

CASE 5556: Appl. of ATLANTIC
RICHFIELD for SALT WATER DISPOSAL,
Iea County

CASE NO.

5556

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,
ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 24, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of Atlantic Richfield
Company for salt water disposal,
Lea County, New Mexico.

CASE
5556

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

Thomas Derryberry, Esq.
Legal Counsel for the Commission
State Land Office Building
Santa Fe, New Mexico

For the Applicant:

Clarence Hinkle, Esq.
HINKLE, BONDURANT, COX & EATON
Attorneys at Law
Hinkle Building
Roswell, New Mexico

sid morrish reporting service
General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

I N D E X

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ROBERT MALAISE

Direct Examination by Mr. Hinkle

3

Cross Examination by Mr. Nutter

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EXHIBIT INDEX

Page

Offered Admitted

Arco's Exhibit No. 1, map

9

9

Arco's Exhibit No. 2, structure map

9

9

Arco's Exhibit No. 3, log

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9

Arco's Exhibit No. 4, diagrammatic sketch

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1 MR. NUTTER: The Hearing will come to order, please
 2 The first case will be 5556.

3 MR. DERRYBERRY: Case 5556, application of Atlantic
 4 Richfield Company for salt water disposal, Lea County, New
 5 Mexico.

6 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant,
 7 Cox and Eaton, Roswell, appearing on behalf of Atlantic
 8 Richfield. We have one witness and four exhibits.

9 MR. DERRYBERRY: Will you stand and be sworn?
 10 (THEREUPON, the witness was duly sworn.)

11 ROBERT MALAISE
 12 Called as a witness, having been first duly sworn, was
 13 examined and testified as follows:
 14

15 DIRECT EXAMINATION

16 BY MR. HINKLE:

17 Q State your name, residence and by whom you are
 18 employed?

19 A Robert Malaise, Atlantic Richfield and from Midland
 20 Texas.

21 Q Have you previously testified before the Commission

22 A Yes, I have.

23 Q And qualified as a petroleum engineer?

24 A Yes.

25 Q And have you made a study of the Vacuum Grayburg-

1 San Andres Field?

2 A. Yes, I have.

3 MR. HINKLE: Are his qualifications acceptable?

4 MR. NUTTER: Yes, they are.

5 Q (Mr. Hinkle continuing.) Are you familiar with the
6 application of Atlantic Richfield in this Case?

7 A. Yes, sir.

8 Q. What is Atlantic Richfield seeking to accomplish?

9 A. It seeks authority to dispose of produced water by
10 injection into the San Andres formation through the open-hole
11 interval from four thousand, five hundred and seventy-three
12 feeto to four thousand, six hundred and eighty-two feet in
13 its State "F" TG Well No. 5 located in Unit A of Section 36,
14 Township 17 South, Range 33 East in the Vacuum Grayburg-
15 San Andres Pool in Lea County.

16 Q. Have you prepared or has there been prepared under
17 your supervision and direction certain exhibits for introduction
18 in this case?

19 A. Yes, there have.

20 Q. And they are the ones that have been marked One
21 through Four?

22 A. Yes.

23 Q. The first one is Exhibit One, explain what this is
24 and what it shows?

25 A. Exhibit One shows Atlantic Richfield's State "F"

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1 lease on which we have five wells, number one through five.

2 Q What section is that in?

3 A That is in Section 36, Township 17, Range 33 East,
4 and it's in the north half of the section. We have the State
5 "F" lease with five wells, one through five and the State "E"
6 lease with one producing well. All of these wells are San
7 Andres completions.

8 The leases are at an economic limit as far as the
9 oil production.

10 The Well No. 5 we have a triangle around it showing
11 that it is our proposed injection well.

12 Q All of these are stripper wells, you say?

13 A Yes, they are all stripper wells.

14 Q Does this also show the ownership of all of the
15 acreage in the area?

16 A Yes, it does.

17 Q The adjoining off-set owners?

18 A Yes, off-set we have Kincaid and Watson, they have
19 an off-set lease and Sohio Petroleum in Section 31.

20 Q Why do you think it is necessary to convert the
21 well shown in the northeast northeast of 36 to a disposal
22 well?

23 A At this time all of the produced water is having
24 to be hauled by trucks and the hauling costs have gone up
25 to the point that it would be uneconomical to produce the

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1 six wells. We have taken the Number 5 well because it is the
2 well that produces the most water and the least amount of
3 oil and by converting it to an injection well we will lower
4 our operating costs to the point we can properly produce the
5 leases.

6 Q How much oil and how much water is the proposed
7 well producing at the present time?

8 A In June of 1975 the Number 5 well averaged one
9 barrel of oil and I believe thirty-six barrels of water.

10 Q How much water do you anticipate will be disposed of
11 in this well?

12 A There will be around, at this particular time,
13 around twenty-five to thirty barrels of water a day is what
14 is being produced. We anticipate the water to go up in the
15 future.

16 Q This will be disposed of into the producing forma-
17 tion, that is the San Andres formation?

18 A That is correct.

19 Q Do you anticipate any adverse effects by reason
20 of disposing of the water into the producing formation?

21 A No, I don't anticipate any effect, adverse effect.
22 If anything it should benefit the area. They are in a state
23 of depletion with the bottom-hole pressure probably in the
24 range of two hundred to two hundred and fifty pounds, and if
25 anything it would act as a drive, a water drive.

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1 Q Are there any other water disposal wells disposing
2 of water into the San Andres formation in this area?

3 A Yes, there is one disposing into the San Andres.
4 Sohio Lea Number 4, which is in the far southwest corner in
5 Section 31 is a disposal well and has been approved and is
6 injecting into the San Andres.

7 Q That has been approved as a disposal well by the
8 Commission?

9 A Yes.

10 Q Do you have any further comments with respect to
11 Exhibit Number One?

12 A No, sir.

13 Q Refer to Exhibit Number Two and explain what this
14 is and what it shows?

15 A Exhibit Number Two shows the proposed salt water
16 disposal well. Further it shows a structure map on the
17 top of the San Andres. It shows the offset production on
18 the Kincaid and Watson lease. The production for June 1975,
19 both of these wells are San Andres wells on the off set lease.
20 The Number 1 averaged three barrels of oil and no water and
21 the Number 2 one barrel of oil and no water for June 1975.

22 Q Have you furnished the off-set owners with copies
23 of the application in this case?

24 A They have been furnished, both Sohio Petroleum
25 and Kincaid and Watson.

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1 Q Have you had any objections?

2 A None that we know of, no.

3 Q Do you have any further comments with respect to
4 Exhibit Two?

5 A No, sir.

6 Q I believe Exhibit Three is a copy of the log of
7 the injection well. We only have one copy of that. Do you
8 have any comments with respect to Exhibit Three?

9 A No more than it is just a gamma ray neutron log of
10 the subject well.

11 Q Now, refer to Exhibit Four and explain what that
12 is and what it shows?

13 A Exhibit Number Four is a diagrammatic sketch of
14 the well bore as we propose to inject water into the State
15 "F" TG Well No. 5. On the exhibit we show that the tubing
16 would be two and three-eighths inch OD tubing that would
17 be plastic coated. The annulus would be between the tubing
18 and the casing and it would have chemically treated water in
19 the tubing casing annulus and on here we show an injection
20 rate of one hundred barrels of water per day. This would
21 be a maximum rate that we would ever anticipate in this
22 particular well bore.

23 Also on the exhibit we have the history of the
24 casing program that had been run in the well in 1956 when
25 the well was completed, showing five and a half inch casing

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1 set at forty-five, seventy-three. The total depth of the
2 well was forty-six, eighty-two, and this is the open hole
3 section in the San Andres which we propose to inject into.

4 Q In your opinion, will the completion of this well
5 and in the manner portrayed by this exhibit confine the
6 injection of water to the San Andres formation?

7 A Yes, I believe so.

8 Q Do you have any further comments with respect to
9 Four?

10 A No, sir.

11 Q In your opinion, if this application is approved,
12 will it be in the interest of conservation and the prevention
13 of waste and protect correlative rights?

14 A Yes, sir.

15 MR. HINKLE: We would like to offer Exhibits One
16 through Four.

17 MR. NUTTER: Exhibits One through Four will be
18 admitted into evidence.

19 MR. HINKLE: That's all we have.

20 CROSS EXAMINATION

21 BY MR. NUTTER:

22 Q I didn't get your name.

23 A It's Malaise, M-a-l-a-i-s-e.

24 Q Mr. Malaise, the location of this lease of yours
25 is in the extreme far west portion of the Vacuum Pool, is

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1 that right?

2 A. Yes, sir.

3 Q. And you have six wells at the present time on that
4 lease, is that right?

5 A. Well, there are five wells on the F lease and one
6 well on the State E lease.

7 Q. I see. And the one that you are converting to salt
8 water disposal is the one that makes the most water at the
9 present time and it is making about one barrel of oil and
10 thirty-six barrels of water?

11 A. Yes, sir.

12 Q. And the remaining five wells then are producing
13 from twenty-five to thirty barrels of water, is that it?

14 A. The total amount, yes, sir.

15 Q. For all five?

16 A. For all five, and I believe we have none, well,
17 seven barrels of oil is the total or seven barrels is on
18 this second exhibit to show that the Number 2 well does make
19 seven barrels and that is the most daily average that we
20 have on the two leases.

21 Q. Now the open hole interval in the Number 5 well
22 is the same interval that the other five wells are producing
23 from, is that correct?

24 A. That's correct, yes, sir.

25 Q. Are the others open hole completion wells?

1 A Yes, sir, every well we have of the six is open
2 hole.

3 Q And placing this water in the formation in the
4 equivalent to the producing interval on these other wells
5 won't damage those wells?

6 A No, sir. We believe here, if anything, it would
7 have a helpful effect in that it would build the bottom hole
8 pressure up, possibly. We don't really believe it will really
9 ever put that much water into the formation.

10 Q It probably won't enhance the production, but it
11 won't hurt it either?

12 A No, sir, it won't hurt it at all. There is some
13 possibility at a later date a secondary recovery project
14 could be started if it was. This particular well also would
15 fall in line with an eighty-acre five spots as an injection
16 well.

17 Q Are there any efforts under way to unitize this
18 end of the field?

19 A We just made a study and in an upcoming hearing,
20 I believe we are scheduled the 8th of October, in that
21 hearing we are proposing a secondary recovery project on our
22 State B and C which is just two sections east. The study
23 has been completed in the area as far as these two leases
24 and at this time it does not look like it is economical.
25 We are proposing offset injection or offset agreements being

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1 signed for lease-line agreements for back-up injection and
2 we are in the process of negotiating with our offset
3 operators, whether to form a unit or go on lease-line
4 agreements. This will back up the West Vacuum Unit that
5 you see on the exhibit in Section 33, the first part of it,
6 that Texaco operates.

7 There is effort at this time to start or continue
8 secondary recovery operations or to extend them in the west
9 part of the West Vacuum Field.

10 Q I see. On your Exhibit Number Four you indicate
11 the depth at which this casing is set and the sacks of
12 cement used, but you don't have the top of the cement. Could
13 you tell me the top of the cement?

14 A I will have to do a little calculating. We did not
15 have any temperature survey or anything and it would be a
16 calculated depth on that four hundred sacks.

17 Q How about the seven hundred on the other five?

18 A That would be the same way. I don't know whether
19 they circulated that eight and five-eighths or not. I would
20 have to go back and look that up.

21 Q Would you furnish that information to the Commission,
22 please?

23 A Yes, sir.

24 Q Now, I do note that you stated that your tubing
25 would be plastic coated and the annulus would be loaded with

1 inhibited water. However, you don't show a pressure gauge
2 at the surface. You would be willing to put a pressure
3 gauge on at the surface, wouldn't you?

4 A. Yes, sir.

5 Q. On the annulus?

6 A. Yes, sir, there will be.

7 MR. NUTTER: Are there any further questions of
8 Mr. Malaise? He may be excused.

9 Do you have anything further, Mr. Hinkle?

10 MR. HINKLE: Nothing further. The water flood
11 project which he was talking about and which will come up
12 on the eighth is shown on Exhibit One in Section 32 as it
13 is outlined there.

14 MR. NUTTER: That is on the Arco C Lease, is
15 that right?

16 MR. MALAISE: The B and C in Section 32.

17 MR. HINKLE: Thank you.

18 MR. NUTTER: Does anyone have anything they wish
19 to offer in Case 5556?

20 We will take the case under advisement.
21
22
23
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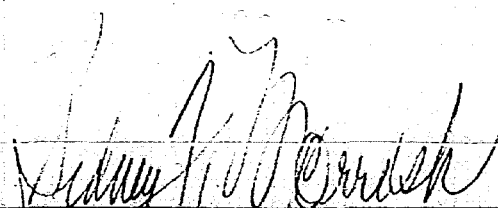
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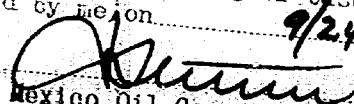
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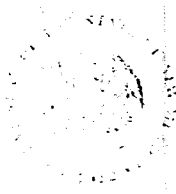
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State of New Mexico)
) ss.
County of Santa Fe)

I, SIDNEY F. MORRISH, a court reporter, do hereby
certify that the foregoing and attached Transcript of Hearing
before the New Mexico Oil Conservation Commission was reported
by me, and the same is a true and correct record of the said
proceedings to the best of my knowledge, skill and ability.


Sidney F. Morrish, Court Reporter

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 5556
heard by me on 9/24, 1975

Examine
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

LAND COMMISSIONER

PHIL R. LUCERO

September 30, 1975



STATE GEOLOGIST

EMERY C. ARNOLD

DIRECTOR
JOE D. RAMEY

Clarence Hinkle
Hinkle, Bondurant, Cox
& Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: CASE NO. 5556
ORDER NO. R-5106

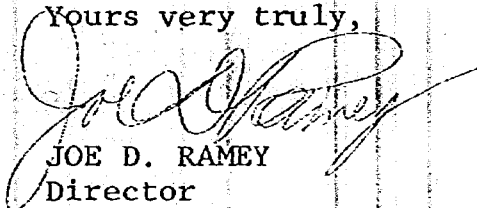
Applicant:

Atlantic Richfield Company

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC ☒
Artesia OCC ☐
Aztec OCC ☐

Other ☐

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. 5556
Order No. R-5106

APPLICATION OF ATLANTIC RICHFIELD
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 8, 1975, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 30th day of September, 1975, 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, Atlantic Richfield Company, is the owner and operator of the State "F" TG Well No. 5, located in Unit A of Section 36, Township 17 South, Range 33 East, NMPM, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the open-hole interval from approximately 4,573 feet to 4,682 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 4500 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1500 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Commission of the date and time of

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Case No. 5556
Order No. R-5106

the installation of disposal equipment so that the same may be inspected.

(7) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(8) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Atlantic Richfield Company, is hereby authorized to utilize its State "P" TG Well No. 5, located in Unit A of Section 36, Township 17 South, Range 33 East, NMPM, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, to dispose of produced salt water into the San Andres formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4500 feet, with injection into the open-hole interval from approximately 4,573 feet to 4,682 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1500 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Commission of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Commission's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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Case No. 5556
Order No. R-5106

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Phil R. Lucero
PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary

SEAL

jr/

Atlantic Richfield Company
Permian District
Engineering Section

Subject: Wellbore Diagram
Well Name: State "F" TG No. 5
Operator: Atlantic Richfield Field: Vacuum-Grayburg-
Location: 990' PNL & 660' FEL, Sec. 36, 17S, 33E San Andres

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By R. M. Malaise

Date 8-13-75

Elevation: 4105' GL, 4114' DF, RKB

TD: 4682' PBD:

Producing Zone(s): San Andres

Casing Program

2-3/8" OD tubing - inter- nally plastic coated.	8-5/8" 5 1/2"	47 130
Injecting 100 bbls pro- duced (San Andres) salt water per day from the State "E" & "F" TG leases	NA NA	J-55 J-55
	24# 14#	NA NA
	1520' 4573'	
Chemically treated water in casing-tubing annulus	700 sx. 400 sx.	

OH 4573-4682'
(109')

LIST:

- OD, inches
- No. of jts.
- Length
- Grade
- Range
- Thread
- Setng. Depth
- Sx of cm, TOC
- Open hole
size & length
(if applicable)

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 7

CASE NO. 5554

Producing Interval(s)

NA
8000 gals. acid
36BOPD + 30BWPD
San Andres Open Hole Section 4573-4682'
Pumping

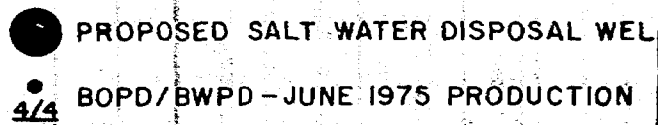
LIST:

- Perfs, nbr &
size.
- Treatment(s)
- Potential
- Multiple
Completions ?
Describe in-
hole equip.
- Prod. Method

Spud Date: 12-21-55

Completion Date: 1-27-56

R-34-E



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
off EXHIBIT NO. 2
CASE NO. 5556 ±12

Atlantic Richfield Company
North American Producing Division
Petroleum District - Midland Area

WEST VACUUM FIELD
Lee County, New Mexico

STRUCTURE MAP
TOP OF SAN ANDRES

SCALE: 1" = 1000'

Atlantic Richfield Company
Permian District
Engineering Section

Subject: Wellbore Diagram
Well Name: State "F" TG No. 5
Operator: Atlantic Richfield Field: Vacuum-Grayburg-
Location: 990'FNL&660'FEL, Sec. 36, 17S, 33E San Andres

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By R. M. Malaise

Date 8-13-75

Elevation: 4105' GL, 4114' DF, RKB

TD: 4682' PBD:

Producing Zone(s): San Andres

Casing Program

	8-5/8"	5 1/2"
2-3/8" OD tubing - inter- nally plastic coated.	47	130
	NA	NA
Injecting 100 bbls pro- duced (San Andres) salt water per day from the State "E" & "F" TG leases	J-55	J-55
	24#	14#
	NA	NA
	1520'	4573'
Chemically treated water in casing-tubing annulus	700 sx.	400 sx.
	OH 4573-4682'	
	(109')	

LIST:

- OD, inches
- No. of jts.
- Length
- Grade
- Range
- Thread
- Setng. Depth
- Sx of cm, TOC
- Open hole
size & length
(if applicable)

Producing Interval(s)

	NA
	8000 gals. acid
	36BOPD + 30BWPD
San Andres	
Open Hole Section	
4573-4682'	
	Pumping

LIST:

- Perfs, nbr &
size.
- Treatment(s)
- Potential
- Multiple
Completions ?
Describe in-
hole equip.
- Prod. Method

Spud Date: 12-21-55

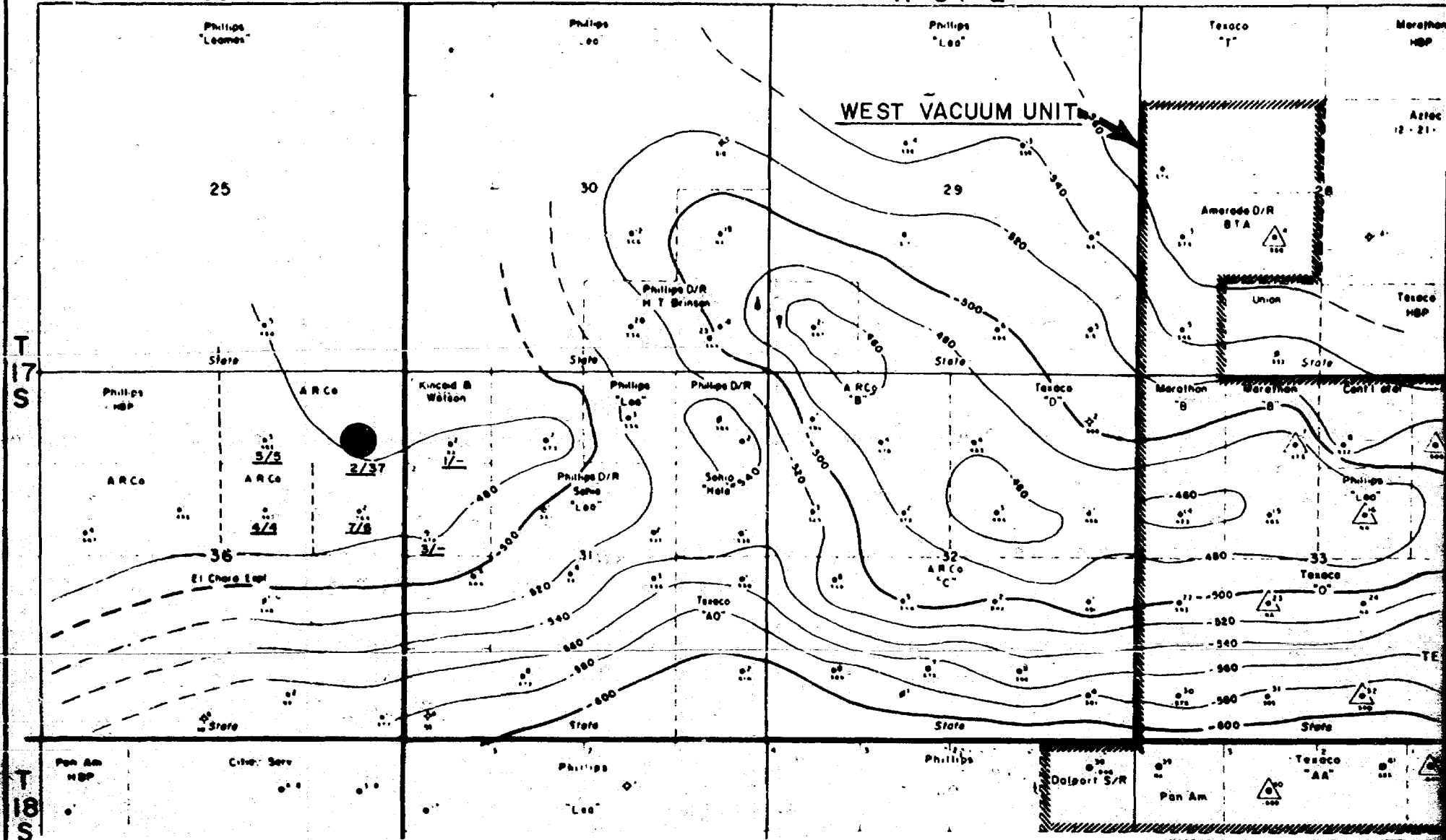
Completion Date: 1-27-56

EXHIBIT NO 4

Printed in U.S.A.

R-33-E

R-34-E



Atlantic Richfield Company
North American Producing Division
Petroleum Division, Houston, Texas

WEST VACUUM FIELD
Lea County, New Mexico

STRUCTURE MAP
TOP OF SAN ANDRES

SCALE: 1" = 1000'

DATE	BY	CHKD
12/1/75	J. W. B.	J. W. B.
12/1/75	J. W. B.	J. W. B.

EXHIBIT NO. 2

Atlantic Richfield Company
Permian District
Engineering Section

annulus press gauge
Subject: Wellbore Diagram
Well Name: State "F" TG No. 5
Operator: Atlantic Richfield Field: Vacuum-Grayburg-
Location: 990' FNL & 660' FEL, Sec. 36, 17S, 33E San Andres

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By R. M. Malaise Date 8-13-75

Elevation: 4105' GL, 4114' DF, RKB

TD: 4682' PBD:

Producing Zone(s): San Andres

Casing Program

8-5/8" 5 1/2"	
2-3/8" OD tubing - internally plastic coated.	47 130
Injecting 100 bbls produced (San Andres) salt water per day from the State "E" & "F" TG leases	NA NA
	J-55 J-55
	24# 14#
	NA NA
	1520' 4573'
Chemically treated water in casing-tubing annulus	700 sx. 400 sx.
	OH 4573-4682' (105')

LIST:

- OD, inches
- No. of jts.
- Length
- Grade
- Range
- Thread
- Setng. Depth
- Sx of cmt, TOC
- Open hole size & length (if applicable)

Producing Interval(s)

NA	
8000 gals. acid	
36BO/DPD + 30BWPD	
San Andres Open Hole Section 4573-4682'	
Pumping	

LIST:

- Perfs, nbr & size.
- Treatment(s)
- Potential
- Multiple Completions? Describe in-hole equip.
- Prod. Method

Spud Date: 12-21-55

Completion Date: 1-27-56

EXHIBIT NO. 4

Dockets Nos. 23-75 and 24-75 are tentatively set for hearing on October 8, and October 15, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 24, 1975

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Joe D. Ramey, Alternate Examiner:

CASE 5555: Application of Lone Star Producing Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced water into the Devonian formation through the open-hole interval from 12,180 feet to 12,226 feet in its Santa Fe Well No. 2 located in Unit 0 of Section 19, Township 9 South, Range 37 East, East Crossroads-Devonian Pool, Lea County, New Mexico.

CASE 5556: Application of Atlantic Richfield Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced water by injection into the San Andres formation through the open-hole interval from 4,573 feet to 4,682 feet in its State "F" TC Well No. 5 located in Unit A of Section 36, Township 17 South, Range 33 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

CASE 5557: Application of C & K Petroleum, Inc. for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Power Deep Unit comprising 5,713 acres, more or less, of State and Federal lands in Townships 17 and 18 South, Ranges 30 and 31 East, Eddy County, New Mexico.

CASE 5558: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its BZ Well No. 12 to be drilled at a point 660 feet from the South and West lines of Section 21, Township 17 South, Range 25 East, Eddy County, New Mexico, to have dedicated the W/2 of said Section 21.

CASE 5559: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled at a point 660 feet from the North and West lines, or in the alternative, 1980 feet from the North line and 660 feet from the West line of Section 30, Township 17 South, Range 26 East, Eddy County, New Mexico, to have dedicated the N/2 of said Section 30.

NEW MEXICO OIL CONSERVATION COMMISSION

OPERATOR Atlantic Richfield Company		ADDRESS P. O. Box 1610, Midland, Texas	
LEASE NAME State "F" TG	WELL NO. 5	FIELD Vacuum-Grayburg-San Andres	COUNTY Lea
LOCATION			
UNIT LETTER A ; WELL IS LOCATED 990 FEET FROM THE North LINE AND 660 FEET FROM THE East			
LINE, SECTION 36	TOWNSHIP 17	RANGE 33	NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	8-5/8"	1520'	700 sx.		
INTERMEDIATE					
LONG STRING	5-1/2"	4573'	400 sx.		
TUBING	2-3/8"	4500'	NAME, MODEL AND DEPTH OF TUBING PACKER		
			Baker Tension Packer		
NAME OF PROPOSED INJECTION FORMATION			TOP OF FORMATION		BOTTOM OF FORMATION
San Andres			4550'		4682'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLES?	PROPOSED INTERVAL(S) OF INJECTION		
Tubing		Open Hole	4573-4682'		
IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?			HAS WELL EVER BEEN PERFORMED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?	
No	Producer			No	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
300-400 feet		2900'		3850'	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
30		100	Closed	Pressure	1500
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -			WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
			Yes	Yes	No

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

Scharbauer Cattle Company, P. O. Box 1471, Midland, Texas 79701

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL

Phillips Petroleum Company, Phillips Building, Odessa, Texas 79760

Kincaid & Watson Drlg. Co., P. O. Box 498, Artesia, New Mexico 88210

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAN OF AREA	ELECTRICAL LOG	DIAGRAMMATIC SKETCH OF WELL
	Yes	Yes	Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

J. J. Jones (S)

District Engineer
(Title)

August 18, 1975
(Date)

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.

Case 5556

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR Atlantic Richfield Company		ADDRESS P. O. Box 1610, Midland, Texas	
LEASE NAME State "F" TG	WELL NO. 5	FIELD Vacuum-Grayburg-San Andres	COUNTY Lea
LOCATION UNIT LETTER A ; WELL IS LOCATED 990 FEET FROM THE North LINE AND 660 FEET FROM THE East LINE, SECTION 36 TOWNSHIP 17 RANGE 33 NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	8-5/8"	1520'	700 BX.
INTERMEDIATE			
LONG STRING	5-1/2"	4573'	400 BX.
TUBING	2-3/8"	4500'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Tension Packer
NAME OF PROPOSED INJECTION FORMATION San Andres		TOP OF FORMATION 4530'	BOTTOM OF FORMATION 4682'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLE? Open Hole	PROPOSED INTERVAL(S) OF INJECTION 4573-4682'
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Producer		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 300-400 feet		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA 2900'	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 3650'
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 30	MINIMUM 100	MAXIMUM 100	OPEN OR CLOSED TYPE SYSTEM Closed
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE - Yes		WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) Scharbauer Cattle Company, P. O. Box 1471, Midland, Texas 79701		ARE WATER ANALYSES ATTACHED? No	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
Phillips Petroleum Company, Phillips Building, Odessa, Texas 79760			
Kincaid & Watson Drlg. Co., P. O. Box 498, Artesia, New Mexico 88210			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
PLAT OF AREA Yes		THE NEW MEXICO STATE ENGINEER Yes	
ELECTRICAL LOG Yes		DIAGRAMMATIC SKETCH OF WELL Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

J. J. Lued
(Signature)

District Engineer

(Title)

August 18, 1975

(Date)

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.

Atlantic Richfield Company
Permian District
Engineering Section

Subject: Wellbore Diagram
Well Name: State "F" TG No. 5
Operator: Atlantic Richfield Field: Vacuum-Grayburg-
Location: 990' FNL & 660' FEL, Sec. 36, 17S, 33E San Andres

Page 1
of
Pages 1

By R. M. Malaise

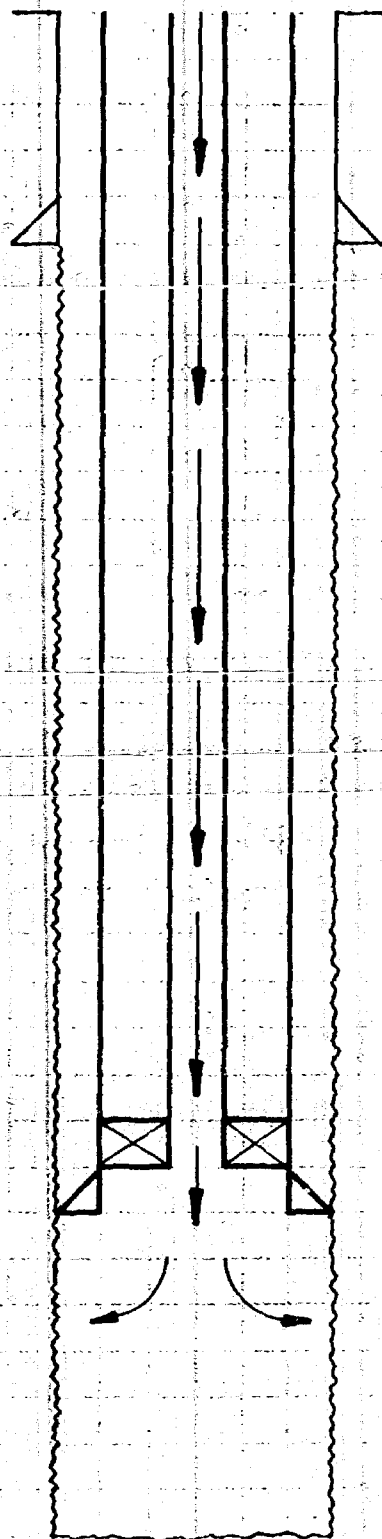
Date 8-13-75

Elevation: 4105' GL, 4114' DF, RKB

TD: 4682'

PBD:

Producing Zone(s): San Andres



Casing Program

8-5/8"	5 1/2"
2-3/8" CD tubing - internally plastic coated.	47 130
Injecting 100 bbls produced (San Andres) salt water per day from the State "E" & "F" TG leases	NA NA
Chemically treated water in casing-tubing annulus	J-55 J-55
	24# 14#
	NA NA
	1520' 4573'
	700 sx. 400 sx.
	OH 4573-4682' (109')

LIST:

- OD, inches
- No. of jts.
- Length
- Grade
- Range
- Thread
- Setng. Depth
- Sx of cmt, TOC
- Open hole size & length (if applicable)

Producing Interval(s)

NA
8000 gals. acid
36BOPD + 30BWPD
San Andres
Open Hole Section
4573-4682'
Pumping

LIST:

- Perfs, nbr & size.
- Treatment(s)
- Potential
- Multiple Completions? Describe in-hole equip.
- Prod. Method

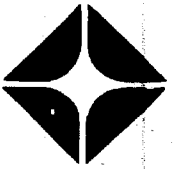
Spud Date: 12-21-55

Completion Date: 1-27-56

Atlantic Richfield Company

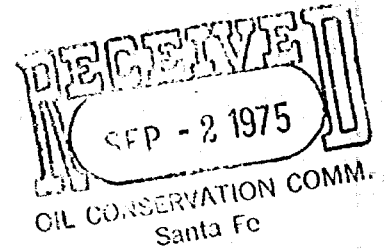
North American Producing Division
Permian District
Post Office Box 1610
Midland, Texas 79701
Telephone 915 682 8631

Case 5556



August 27, 1975

New Mexico Oil Conservation Commission
State Engineer's Office
Attn: Mr. C. Ulvog
P. O. Box 2088
Santa Fe, New Mexico 87501



Re: Conversion of Salt Water Disposal Well
State "F" TG No. 5
Vacuum- Grayburg San Andres Field
Lea County, New Mexico

Gentlemen:

Under the provisions of Rule 701 (B), Atlantic Richfield Company requests a hearing to make application for permission to convert for salt water disposal its State "F" TG well No. 5, located in Section 36, T-17S, R-33E, Lea County, New Mexico. In support of this request, we have submitted in triplicate Commission Form C-108, Application to Dispose of Salt Water by injection into a porous formation by letter dated August 18, 1975.

The subject well will dispose of produced San Andres water from Atlantic Richfield Company's State "E" and "F" TG leases. Average injected volumes are estimated to the 30-40 BWPD. All offset operators and the surface lessee have been sent a copy of this application.

If additional information is necessary, please advise.

Very truly yours,

J. L. Tweed

RMM/agp

AllanticRichfieldCompany

North American Producing Division
Permian District
Post Office Box 1610
Midland, Texas 79701
Telephone 915 682 8631



Case
5556

August 18, 1975

New Mexico Oil Conservation Commission
State Engineer
Attn: Mr. D. Nutter
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Conversion to Salt Water Disposal Well
State "F" TG No. 5
Vacuum-Grayburg-San Andres Field
Lea County, New Mexico

Gentlemen:

Atlantic Richfield Company requests administrative approval to convert the subject well to a salt water disposal well. In support of our request we submit in triplicate Commission Form C-108, Application to Dispose of Salt Water by Injection into a porous formation, to be filed in accordance with Rule 701-B. Attached to the letter are the following items:

- 1) Plat showing location of proposed injection well and location of other wells within a radius of two miles.
- 2) Log of proposed injection well.
- 3) Diagrammatic sketch of the proposed disposal well including name and depth of zone into which injection is to be made, kind of fluid injected, and volume and source of injected fluid.

The subject well will dispose of produced San Andres water from Atlantic Richfield Company's State "E" and "F" TG leases. Average injected volumes are estimated to be 30-40 BWPd. All offset operators and the surface lessee have been sent a copy of this application.

In addition, there is one other disposal well approved in the subject field. Sohio's Lea No. 4 in Section 31, T-17S, R-33E, is injecting produced water into the San Andres formation within the open hole interval from 4920' to 4995'.

If additional information is necessary for consideration of our request, please advise.

Very truly yours,

J. L. Tweed
J. L. Tweed
District Engineer

RMM/agp

Set for hearing 9/24
File 8/26/75

DOCKET MAILED

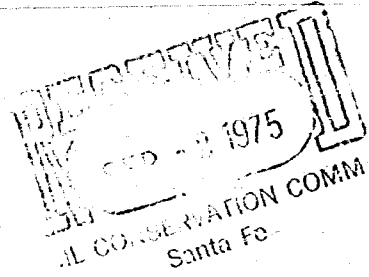
Date 9/12/75

Case 5556

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE Aug. 28, 1975



RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD X _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated _____
for the Atlantic Richfield Co. State "F" TG #5-A 36-17-33
Operator _____ Lease and Well No. _____ Unit, S-T-R

and my recommendations are as follows:

Recommend hearing. This well has offsets producing from same zone.
Rule requires 2 miles distance from nearest producer from same
formation---J.W.R.

Yours very truly,

John W. Runyan

DRAFT

dr/

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. 5556

Order No. R- 5106

APPLICATION OF ATLANTIC RICHFIELD
COMPANY FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 8, 1975,
at Santa Fe, New Mexico, before Examiner, Daniel S. Nutter.

NOW, on this day of September, 1975, 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, Atlantic Richfield Company,
is the owner and operator of the State "F" TG Well No. 5,
located in Unit A of Section 36, Township 17 South,
Range 33 East, NMPM, Vacuum Grayburg-San Andres Pool,
Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to
dispose of produced salt water into the San Andres
formation, with injection into the open-hole interval
from approximately 4,573 feet to 4,682 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer
set at approximately 4500 feet; that the casing-tubing annulus
should be filled with an inert fluid; and that a pressure gauge
or approved leak detection device should be attached to the

annulus in order to determine leakage in the casing, tubing, or packer.

OK
leave
in
(4) That the injection well or system should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than ¹⁵⁰⁰ psi.

(5) That the operator should notify the supervisor of the Hobbs district office of the Commission of the date and time of the installation of disposal equipment so that the same may be inspected.

(6) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(7) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Atlantic Richfield Company, is hereby authorized to utilize its State "F" TG Well No. 5, located in Unit A of Section 36, Township 17 South, Range 33 East, NMPM, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, to dispose of produced salt water into the San Andres formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately _____ feet, with injection into the open-hole interval from approximately 4,573 feet to 4,682 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than ¹⁵⁰⁰~~700~~ psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Commission of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Commission's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(6) 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.

Atlantic Richfield Company

North American Producing Division
Permian District
Post Office Box 1610
Midland, Texas 79701
Telephone 915 682 8631



September 25, 1975

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

Attn: Mr. Daniel S. Nutter

Re: Examiner Hearing - Docket No. 22-75

Case 5556

September 24, 1975

Atlantic Richfield Company
State "F" TG No. 5

*File
Case
5556*

Gentlemen:

In compliance with a request by the New Mexico Oil Conservation Commission, additional information concerning the subject hearing is being furnished as follows:

- 1) 8-5/8" casing (1520' - 24#) cemented with 700 sx. cement in an 11-inch hole. Cement circulated to surface.
- 2) 5-1/2" casing (4573' - 14#) cemented with 400 sx. cement in an 7-7/8" hole. Cement top calculated to be 2265'.

If any additional information is necessary, please advise.

Very truly yours,

Robert M. Malaise

R. M. Malaise

RMM/agp

