CASE 3366: Application of COASTAL STATES for a pilot pressure maintenance project, Lea County.

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COASTAL STATES GAS PRODUCING COMPANY
EXHIBITS FOR CASE NO. 3366
PILOT PRESSURE MAINTENANCE PROJECT

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DEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. A
CASE NO. 3366

### COASTAL STATES GAS PRODUCING COMPANY

NORTH TEXAS DIVISION
614 CITIZENS NATIONAL BANK BUILDING
ABILENE, TEXAS

January 10, 1966

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

> Re: Flying "M" San Andres Field, Lea County, New Mexico Sec 16, 17, 20, 21, 28, 29, of T-9S, R-33E.

Gentlemen:

Coastal States Gas Producing Company requests permission to initiate a pilot pressure maintenance project in the Flying "M" San Andres Field of Lea County, New Mexico. This proposed pilot project will consist of three injection wells at the present time. We also request that provisions be made so that all additional injection wells may be approved administratively.

The three injection wells are described as follows:

Southern Minerals State 15 No. 1, NW/4 of SW/4, Sec 15;

Southern Minerals State 21 #4, SE/4 of NE/4, Sec 21;

Gonsales Federal 33 #4; NW/4 of NW/4, Sec 33;

All in Township 9, South; Range 33 East.

The Southern Minerals State 15 No. 1 is presently being used as a salt water disposal well. Permission to inject produced salt water into this well was obtained by Commission Order No. R-2924 in June, 1965. This water is being injected into the aquefer below the water-oil contact in the Slaughter Zone of the San Andres. To date, 41,000 barrels have been injected at approximately 900 psi at 225 barrels oil per day. No beneficial effects have been detected as a result of this injection program.

We are requesting permission to inject produced San Andres water into two additional wells, in order to further evaluate the possibility of maintaining the reservoir pressure by bottom water injection (injecting below the water-oil contact).

The Southern Minerals State 21 No. 4 is a replacement well for the Southern Minerals State 21 No. 3, which was drilled in August, 1964, and subsequently lost due to hole problems. Attached is a plat showing the exact location of the proposed replacement well. Also attached is a diagrammatic sketch showing how this well is to be equipped for injection, utilizing  $2^{-\frac{1}{2}}$  plastic coated tubing for casing.

The Gonsales Federal 33 No. 4 was drilled to a total depth of 4534' in July, 1965. The Slaughter Zone was tested and found to be predominantly (98%) water productive. It is presently temporarily abandoned. Attached is a diagrammatic sketch showing the proposed method of converting this well to injection status.

Coastal States is not requesting any allowable change or transfer of allowables at this time. As soon as sufficient response has been demonstrated, efforts to unitize the entire field will be resumed.

The State Engineer, as well as all offset operators, are being notified by copies of this application.

Very truly yours,

Jack R. McGraw Division Engineer

JRMcG/ec Enc.

CC: NMOCC

Hobbs, New Mexico

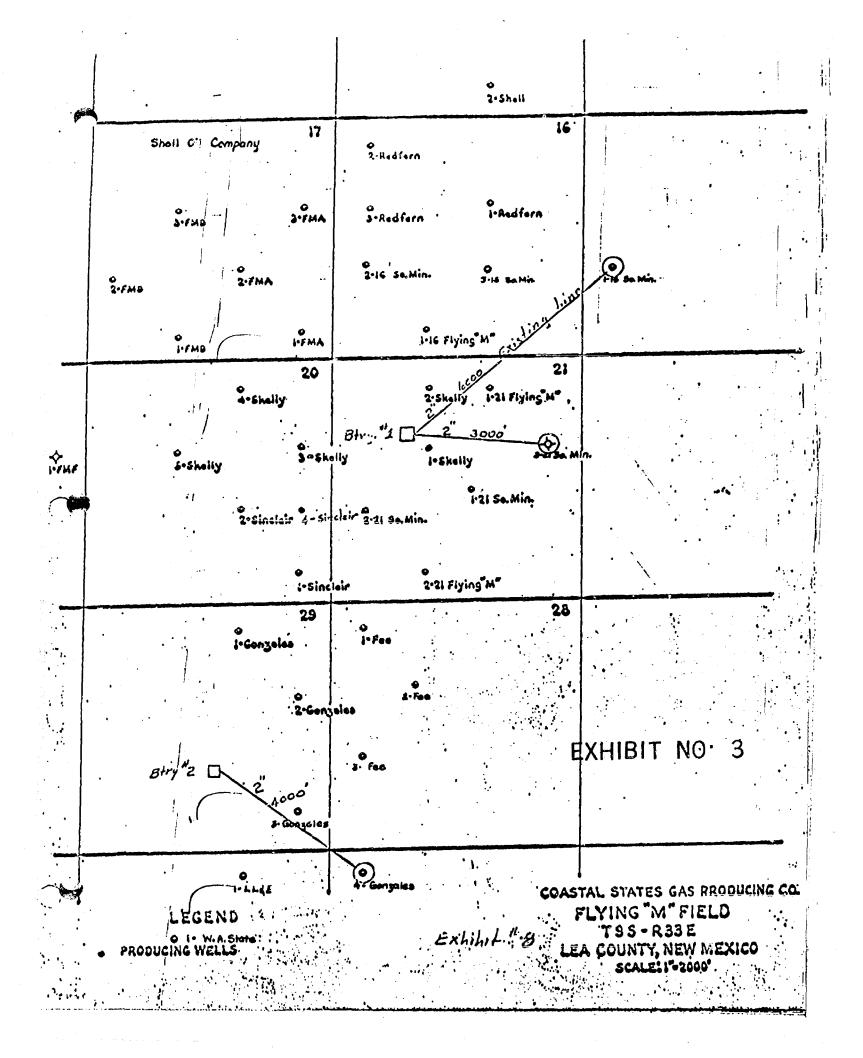
Shell Oil Company Redfern & Herd, Inc. Mr. Frank Irby, State Engineer, Santa Fe, New Mexico

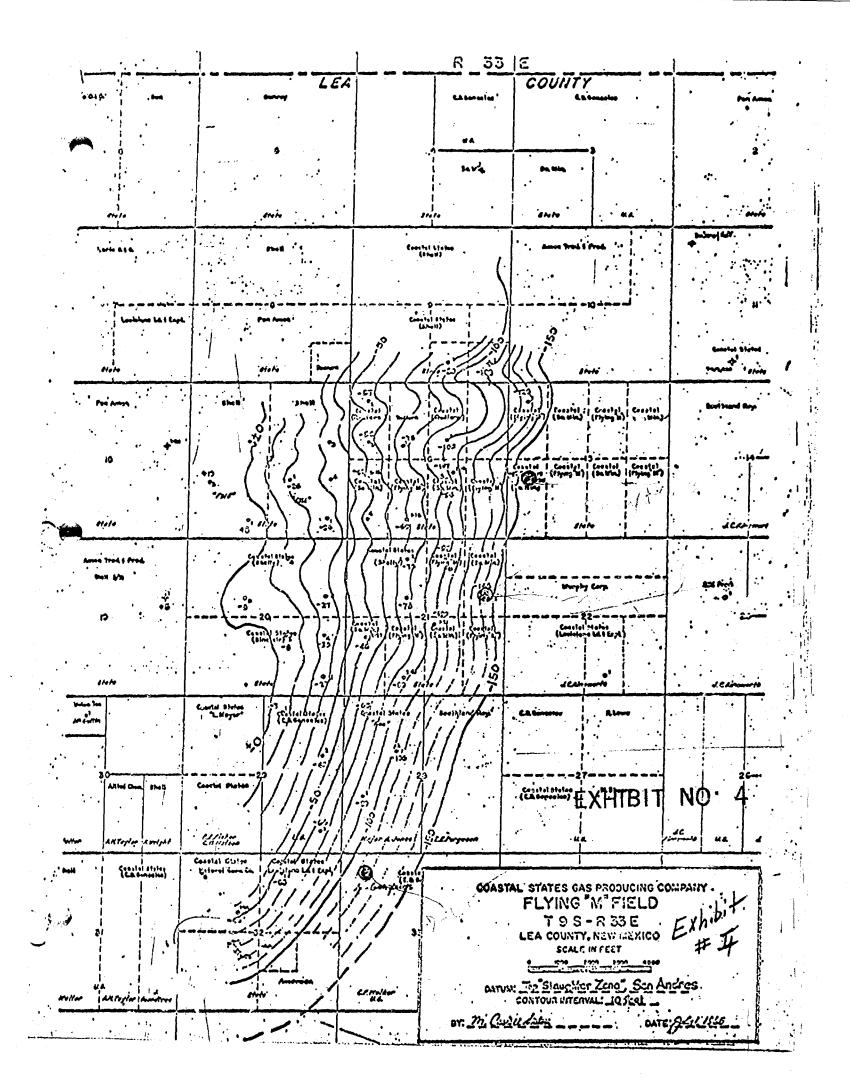
### PERTINENT DATA

- 1. Injection will be into the Slaughter Zone of the San Andres Formation at approximately 4450'.
- Water to be injected will be produced water from the Flying "M" San Andres Field.
- 3. Expected injection rate is 500 barrels water per day per well.
- 4. The expected injection pressure is 1700 psi.

EXHIBIT NO 1

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8-5/8" set @ 250'

EXHIBIT NO. 5

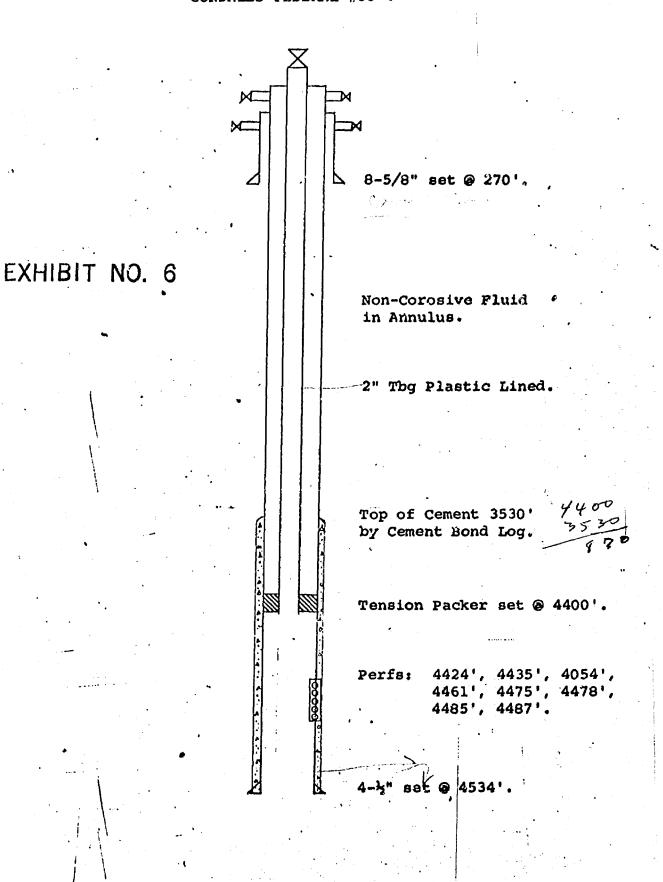
→ 2-½" Plastic Coated Csg

Expected Top of Cement 3500'

Perforate
Slaughter Zone of San Andres
4400

2-1/2" Plastic Coated Csg set @ approximately 4600.'.

### COASTAL STATES GAS PRODUCING COMPANY GONSALES FEDERAL #33-4



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# WELL LOCATION AND ACREAGE DEDICATION PLAT

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וחוסויול SOUTHERE BUNEALETS! PRODUCING CO. Town stop Unit Letter 9 SOUTH 33 EAST Actual L'entage Lacution of Wells NORTH feet from the Ground Level Elev. Producing Leanestics. 4355 San Ardres Flying. Min 1. Outline the acreage dedicated to the subject well by colored pencil or harbure marks on the plut bulow. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). 3. If more than one leake of different awnership is dedicated to the well, have the interests of all owners been consoliduted by communitization, unitization, force-pooling, etc? ٠, If answer is "yes," type of consolidation \_ Yes No If answer is "no," list the owners and truct descriptions which have actually been consulidated. (Use reverse side of this form if necessary) No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, climinating such interests, has been approved by the Commis-CERTIFICATION EXHIBIT NO. I hereby certify that the information cantoined herein is true and complete to the Agent " Coastal States 8601. Gas Producing Company December 28, 1965 Date Surveyed 12-18-65

# TROUBLE VENTAL REPORT 212YLANA RETANY

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EXHIBIT NO. 9

F.F. Flippen 6-6-64

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WL-451.8

### EXHIBIT NO. 10

Docket No. 4-66

### DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 26, 1966

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

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Applicant, in the above-styled cause, seeks approval of a nonstandard oil proration unit comprising the NE/4 SW/4, N/2 SE/4,
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Lusk-Strawn Pool, Lea County, New Mexico, said unit to be dedicated to a well to be drilled at an unorthodox location for said
pool 660 feet from the South line and 1650 feet from the East
line of said Section 7.

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DRAFT
JMD/esr
Jan. 31, 1966

## BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3366

Order No. R-3033

APPLICATION OF COASTAL STATES GAS PRODUCING COMPANY FOR A PILOT PRES-SURE MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

ORDER OF THE COMMISSI

#### BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 26, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Utz

NOW, on this <u>day of February</u>, 1966, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Coastal States Gas Producing Company, seeks authority to institute a pilot pressure maintenance project in the Flying "M" San Andres Pool, Lca County, New Mexico, by the injection of water into the San Andres formation through three wells in Sections 15, 21, and 33, Township 9 South, Range 33 East, NMPM, Lea County, New Mexico.
- (3) That the applicant also seeks the establishment of an administrative procedure for approval of additional water injection wells.
- (4) That the proposed pilot pressure maintenance project is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(5) That the proposed pilot pressure maintenance project should be approved and an administrative procedure should be established for approval of additional water injection wells.

### IT IS THEREFORE ORDERED:

- (1) That the applicant, Coastal States Gas Producing Company, is hereby authorized to institute a pilot pressure maintenance project designated the Account, Purply "M" San Andres Pool,

  Pressure Maintenance Project in the Flying "M" San Andres Pool,

  Lea County, New Mexico, by the injection of water into the San

  Andres formation through the following-described wells in Township

  9 South, Range 33 East, NMPM, Lea County, New Mexico:
  - Southern Minerals State 15 Well No. 1, located in Unit L of Section 15;
  - Southern Minerals State 21 Well No. 4, located in Unit H of Section 21; and
  - Gonsales Federal 33 Well No. 4, located in Unit D of Section 33.
- approve additional water injection wells in the Angula ( Nac.)

  Pressure Maintenance Project in accordance with the following-described administrative procedure:
  - A. The project operator shall file an application in accordance with the provisions of Rule 701 B of the Commission's General Rules and Regulations.
  - B. The applicant shall forward a copy of the application to each operator offsetting each proposed injection well and the application shall state that such notice has been furnished.
  - C. The Secretary-Director may approve the application upon receipt of waivers from all offset operators or if no offset operator has objected within 15 days after the Secretary-Director has received the application.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

P#0. 80X 2428

### COASTAL STATES GAS PRODUCING COMPANY

NORTH TEXAS DIVISION

614 CITIZENS NATIONAL BANK BUILDING ABILENE, TEXAS

Case 3366

January 10, 1966

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

> Re: Flying "M" San Andres Field, Lea County, New Mexico Sec 16, 17, 20, 21, 28, 29, of T-9S, R-33E.

Gentlemen:

Coastal States Gas Producing Company requests permission to initiate a pilot pressure maintenance project in the Flying "M" San Andres Field of Lea County, New Mexico. This proposed pilot project will consist of three injection wells at the present time. We also request that provisions be made so that all additional injection wells may be approved administratively.

The three injection wells are described as follows:

Southern Minerals State 15 No. 1, 500 miss.

NW/4 of SW/4, Sec 15;

Southern Minerals State 21 #4, SE/4 of NE/4, Sec 21;

Gonsales Federal 33 #4; NW/4 of NW/4, Sec 33;

All in Township 9, South; Range 33 East.

The Southern Minerals State 15 No. 1 is presently being used as a salt water disposal well. Permission to inject produced salt water into this well was obtained by Commission Order No. R-2924 in June, 1965. This water is being injected into the aquefer below the wateroil contact in the Slaughter Zone of the San Andres. To date, 41,000 barrels have been injected at approximately 900 psi at 225 barrels oil per day. No beneficial effects have been detected as a result of this injection program.

1-13-66 N

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#### COASTAL STATES GAS PRODUCING COMPANY

We are requesting permission to inject produced San Andres water into two additional wells, in order to further evaluate the possibility of maintaining the reservoir pressure by bottom water injection (injecting below the water-oil contact).

The Southern Minerals State 21 No. 4 is a replacement well for the Southern Minerals State 21 No. 3, which was drilled in August, 1964, and subsequently lost due to hole problems. Attached is a plat showing the exact location of the proposed replacement well. Also attached is a diagrammatic sketch showing how this well is to be equipped for injection, utilizing 2-½" plastic coated tubing for casing.

The Gonsales Federal 33 No. 4 was drilled to a total depth of 4534' in July, 1965. The Slaughter Zone was tested and found to be predominantly (98%) water productive. It is presently temporarily abandoned. Attached is a diagrammatic sketch showing the proposed method of converting this well to injection status.

Coastal States is not requesting any allowable change or transfer of allowables at this time. As soon as sufficient response has been demonstrated, efforts to unitize the entire field will be resumed.

The State Engineer, as well as all offset operators, are being notified by copies of this application.

Very truly yours,

Jack R. McGraw Division Engineer

JRMcG/ec Enc.

CC: NMOCC

Hobbs, New Mexico

Mr. Frank Irby, State Engineer, Santa Fe, New Mexico

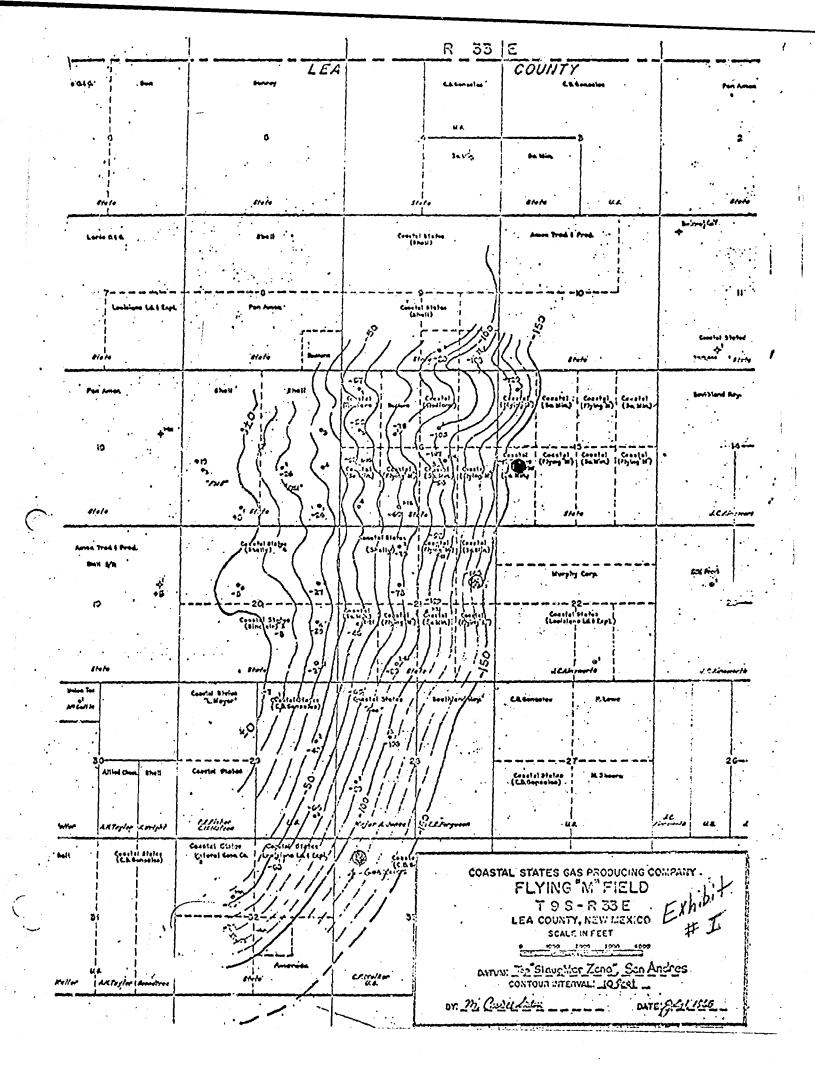
Shell Oil Company Redfern & Herd, Inc.

Same 3366

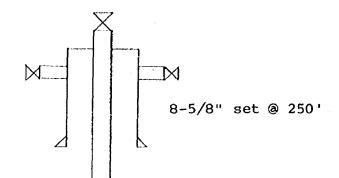
### PERTINENT DATA

- 1. Injection will be into the Slaughter Zone of the San Andres Formation at approximately 4450'.
- 2. Water to be injected will be produced water from the Flying "M" San Andres Field.
- 3. Expected injection rate is 500 barrels water per day per well.
- 4. The expected injection pressure is 1700 psi.

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# COASTAL STATES GAS PRODUCING COMPANY SOUTHERN MINERALS STATE 21 #4



2-12" Plastic Coated Csg

Expected Top of Cement 3500'

Perforate Slaughter Zone of San Andres

 $2-\frac{1}{2}$ " Plastic Coated Csg set @ approximately 4600'.

( Enc 3366

# WELL LOCATION AND ACREAGE DEDICATION PLAT

Fam. (\*+169 Superiodes C+128 Uffective (+1+6)

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Cline 3.366

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- 2 January 26, 1966 Examiner Hearing
- CASE 3369: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation through perforations from 10,604 to 10,780 feet in its State "BO" Well No. 4 located in Unit M, Section 13, Township 11 South, Range 32 East, Moore-Devonian Pool, Lea County, New Mexico.
- CASE 3370: Application of Shell Oil Company for an exception to Rule 8 of Order No. R-2065 and to Rule 301, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 8 of Order No. R-2065 and to Rule 301 of the Commission rules and regulations to permit discontinuance of individual gasoil ratio tests in its Carson Bisti-Lower Gallup Pressure Maintenance Project, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico. Applicant proposes to report gas production and ratios on a unit-wide basis rather than individual well GOR data\*\*
- CASE 3371: Application of Midwest Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Harris State Well No. 1 at an unorthodox location 660 feet from the South line and 1980 feet from the West line of Section 29, Township 13 South, Range 34 East, Nonombre-Pennsylvanian Field, Lea County, New Mexico.
- CASE 3372: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the amendment to Rule 104 F of the Commission rules and regulations to provide administrative procedure for the approval of an unorthodox location necessitated by recompletion of a well previously drilled to another horizon.
- CASE 3373: In the matter of the hearing called by the Oil Conservation Commission on its cwn motion to consider amendment of Rule 301 to provide executive authority for the Secretary-Director to exempt, for good cause, certain pools from the annual gas-oil ratio test requirements; further, the Secretary-Director could, where necessary, order annual oil production tests in lieu of gas-oil ratio tests.
- CASE 3374: In the matter of the hearing called by the Oil Conservation Commission on its own motion to amend Rule 302 of the Commission fules and regulations to eliminate the requirement for calibration of bottom-hole pressure test bombs prior and subsequent to each pressure test.

Cers. 3366. Heard 1-26-66. Rec. 1-27-66.

In Eightrone Coastal States Pressure maintenance for ofet. for the Dying 'M' San Cindreas oil Pool.

2. (a) The So. Minimals St. # 15 # 1 mil Log 15-95-33 E was approved for a SWD well by order R-2924,

(M) So. Minerals It 21 th 4, was H sec. 21

(c) So. Thinerala St. 33 # x D-sec. 33 (b) +(c) should be appeared in this order.

3. Show wells shall them the cement circulated on the surface atming and shall blose comented cubone the slaughter zone of the Sam Cendrer furnation to adiquately good return the injected scaled water to their zone.

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### BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

CASE No. 3366 Order No. R-3033

APPLICATION OF COASTAL STATES GAS PRODUCING COMPANY FOR A PILOT PRES-SURE MAINTENANCE PROJECT, LEA COUNTY, NEW MEXICO.

### ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 26, 1966, at Santa Pe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 3rd day of February, 1966, the Commission, a guorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

### FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Coastal States Gas Producing Company, seeks authority to institute a pilot pressure maintenance project in the Flying "M" San Andres Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through three wells in Sections 15, 21, and 33, Township 9 South, Range 33 East, NMPM, Lea County, New Mexico.
- (3) That the applicant also seeks the establishment of an administrative procedure for approval of additional water injection wells.
- (4) That the proposed pilot pressure maintenance project is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

-2-CASE No. 3366 Order No. R-3033

(5) That the proposed pilot pressure maintenance project should be approved and an administrative procedure should be established for approval of additional water injection wells.

### IT IS THEREFORE ORDERED:

(1) That the applicant, Coastal States Gas Producing Company, is hereby authorized to institute a pilot pressure maintenance project designated the Coastal States Flying "M" Pressure Maintenance Project in the Flying "M" San Andres Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through the following-described wells in Township 9 South, Range 33 East, NAPM, Lea County, New Mexico:

Southern Minerals State 15 Well No. 1, located in Unit L of Section 15;

Southern Mineralz State 21 Well No. 4, located in Unit H of Section 21; and

Gonsales Federal 33 Well No. 4, located in Unit D of Section 33.

- (2) That the Secretary-Director is hereby authorized to approve additional water injection wells in the Coastal States Flying "M" Pressure Maintenance Project in accordance with the following-described administrative procedure:
  - A. The project operator shall file an application in accordance with the provisions of Rule 701 B of the Commission's General Rules and Regulations.
  - B. The applicant shall forward a copy of the application to each operator offsetting each proposed injection well and the application shall state that such notice has been furnished.
  - C. The Secretary-Director may approve the application upon receipt of waivers from all offset operators or if no offset operator has objected within 15 days after the Secretary-Director has received the application.

-3-CASE No. 3366 Order No. R-3033

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

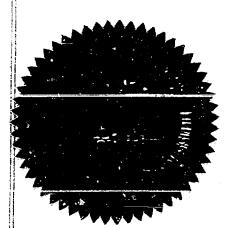
DONE at Santa Fe, New Maxico, on the day and year herein-above designated.

STATE OF NEW MEXICO
OIL CONSELVATION COMMISSION

JACK M. CAMPBELL Chairman

Surfan B. Hays, Member

A. L. FORTER, Jr., Member & Secretary



GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

### State of New Mexico

### Bil Conservation Commission

LAND COMMISSIONER GUYTON B. HAYS MEMBER



STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

February 3, 1966

Mr. Sim Christy Hinkle, Bondurant & Christy Attorneys at Law Post Office Box 10 Roswell, New Mexico 3365
Re: Case No. 3366
Order No. R-3032 & R-3033
Applicant:

Humble & Coastal States

Dear Sir:

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

Very truly yours,

L. L. Forter,

A. L. FORTER, Jr.

Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC \*

Artesia OCC \* (R-3032)

Aztec OCC Other

P. O. BOX 249B

COASTAL STATES GAS PRODUCING COMPANY COLE 6. 0, 0,

NORTH TEXAS DIVISION 614 CITIZENS NATIONAL BANK BUILDING HAT 12 2 43 PH 166 ABILENE, TEXAS

May 10, 1966

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

> Re: Coastal States' Gonsales Federal 33 #4, Unit D, Sec 33, T-9S, R33E, Lea County, New Mexico.

#### Gentlemen:

Attached is Form C-108, prepared in order to convert the subject well to water injection. Permission to convert this well to water injection was obtained by Order No. R-3033 from the New Mexico 011 Conservation in January, 1966; however, Form C-108 or Federal Form 9-331 (Sundry Notices and Reports on Wells) was not submitted at that time. They are herewith attached, so that this well can be classified as a water injection well. If any further information is needed, please advise.

Very truly yours,

Jack R. McGraw Division Engineer

JRMcG/ec

Enc.

CC: U. S. Department of the Interior Geological Survey P. O. Box 1157 Hobbs, New Mexico

> New Mexico Oil Conservation Commission P. O. Box 1980 Hobbs, New Mexico

PHONE OR 4-8191

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### NEW MEXICO OIL CONSERVATION COMMISSION

### APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS, PORMATION

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(Signature)			(Title)				(Date)	

NOTE: Should waivers from the State Engineer, the surface owher, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

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## COASTAL STATES GAS PRODUCING COMPANY GONSALES FEDERAL #33-4

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### NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION?

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RE THE FOLLOWING ITEMS ATTACHED HIS APPLICATION (SEE RULE 701-B)	1		ELECTRICAL L		i		_	
•	Y	es	<b>- 1</b>	Yes	1	·	Yes	1
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( 12.1.12 )	no Than	nivi:	sion Engine	er		М.	ay 10, 1966	
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(Title) NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well. not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

Form 9-331 (May 1063)	DEPARTI	UNITED STATES MENT OF THE IN	_	SUBMIT IN TRIPLIC (Other Instructions overse side)	in re-	LEASE DES	h deproved get Bureau granion	SER BER	2-R1424 IAL NO.
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\*See Instructions on Reverse Side

### instructions

General: This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State, pursuant to applicable State law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 17: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

U.S. GOVERNMENT PRINTING OFFICE: 1963-O-685229

847-851

# COASTAL STATES GAS PRODUCING COMPANY GONSALES FEDERAL #33-4

8-5/8" set @ 270'. Non-Corosive Fluid in Annulus. Exhibit No. 6 2" Tbg Plastic Lined. Top of Cement 3530' by Cement lond Log. Tension Packer set @ 4400'. Perfs: 4424', 4435', 4054', 4461', 4475', 4478', 4485', 4487'. 4-3" set @ 4534'.

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REMARKS:

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Exhibit No. 9

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## COASTAL STATES GAS PRODUCING COMPANY

NORTH TEXAS DIVISION

614 CITIZENS NATIONAL BANK BUILDING ABILENE, TEXAS

May 10, 1966

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

Re: Coastal States'
Gonsales Federal 33 #4,
Unit D, Sec 33, T-98, R33E,
Lea County, New Mexico.

### Gentlemen:

Attached is Form C-108, prepared in order to convert the subject well to water injection. Permission to convert this well to water injection was obtained by Order No. R-3033 from the New Mexico Oil Conservation in January, 1966; however, Form C-108 or Federal Form 9-331 (Sundry Notices and Reports on Wells) was not submitted at that time. They are herewith attached, so that this well can be classified as a water injection well. If any further information is needed, please advise.

Very truly yours,

Jack R. McGraw Division Engineer

JRMcG/ec

Enc.

CC: U. S. Department of the Interior Geological Survey P. O. Box 1157 Hobbs, New Mexico

New Mexico Oil Conservation Commission P. O. Box 1980 Hobbs, New Mexico

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1120 SIMMS BLDG. . P. O. BOX 1092 . PHONE 243-6691 . ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 26, 1966

EXAMINER

HEARING

IN THE MATTER OF:

Application of Coastal States Gas Producing )
Company for a pilot pressure maintenance )
project, Lea County, New Mexico.

3366

Case No.\_

BEFORE:

Elvis A. Utz, Gas Engineer

TRANSCRIPT OF HEARING



MR. UTZ: Application of Coastal States Gas Producing Company for a pilot pressure maintenance project, Lea County, New Mexico.

MR. CHRISTY: Sim Christy of Hinkle, Bondurant and Christy, Roswell, New Mexico, appearing on behalf of the applicant, Coastal States. We have one witness, Mr. Examiner. Would you stand and be sworn.

(Witness sworn)

JACK R. MCGREW, a witness, having been first duly sworn, was examined and testified as follows:

### DIRECT EXAMINATION

## BY MR. CHRISTY:

Q Would you please state your name, address, by whom you are employed and in what capacity?

A My name is Jack R. McGrew, I work for Coastal States Producing Company, Abilene, Texas, as a Production Engineer.

Q I believe you have previously testified before this regulatory body and have had your qualifications accepted?

A Yes, sir.

Q And are you familiar in what is sought in Case 3366, and the area involved?

A Yes, sir.

MR. CHRISTY: Any questions on the qualifications of the witness?

MR. UTZ: No, you may proceed.



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Q (By Mr. Christy) Now, briefly would you tell the Examiner what you're seeking in this application?

A Coastal States requests permission to initiate a pilot pressure maintenance project in the Flying "M" San Andres Field of Lea County, New Mexico. This proposed pilot project will consist of three injection wells at the present time. We also request that provisions be made so that all additional injection wells may be approved administratively.

The three injection wells are described as follows:

Southern Minerals State 15 No. 1, Northwest Quarter of Southwest Quarter, Section 15;

Southern Minerals State 21 No. 4, Southeast Quarter of Northeast Quarter, Section 21;

Gonsales Federal 33 No. 4,
Northwest Quarter of Northwest Quarter,
Section 33;

All in Township 9, South; Range 33 East.

The Southern Minerals State 15 No. 1 is presently being used as a salt water disposal well. Permission to inject produced salt water into this well was obtained by Commission Order No. R-2924 in June, 1965. This water is being injected into the aquefer below the water-oil contact in the Slaughter Zone of the San Andres. To date, 41,000 barrels have been injected at approximately 900 psi at 225 barrels oil per day. No beneficial effects have been detected as a result of this



injection program.

We are requesting permission to inject produced San Andres water into two additional wells, in order to further evaluate the possibility of maintaining the reservoir pressure by bottom water injection (injecting below the water-cil contact).

The Southern Minerals State 21 No. 4 is a replacement well for the Southern Minerals State 21 No. 3, which was drilled in August, 1964, and subsequently lost due to hole problems. Attached is a plat showing the exact location of the proposed replacement well. Also attached is a diagrammatic sketch showing how this well is to be equipped for injection, utilizing 2-1/2" plastic coated tubing for casing.

The Gonsales Federal 33 No. 4 was drilled to a total depth of 4534' in July, 1965. The Slaughter Zone was tested and found to be predominantly (98%) water productive. It is presently temporarily abandoned. Attached is a diagrammatic sketch showing the proposed method of converting this well to injection status.

Coastal States is not requesting any allowable change or transfer of allowables at this time. As soon as sufficient response has been demonstrated, efforts to unitize the entire field will be resumed.



The State Engineer, as well as all offset operators, are being notified by copies of this application.

- Q In summary, as I understand you, you're seeking permission to inject salt water below the aquefer?
  - A Below the water-oil contact.
- Q Below the water-oil contact in these two new wells to make three that will be getting it?
  - A Yes.
  - Q You wish to use water from any available source?
- A Yes, sir, we are actively seeking an outside source of water.
  - Q Just not getting enough?
- A We would like to put in more, in other words, than we're taking out.
- Q Further, as I understand you, what you seek is more or less a pilot project under the Commission Rules for transfer of allowables or anything of that nature, but more importantly that the project area be the entire field because we have to try this well and it doesn't work, and we try this one and it does work, is that it?

A Yes, we're asking for these three wells, now.

However, we do plan to try additional wells in the near
future and we would like for those after proper notice, to be
approved administratively.



(Whereupon, Applicant's Exhibit "A" marked for identification.)

- Q Mw. Mr. McGrew, there has been identified Applicant's Exhibit "A" which consists of a letter which you read to the Commission which includes 11 exhibits. Let's start with Exhibit 2, I believe that shows in yellow the present salt water disposal well and the injections wells?
  - A Right.
- Q In line with your statement a minute ago with respect to the project area being the entire field, would you envision that you might use Southwest of Southwest of Section 16 as a salt water disposal?
- A As a pressure maintenance injection well, yes, sir.

  We do anticipate using this well in the very near future and

  it was a well that was drilled to the Bo "C", and pipe is

  left through the San Andres and it is not a San Andres completion

  but we would like to go back and inject water below the contact

  at a later date. However, we do not ask for it at this time.
- Q But this type of well is what you would seek
  administrative approval on or ask subsequent development of this
  pressure maintenance project?
  - A Yes, sir.
- Q What I mean, you were mentioning you were going to have to drill, which is the next to your Southern Mineral, the well in the Southeast of the Northeast of Section 21, blue?



1092 • PHONE 243-6691 T • PHONE 256-1294 •

1120 SIMMS BLDG. • P.O. BOX 10

- Yes, sir. Α
- Actually that well will not be the dry hole, it will Q be slightly to the west?
  - That's true.
- The other well in the Northwest Northwest of Section 33, that is the present existing well, that's the Gonsales well?
  - That's right. Λ
- I believe Exhibit 3 shows the existing lines from wells producing water to where its injected on those you're proposing?
- That's right, it shows the gathering point of the salt water and our injection lines delivering this water to the injection well.
- Right. Now, let's refer to Exhibit 4 and tell what this is?
- This is a structure map on the top of the Slaughter Zone. It shows that the wells that we propose at this time are on the down-dip side located at or below the water-oil contact, and we have, as I said, tried to hold to this. However, at a later date if we move up to the well that you mentioned previous in Section 16, Southwest Southwest, we would go deeper in the section and inject into the aquefer below the water-oil contact, although it would be deeper into the producing section.





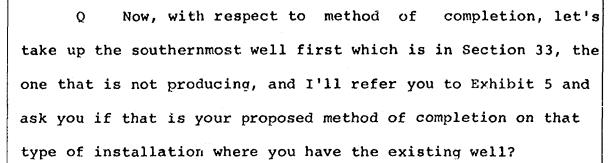


Exhibit 5 shows the type of completion we would like to use on the well drilled primarily for injection purposes.

Exhibit 5 is the one you drilled for injection Q purposes?

> Α Yes.

I beg your pardon, let's take that up. You show 8-5/8" casing, what about your cement?

8-5/8" set at about 250 and the cement is circulated on that.

That effectively seals off the fresh water zones? Q

In that area, yes, sir.

Q Then you're going to perforate below the oil-water contact as you depict here?

Α Yes, sir.

Exhibit "C" would be an instance where you had a 4-1/2" casing already there, is that correct?

That's right. If it's an existing well. All the wells in the field have 4-1/2" casing except for one or two



that might have 5-1/2. In those cases we would run 2" plastic coated tubing and inject below a packer which would be set below the cement on the long casing.

- Q And again you will protect the casing?
- A Yes, sir.
- Q Do you have a log on any of these wells?
- A On the Gonsales Number 4 we show a strip of a section of the log.
  - Q That is Exhibit 7, is it not?
- A That's right, and it shows the perforated interval that will be used to inject into this formation.
- Q And, of course, we don't have a log on the other wells since they haven't been drilled?
  - A No, sir.
- Q All right, siz. Now, has that new well that hasn't been drilled, has it been staked?
  - A Yes, sir, and it is shown on Exhibit Number 8.
- Q Now, how about this salt water that we're injecting, what's the content of it?
- A This Exhibit 9 is an analysis of the produced San Andres water in this Flying "M" San Andres Field, and it shows that it is fairly highly mineralized and it has a high chloride content and also a high calcium content.
  - Q And is the field a sample of the water?



1 . ALBUQUERQUE, NEW MEXICO ALBUQ JERQUE, NEW MEXICO

243-6691

BOX 1092

P.O. BANK

S FIRST NATIONAL F

Q I see. And Exhibit 11, I think Exhibit 10 is meaning also Exhibit 11, what is this?

A This is a plot of the bottom hole pressure versus time in the field. This has been presented in prior testimony and it has been brought up to date on this plat. The last point out there is the most recent pressure we have obtained on those, what our bottom pressure is declining. And so we need to step up our rate of developing this pressure maintenance project.

Q What would be the effect if the pressure maintenance project fails, will the field die?

A The field will continue to produce under primary mechanism until the bottom hole pressure gets down to such point it would be uneconomic.

Q So to institute pressure maintenance we're simply going to loose the entire field?

A That's right.

Q Now, again by way of quick review, as I understand you, you seek here a pressure maintenance project in an area defined as an entire field in the Flying "M" San Andres, you seek to inject both the produced water and such other water as you can obtain, you seek for administrative approval of expansion of this project and abandonment of unsuccessful



O SIMMS BLDG. . .

injection wells?

Yes, sir, that's right. We would like to discontinue injecting in any well that proves to be unsuccessful and to change to another well at our discretion after proper notice has been given.

- You assume you would envision the usual notices to Q offset operators and so forth?
  - Yes. Α
  - And if any objections we would have a hearing?
  - That's true. Α
- Is there anything I did not ask you that you think Q would be of information to the Examiner?
- The only thing, the well we will drill, we will Α first test that well for possible oil production; it's right along the water-oil contact and would be oil productive and it will be tested and if it will produce oil we would like to produce it and drill another well at further down-dip.
- Was this Exhibit "A" prepared by you or under your Q direction, supervision?
  - Yes, sir. Α

MR. CHRISTY: I believe that's all from this witness.

CROSS-EXAMINATION

BY MR. IRBY:



Q Mr. McGrew, what is the age of these wells to be converted?

A Well, this Gonsales 4, I believe I said was drilled in July '65.

MR. CHRISTY: The other well we haven't drilled yet.

A The other well is not drilled. The 15-1 which had been on injection for about 8 months was drilled in about 1960.

Q (By Mr. Irby) Was the casing in this Gonsales well new?

A Yes, sir.

Q Now, you had another well over there to the west that you anticipated asking for later, is it an old well?

A It was drilled in '65, it was drilled to the Bo "C" and 8-5/8" was set through the San Andres, so if this is put on we will run tubing and inject through tubing with a packer set with the 8-5/8" as the casing.

Q Now, to go to your Southern Mineral State 21, Number 4, there are no specification on this plastic coated casing that you propose to put in there. What internal pressure will this casing withstand?

A We will run regular 2-7/8" tubing, J55, in this, and the internal pressure--just from memory I don't know exactly,



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but it is approximately 4700 pounds and we will be injecting at a pressure not to exceed 2200 pounds.

- Q Your maximum injection pressure, 2200 pounds?
- A Yes, sir.
- Q And you did testify that the surface casing in all instances was circulated with cement to the surface?
- A Yes, sir, that is required and we do that on every one of them.
- Q Now, has the Santa Rosa porosity been tested in any of the wells that have been drilled so far?
  - A No, sir, it hasn't.
  - Q I mean permeability, I'm sorry?
- A The permeability of it has not been tested. We had discussed maybe drilling a cable to the well, to this Santa Rosa, to check it as a possible outside source of water. This has not been done, it has been done in the Tobac Field which is about five miles from this, and the sand is barren and does not contain water, and it's doubtful that it contains water in the Flying "M" area.
- Q Do you plan to do this as a part of your drilling program on this Number 4?
- A No, sir, we haven't planned to do that. It's impossible to test this effectively with a rotary rig.
  - Q I see. You intend to drill this with a rotary?



A Yes, sir.

MR. IRBY: That's all the questions of the witness.

MR. UTZ: The witness may be excused.

MR. CHRISTY: At this point I would like to offer

Applicant's Exhibit "A" including 1 through 11.

(Whereupon, Applicant's Exhibit "A" offered into evidence.)

MR. UTS: Without objection the Exhibit will be admitted.

(Whereupon, Applicant's Exhibit "A" received into evidence.)

MR. CHRISTY: That's all.

MR. UTZ: The case will be taken under advisement and we will recess for lunch until 1:30.

(Whereupon, the hearing was recessed for lunch.)



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WITNESS

JACK R. MCGREW

EXHIBITS

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Direct Examination by Mr. Christy

Cross-Examination by Mr. Irby

NUMBER	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
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STATE OF NEW MEXICO ) SS COUNTY OF BERNALILLO)

I, BOBBY J. DAVIS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 29th day of March, 1966.

Bobby J. Sauce NOTARY PUBLIC

My Commission Expires: March 13, 1969



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SHELL OIL COMPANY JER SHEELER WESTERN DIVISION PRODUCTION WANAGER.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATEOT