G	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	250
3	Kerr-McGee Corporation State Tract "C"	B	Schlumberger Gamma Ray - Density	11	8 5/8	250	375	Surface Circ
		A	Schlumberger Gamma Ray - Density	11	8 5/8	275	389	Surface Calc.
		H	Schlumberger Gamma Ray - Density	11	8 5/8	250	360	Surface Good Returns
3	Section 1, T8S, R33E Kerr-McGee Corporation State Tract "C"	D	Schlumberger Sonic - Gamma Ray	11	8 5/8	250	374	Surface Calc.
		C	Schlumberger Gamma Ray - Density	11	8 5/8	250	378	Surface Good Returns
4	Kerr-McGee Corporation State "FU"	E	Lane Wells Gamma Ray - Neutron	12 1/4	8 5/8	275	401	Surface Calc.

EXHIBIT 4

TABULATION OF WELL DATA FOR WELLS OUTSIDE PROPOSED UNIT AREA BUT WITHIN ONE-HALF MILE OF EACH PROPOSED INJECTION WELL
 PROPOSED K-M CHAVEROO SAN ANDRES UNIT
 ROOSEVELT & CHAVES COUNTIES, NEW MEXICO

OPERATOR LEASE	WELL #	UNIT	WELL STATUS	COMPLETION DATE	DATUM ELEVATION FEET	TD OF CASING FEET	SIZE INCHES	SAX	DEPTH FEET	COMPLETION INTERVAL FEET	INITIAL TREATMENT ACID GAL	# SAND	BOPD	MCFD	INITIAL POTENTIAL BHPD	REMARKS
Section 36, T7S, R33E Murphy Operating Corp State "K"	4	L	P	09-30-66	4345	4490	4-1/2	350	4481	4244-4345	2000	25000	F 240	288		
	5	M	P	10-04-66	4349	4480	4-1/2	350	4466	4240-4342	2000	25000	P 240	168	--	
Section 35, T7S, R33E Murphy Operating Corp Hobbs "I"	19	P	P	05-15-66	4353	4500	4-1/2	350	4500	4187-4358	2500	--	P 120	N/A	--	
	18	O	P	05-04-66	4361	4500	4-1/2	350	4500	4216-4325	2500	--	F 302	N/A	--	
	14	J	P	03-15-66	4357	4500	4-1/2	350	4500	4207-4329	2500	--	F 496	521	--	
	1	N	S	04-17-66	4368	4442	4-1/2	800	4476	4207-4336	2000	--	F 136	121	--	Last prod date 4/86
State "DE" State Section 35	1	L	P	01-12-66	4405	4405	5-1/2	350	4442	4244-4334	4000	40000	F 294	123	29	
	2	M	P	03-17-66	4373	4360	4-1/2	350	4372	4182-4333	2500	40000	P 82	60	9	
Section 34, T7S, R33E Murphy Operating Corp New Mexico "AZ" State	15	P	TA	12-31-65	4385	--	4-1/2	200	4480	4201-4347	1000	24000	182	138	N/A	TA approved 02/83
Section 3, T8S, R33E Murphy Operating Corp State "Bf"	1	A	S	04-13-66	4386	4447	4-1/2	250	4480	4187-4344	1000	22200	F 381	N/A	12	Last prod date 01/86
	2	B	SI	05-25-66	4392	4453	4-1/2	250	4491	4200-4361	500	20000	S 85	N/A	46	Last prod date 06/88
				05-08-69						4217-4268	10250		P 27	N/A	5	
	4	H	S	07-13-66	4387	4452	4-1/2	300	4489	4198-4344	2000	30000	F 171	80	N/A	Last prod date 07/88
	6	G	P	08-04-66	4397	--	4-1/2	300	4455	4208-4356	2000	30000	F 151	N/A	12	
	8	J	P	11-22-66	4401	4438	4-1/2	300	4775	4240-4366	2000	40000	S&F 306	N/A	66	
	9	P	S	12-16-66	N/A	4447	4-1/2	300	4482	4253-4351	1000	40000	P 52	N/A	10	Last prod date 07/88
Bristol State "J"	1	I	P	04-21-67	4392	--	4-1/2	350	4410	4235-4352	1500	52500	P 142	60	N/A	
Section 10, T8S, R33E Yates Petroleum Corp	3	A	P	03-12-84	4374	4440	4-1/2	250	4440	4193-4334	3000	--	P 44	12	60	
Section 11, T8S, R33E Collier Energy, Inc. Mary Ella II	1	D	T	07-19-81	4372	4425	4-1/2	1050	4460	4197-4276	3000	--	P 14	5	40	Last prod date 7/83
Section 11, T8S, R33E Robert N. Enfield C. H. Hale	1	C	P&A	05-28-67	4378	4365	4-1/2	350	4365	4242-4348	2500	32000	P 33	TSTM	86	Plugged & abandoned 04/15/75
Section 11, T8S, R33E American Trading & Production Corp. (Glenn Petro. Corp)	1	B	P&A	03-17-67	4373	4400	4-1/2	450	4400	4261-4354	2000	30000	P 230	113	30	Plugged & abandoned 05/15/71
Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	1	D	P&A	04-02-67	4355	4410	4-1/2	225	4408	4292-4390	7500	30000	P 84	TSTM	40	Plugged & abandoned 02/27/69

EXHIBIT 4A

DATA FOR WELLS OUTSIDE PROPOSED UNIT AREA BUT WITHIN ONE-HALF MILE OF EACH PROPOSED INJECTION WELL
 PROPOSED K-M CHAVEROO SAN ANDRES UNIT
 ROOSEVELT & CHAVES COUNTIES, NEW MEXICO

OPERATOR LEASE	WELL #	UNIT	CASING RECORD SIZE INCHES	SAX	DEPTH FEET	TOC DETERMINED BY
Section 36, T7S, R33E Murphy Operating Corp State "K"	4	L	8 5/8	250	372	Surface Calc
Section 35, T7S, R33E Murphy Operating Corp Hobbs "T"	5	M	8 5/8	250	376	Surface Calc
State "DE" State Section 35	19	P	8 5/8	250	378	Surface Calc
	18	O	8 5/8	350	373	Surface Calc
	14	J	8 5/8	250	400	Surface Calc
	1	N	8 5/8	250	400	Surface Calc
	1	L	8 5/8	250	363	Surface Calc
	2	M	8 5/8	250	363	Surface Calc
Section 34, T7S, R33E Murphy Operating Corp New Mexico "AZ" State	15	P	8 5/8	200	371	Surface Calc
	Section 3, T8S, R33E Murphy Operating Corp State "BF"	1	A	8 5/8	368	Surface Calc
Bristol State "3" Section 10, T8S, R33E Yates Petroleum Corp Sun "UW" Federal Section 11, T8S, R33E Collier, Energy, Inc. Mary Ella II Section 11, T8S, R33E Robert N. Enfield C. H. Hale Section 11, T8S, R33E American Trading & Production Corp. (Glenn C. H. Hale Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	2	B	8 5/8	225	368	Surface Calc
	4	H	4 1/2	256	375	Surface Calc
	6	G	8 5/8	250	377	Surface Calc
	8	J	8 5/8	250	377	Surface Calc
Section 11, T8S, R33E Collier, Energy, Inc. Mary Ella II Section 11, T8S, R33E Robert N. Enfield C. H. Hale Section 11, T8S, R33E American Trading & Production Corp. (Glenn C. H. Hale Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	9	P	8 5/8	250	377	Surface Calc
	1	I	8 5/8	150	276	Surface Calc
Section 10, T8S, R33E Yates Petroleum Corp Sun "UW" Federal Section 11, T8S, R33E Collier, Energy, Inc. Mary Ella II Section 11, T8S, R33E Robert N. Enfield C. H. Hale Section 11, T8S, R33E American Trading & Production Corp. (Glenn C. H. Hale Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	3	A	10 3/4	250	347	Surface Calc
	1	D	8 5/8	200	390	Surface Calc
Section 11, T8S, R33E American Trading & Production Corp. (Glenn C. H. Hale Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	1	C	8 5/8	411	225	Surface Calc
	1	B	8 5/8	404	225	Surface Calc
Section 12, T8S, R33E (McClellan, Jack L.) Klepfer State 1	1	D	8 5/8	402	210	Surface Circ

KELLAHIN, KELLAHIN and AUBREY

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Santa Fé, New Mexico 87504-2265

FAX 505/982-2047

July 11, 1989

HAND-DELIVERED

Michael E. Stogner
Examiner
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

Re: Kerr-McGee Corporation
Case Nos. 9682 and 9683

Dear Mr. Stogner:

I enclose draft orders on behalf of Kerr-McGee Corporation in the above cases.

Please note that we have reduced the proposed project area for the waterflood to those portions of Sections 1 and 2 which have either a producing well or an injector on each proration unit.

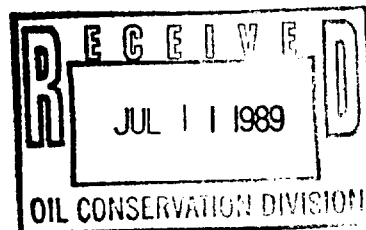
Additionally, we have now obtained the consent of all working interest owners to the unit, and have drafted the proposed order as a voluntary unit.

Sincerely,


Karen Aubrey

KA/rs
Encl.

cc: Ivan Geddie



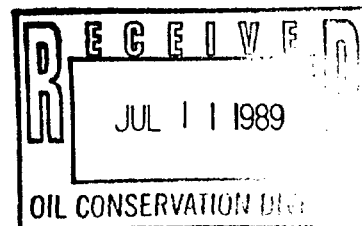
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

Case No. 9682
Order No. R-

APPLICATION OF KERR-MCGEE CORPORATION
FOR STATUTORY UNITIZATION, EDDY COUNTY,
NEW MEXICO

ORDER OF THE DIVISION



BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 7, 1989 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of _____, 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 Case No. 9683 for the purposes of testimony.

(3) The applicant, Kerr-McGee Corporation sought statutory unitization, pursuant to the "Statutory Unitization Act," Sections 70-7-1 through 70-7-21, of 1280.37 acres, more or less, being a portion of the Chaveroo San Andres Pool, Chaves County, New Mexico; and approval of the plan of unitization and the proposed operating plan. Subsequent to the hearing on this Application, applicant has obtained the consent of 100% of the working interest owners in the proposed unit.

(4) The proposed unit area should be designated the K-M Chaveroo San Andres Unit; and the horizontal limits of said unit area should be comprised of the following described State lands in Chaves County, New Mexico:

All of Sections One and Two, Township 8 South,
Range 33 East, Chaves County, New Mexico.

5) The horizontal limits of said unit are within the governing Chaveroo San Andres Pool boundaries.

(6) The vertical limits of said Unit Area should comprise the subsurface formation commonly known as the San Andres formation, the vertical limits thereof are found in that stratigraphic interval between 4211 and 4345 feet as measured on the Compensated Formation Density Log run in the Kerr-McGee Corporation State "F" No. 1 well located approximately 660 feet from the North line and 660 feet from the West line of Section 2, Township 8 South, Range 33 East, Chaves County, New Mexico. The unitized formation shall further include all subsurface points throughout the Unit Area correlative to the aforementioned identified depths.

(7) The applicant has made a good faith effort to secure voluntary unitization within the Unit Area and at the time of the hearing over 97 percent of the working interest owners and 100 percent of the royalty interest owners were effectively committed to the unit. Subsequent to the hearing the remaining 3 percent of the working interest owners agreed to voluntarily commit their interest to the unit.

(8) The applicant proposes to institute a waterflood project for the secondary recovery of oil and associated gas, condensate, and all associated liquefiable hydrocarbons within and to be produced from the proposed unit area, all as shown in Division Case 9683.

(9) The proposed secondary recovery operation should result in the additional recovery of approximately 1.66 million barrels of oil.

(10) The unitized management, operation and further development of the K-M Chaveroo San Andres Unit Area, as proposed, is reasonably necessary to effectively carry on secondary recovery operations and will substantially increase the ultimate recovery of oil and gas from the unitized portion of the pool.

(11) The proposed unitized method of operation as applied to the K-M Chaveroo San Andres Unit Area is feasible and will result with reasonable probability in the increased recovery of substantially more oil and gas from the unitized portion of the pool than would otherwise be recovered without unitization.

(12) The estimated additional costs of such operations will not exceed the estimated value of the additional oil so recovered plus a reasonable profit.

(13) Such unitization and adoption of applicant's proposed unitized method of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the Kerr-McGee Chaveroo San Andres Unit Area.

(14) The granting of the application in this case will have no adverse effect upon the San Andres pool and/or the San Andres formation located outside of the proposed K-M Chaveroo San Andres Unit boundary.

(15) The applicant's Unit Agreement and the Unit Operating Agreement were submitted to the Division prior to the hearing, were made a part of the record in this case and should be incorporated by reference into this order.

(16) The K-M Chaveroo San Andres Unit Agreement and the K-M Chaveroo San Andres Unit Operating Agreement provide for unitization and unit operation of the K-M Chaveroo San Andres Unit Area upon terms and conditions that are fair, reasonable and equitable, and include:

- (a) an allocation to the separately owned tracts of the unit area of all oil and gas that is produced from the unit area and which is saved, being the production that is not used in the conduct of unit operations or not unavoidably lost;
- (b) a provision for the credits and charges to be made in the adjustment among the owners in the unit area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to the unit operators;
- (c) a provision governing how the costs of unit operations including capital investment shall be determined and charged to the separately-owned tracts

and how said costs shall be paid, including a provision providing when, how and by whom such costs shall be charged to such owner, or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;

- (d) a provision for carrying any working interest owner on a limited, carried or net-profits basis, payable out of production, upon terms and condition which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Division to be just and reasonable;
- (e) a provision designating the Unit Operator and providing for supervision and conduct of the unit operations, including the selection, removal and substitution of an operator from among the working interest owners to conduct the unit operations;
- (f) a provision for a voting procedure for decisions on matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and
- (g) the time when the unit operation shall commence and the manner in which, and the circumstances under which, the operations shall terminate and for the settlement of accounts upon such termination.

(17) Any working interest owner who has not agreed in writing to participate in the unit prior to the date of this order should be deemed to have relinquished to the unit operator all of his operating rights and working interest in and to the unit until his share of the costs has been repaid, plus an additional 200 percent thereof as a non-consent penalty (Section 70-7-7.F. NMSA 1978).

(18) The voluntary unitization of the K-M Chaveroo San Andres Unit Area is in conformity with the above finding, and will prevent waste and protect correlative rights of all interest owners within the proposed unit area, and should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The application of Kerr-McGee Corporation for the K-M Chaveroo San Andres Unit, covering 1280.37 acres, more or less, of State lands in the Chaveroo San Andres Pool, Chaves County, New Mexico, is hereby approved for voluntary unitization.

(2) The land covered by said K-M Chaveroo San Andres Unit Agreement shall be designated the K-M Chaveroo San Andres Unit Area and shall comprise the following described acreage in Eddy County, New Mexico:

All of Sections One and Two, Township 8 South, Range 33 East, Chaves County, New Mexico

(3) the horizontal limits of said unit are within the governing boundaries of the Chaveroo San Andres pool.

(4) The vertical limits of said Unit Area shall comprise the subsurface formation commonly known as the San Andres formation, the vertical limits thereof are found in that stratigraphic interval between 4211 and 4345 feet as measured on the Compensated Formation Density Log run in the Kerr-McGee Corporation State "F" No. 1 well located approximately 660 feet from the North line and 660 feet from the West line of Section 2, Township 8 South, Range 33 East, Chaves County, New Mexico. The unitized formation shall further include all subsurface points throughout the Unit Area correlative to the aforementioned identified depths.

(5) The applicant shall institute a waterflood project for the secondary recovery of oil and associated gas, condensate and all associated liquefiable hydrocarbons within and produced from the unit area, and said waterflood project is the subject of Division Case No. 9683.

(6) The K-M Chaveroo San Andres Unit Agreement and the K-M Chaveroo San Andres Unit Operating Agreement, which were submitted to the Division prior to this hearing and made a part of the record in this case, are hereby incorporated by reference into this order.

Case No. 9682
Order No. _____
Page 6

(7) The K-M Chaveroo San Andres Unit Agreement and the K-M Chaveroo San Andres Unit Operating Agreement provide for unitization and unit operation of the Chaveroo San Andres Pool upon the terms and conditions that are fair, reasonable and equitable.

(8) Since the persons owning 100% of the working interest and 100% of the royalty interest in the unit area have approved the Unit Agreement and the Unit Operating Agreement, the unit area is hereby voluntarily unitized.

(10) The applicant as Unit Operator shall notify in writing the Division Director of any removal or substitution of said Unit Operator by any other working interest owner within the unit area.

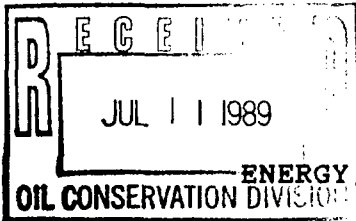
(11) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



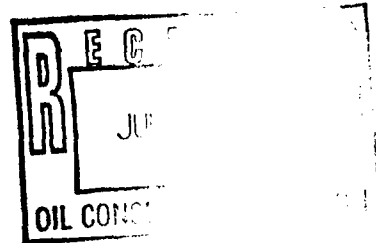
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

Case No. 9683
Order No. R-

APPLICATION OF KERR-MCGEE CORPORATION
FOR WATERFLOOD PROJECT, CHAVES COUNTY,
NEW MEXICO

ORDER OF THE DIVISION



BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 7, 1989 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, this _____ day of _____, 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 Case No. 9682 for the purposes of testimony.

(3) The applicant, Kerr-McGee Corporation, seeks authority to initiate a pilot waterflood project within its proposed K-M Chaveroo San Andres Unit, by the injection of water into the San Andres formation through the following described nine existing wells in Township 8 South, Range 33 East, NMPM, Chaveroo San Andres Pool, Chaves County, New Mexico:

WELL NAME AND NUMBER	FOOTAGE LOCATION (UNIT)	PROPOSED INJECTION INTERVAL (FEET)
STATE "F" NO. 1	660'FNL - 660'FWL ()	4211 TO 4345
STATE "F" NO. 4	1980'FNL - 1980'FWL ()	4200 TO 4328
STATE "F" NO. 5	1980 FSL - 660'FWL ()	4208 TO 4331
STATE "F" NO. 7	1980 FSL - 1980 FEL ()	4219 TO 4328
STATE "F" NO. 10	990 FSL - 1980 FWL ()	4238 TO 4331
STATE "F" NO. 13	990 FSL - 1980 FEL ()	4241 TO 4336
STATE TR C NO. 1	660 FNL - 1980 FEL ()	4204 TO 4347
STATE TR C NO. 3	1980 FWL - 660 FEL ()	4236 TO 4380
STATE TR C NO. 4	660 FNL - 660 FWL ()	4244 to 4338

(4) The project area should consist of that area within the boundary of the K-M Chaveroo San Andres Unit Area, as described below, which was the subject of Case No. 9682 and was heard in conjunction with this case:

ALL OF SECTION 2, T8S, R33E; AND THE NW/4NW/4, THE NE/4NW/4, AND THE SW/4NW/4, SECTION 1, T8S, R33E, CHAVES COUNTY, NEW MEXICO.

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

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

(7) 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.

(8) Prior to commencing injection operations, the casing in each of the subject wells should be pressure tested throughout the interval, from the surface down to the proposed packer setting depth, to assure integrity of such casing.

(9) 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.

(10) 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.

(11) The operator should give advance notification to the supervisor of the 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.

(12) 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, Kerr-McGee Corporation, is hereby authorized to institute and operate a pilot waterflood project in the K-M Chaveroo San Andres Unit Area (as described in Finding Paragraph No. (3) of this order) by the injection of water into the San Andres formation through the following described nine existing wells, all in Township 8 South, Range 33 East, NMPM, Chaveroo San Andres Pool, Chaves County, New Mexico:

<u>WELL NAME AND NUMBER</u>	<u>FOOTAGE LOCATION (UNIT)</u>	<u>PROPOSED INJEC- TION INTERVAL (FEET)</u>
STATE "F" NO. 1	660' FNL - 660' FWL ()	4211 TO 4345
STATE "F" NO. 4	1980' FNL - 1980' FWL ()	4200 TO 4328
STATE "F" NO. 5	1980 FSL - 660' FWL ()	4208 TO 4331
STATE "F" NO. 7	1980 FSL - 1980 FEL ()	4219 TO 4328
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STATE TR C NO. 1	660 FNL - 1980 FEL ()	4204 TO 4347
STATE TR C NO. 3	1980 FWL - 660 FEL ()	4236 TO 4380
STATE TR C NO. 4	660 FNL - 660 FWL ()	4244 TO 4338

PROVIDED FURTHER THAT, prior to commencing injection operations, 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 district office.

(2) Injection into each of said wells shall be through 2-3/8 inch internally coated tubing installed in a packer set approximately 100 feet above the uppermost perforation; the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak-detection device.

(3) 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.

(4) The operator shall notify the supervisor of the 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.

(5) The operator shall immediately notify the supervisor of the Division's Artesia 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, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(6) The subject waterflood project is hereby designated the K-M Chaveroo San Andres Unit Waterflood Project and shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(7) 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.

(8) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Case No. 9683
Order R-_____
Page 5

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

Memo

From
FLORENE DAVIDSON
OC Staff Specialist

To

Karen Aubrey called
May 19, 1989, and
requested that Cases
9682 and (9683) be
continued to June 7,
1989.

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION



August 3, 1989

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5300

Ms. Karen Aubrey
Kellahin, Kellahin, & Aubrey
Attorneys at Law
Post Office Box 2265
Santa Fe, New Mexico

Re: CASE NO. 9683
ORDER NO. R-8968

Applicant:
Kerr-McGee Corporation

Dear Madam:

Enclosed herewith are two copies of the above-referenced
Division order recently entered in the subject case.

Sincerely,

Florence Davidson

FLORENE DAVIDSON
OC Staff Specialist

Copy of order also sent to:

Hobbs OCD
Artesia OCD
Aztec OCD

Other _____

KELLAHIN, KELLAHIN and AUBREY

Attorneys at Law

El Patio - 117 North Guadalupe

Post Office Box 2265

Santa Fé, New Mexico 87504-2265

W. Thomas Kellahin
Karen Aubrey

Jason Kellahin
Of Counsel

Telephone 982-4285
Area Code 505

September 26, 1989

RECEIVED

SEP 28 1989

OIL CONSERVATION DIV.
SANTA FE

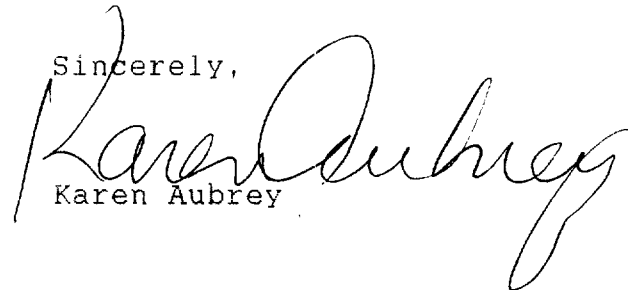
William J. LeMay
Director
New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87504

Re: Case Numbers 9682 and 9683

Dear Mr. LeMay:

I enclose a Certificate of Effectiveness for the Kerr-McGee Chaveroo Unit which was approved by the Division under the above case numbers.

Sincerely,


Karen Aubrey

Enclosures

xc: Ivan Geddie

RECEIVED

SEP 28 1989

OIL CONSERVATION DIV.
SANTA FE

CERTIFICATE OF EFFECTIVENESS OF UNIT

Kerr-McGee Corporation, a Delaware corporation, hereby certifies that the Unit Agreement K-M Chaveroo San Andres Unit, County of Chaves, State of New Mexico, dated May 1, 1989, was approved by the New Mexico Oil Conservation Commission by Order No. R-8967, and became effective according to its terms on September 1, 1989, at 7:00 A.M.

This Unit consists of the San Andres formation underlying the following described lands:

Township 8 South, Range 33 East

Section 1: All
Section 2: All

containing 1,280.37 acres, more or less, in Chaves County, New Mexico.

This Certificate is made and recorded pursuant to and as required by the provisions of the above mentioned K-M Chaveroo San Andres Unit Agreement.

Dated this 21st day of September, 1989.

ATTEST:

KERR-McGEE CORPORATION

FORM APPROVED
LAW DEPT.

[Signature]
Assistant Secretary

By [Signature]
Robert Henderson
Vice President

STATE OF OKLAHOMA)
) SS:
COUNTY OF OKLAHOMA)

The foregoing was acknowledged before me this 21st day of September, 1989, by Robert Henderson, Vice President of Kerr-McGee Corporation, a Delaware corporation, on behalf of said corporation.

[Signature]
Notary Public

My Commission Expires:

4-27-92