

Case Number

4505

Application  
Transcripts.

Small Exhibits

ETC.



dearnley-meier reporting

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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

1

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
February 24, 1971

EXAMINER HEARING

IN THE MATTER OF:

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

Case No. 4505

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

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1 MR. UTZ: Case 4505.

2 MR. HATCH: Application of Atlantic Richfield Company  
 3 for salt water disposal, Lea County, New Mexico.

4 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox  
 5 and Eaton, appearing on behalf of Atlantic Richfield. We have  
 6 one witness and nine exhibits.

7 (Witness sworn.)

8 (Whereupon, Applicant's Exhibits 1 through 9 were marked  
 9 for identification.)

10 E. M. PRINGLE,

11 having been first duly sworn, testified as follows:

12 DIRECT EXAMINATION

13 BY MR. HINKLE:

14 Q State your name, your residence and position.

15 A E. M. Pringle; reside in Roswell, New Mexico; position is  
 16 senior operation's engineer for Atlantic Richfield  
 17 Company.

18 MR. UTZ: What are your initials again?

19 THE WITNESS: E. M.

20 Q (By Mr. Hinkle) Have you previously testified before the  
 21 Oil Conservation Commission?

22 A Yes, sir.

23 Q And qualified as a petroleum engineer?

24 A Yes, sir.

25 Q Your qualifications are a matter of record with the

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1 Commission?

2 A Yes, they are.

3 Q Are you familiar with the application of Atlantic

4 Richfield in this case?

5 A Yes, I am.

6 Q What is Atlantic Richfield seeking to accomplish?

7 A By this application Atlantic Richfield Company is seeking

8 permission to dispose of produced water into Lea 6015

9 Number 2 Well located in Unit N of Section 9, Township 20

10 South, Range 33 East, into the Yates and Seven Rivers

11 Formations in the interval of approximately 2978 feet to

12 3350 feet.

13 Q Have you prepared or has there been prepared under your

14 direction certain exhibits for introduction in this case?

15 A Yes, sir.

16 Q And they are the exhibits that have been marked from 1

17 through 9, inclusive?

18 A Yes, they are.

19 Q Now, refer to Exhibit 1 and explain that to the Examiner.

20 A Exhibit 1 is a plat of the West Teas Pool showing the

21 leases and wells within two miles of the proposed dis-

22 posal well. Denoted by colors are the zones now producing

23 or produced.

24 Also shown is the present salt water disposal well,

25 Lea 6015 Number 1 located in Unit O of Section 9. There

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1 are contours shown on this plat which are drawn on the  
2 top of the Yates Formation and reflect the pool to be a  
3 small anticline which is separated from the Teas Pool to  
4 the east and the Salt Lake Pool to the west by dry holes.

5 Q Does it also show the proposed new injection well?

6 A Yes, it does. This is shown by yellow triangle in Unit O  
7 of Section 9.

8 Q All of the wells which are shown in the West Teas are  
9 producing from the same formation?

10 A Yes, sir. This is the Yates and Seven Rivers Formations.

11 Q Has the Commission heretofore approved the Number 1 Well  
12 as a water disposal well?

13 A Yes, sir, Order R 3588 issued in Case 3948 on November  
14 26th, 1968, authorized disposal of salt water in the Lea  
15 6015 Federal Number 1 Well located in Unit O of Section 9,  
16 Township 20 South, Range 33 East, in the Yates and Seven  
17 Rivers Formations through perforations approximately 3110  
18 feet to 3300 feet.

19 Order R 3588-A issued in Case 4422 on October 27th,  
20 1970, authorized disposal of salt water in the Lea 6015  
21 Federal Number 1 in the Yates and Seven Rivers Formation  
22 through perforations approximately 3054 feet to 3214 feet.

23 Q Does Atlantic Richfield have any other producing wells in  
24 the area?

25 A Atlantic Richfield is the owner of the following wells in

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1 the West Teas Pool, all being located in Section 16,  
 2 Township 20 South, Range 33 East. These wells being the  
 3 Lea-State 886 Number 1 in Unit F, the Number 2 in Unit B  
 4 and the Number 3 in Unit E and, of course, we are the owner  
 5 of the proposed salt water disposal well.

6 Q What is the status of the Federal Number 2 Well which you  
 7 propose to convert to a salt water disposal well?

8 A This well is now making from one to four barrels of water  
 9 per day and no oil from the interval, 2980 feet to 3001  
 10 feet. The well has produced approximately 120,000 barrels  
 11 of oil and 81,000 barrels of water, from perforations 3180  
 12 to 85 and 3190 to 96 feet.

13 That stringer depleted and the well was recompleted  
 14 in the interval 3085 to 3113 in October, 1970, and tested  
 15 seventy-two barrels of water per day and no oil from this  
 16 interval. The zone was shut off with a bridge plug and  
 17 the present interval 2980 to 3001 feet was perforated. As  
 18 I stated, the well has produced one to four barrels of  
 19 water per day from that interval since completion. No  
 20 other zones are thought to be productive in the well.

21 Q Refer to Exhibit Number 2 and explain what this shows.

22 A Exhibit Number 2 is a diagrammatic sketch of the proposed  
 23 disposal well. Shown are the casing sizes, the amounts  
 24 of casing, the cement volumes used, along with the exist-  
 25 ing perforations, proposed tubing and proposed packer

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- 1 setting depth.
- 2 Q The perforated intervals there, those are existing at the
- 3 present time?
- 4 A Yes, sir, they are. Those are the ones existing at the
- 5 present time.
- 6 Q You don't intend to open any new perforations?
- 7 A We are asking permission to inject water from the top of
- 8 the Yates, which is essentially 2978 feet down to the T.
- 9 D. of this well. We don't really anticipate that it will
- 10 be necessary, however, to add perforations for that entire
- 11 interval.
- 12 Q How much water do you anticipate you will dispose of in
- 13 this well?
- 14 A We anticipate disposing of 750 barrels per day to perhaps
- 15 1300 barrels per day and this will be under pressure.
- 16 Q Now, refer to Exhibit Number 3.
- 17 A Exhibit Number 3 is a log of the proposed salt water
- 18 disposal well showing the existing perforations.
- 19 Q This is the same log that was filed with the application?
- 20 I say, is this the same log that was filed with the
- 21 application?
- 22 A Yes, it is.
- 23 Q Now, refer to Exhibit Number 4, explain this.
- 24 A Exhibit Number 4 is a tabulation of production for the
- 25 West Teas Pool for the month of December. It shows the

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1 pool to be making 4156 barrels of oil and 34,129 barrels  
 2 of water for the month or about 134 barrels of oil per  
 3 day and 1100 barrels of water per day.

4 These figures were obtained through telephone calls  
 5 from the other operators other than Atlantic and they may  
 6 vary slightly due to correction. However, those are the  
 7 latest that we have.

8 Of this amount of production about 917 barrels of water  
 9 per day were disposed of in the Lea 6015 Number 1, this  
 10 being the volume of water from Atlantic and Cities Service  
 11 Leases in the West Teas Pool. The tabulation shows that  
 12 the offset wells to the present disposal well, Lea 6015  
 13 Number 1, are the Hansen-Atlantic State Number 1 to the  
 14 southwest in Unit C of Section 16 and the Atlantic 886  
 15 Number 2 to the south in Unit B of Section 16.

16 Q Now, in your opinion, can all of the water which is being  
 17 produced or which you anticipate will be produced can be  
 18 disposed of in these two injection wells?

19 A We believe they can be -- that it can be disposed of in  
 20 the two wells. The Number 1 Well is not capable of taking  
 21 the full capacity of the producers at this time. Order  
 22 R 3588-A, that we referred to, gave permission to add  
 23 perforations in the Number 1 disposal well.

24 This was done and it gave some temporary relief.  
 25 However, we have not been able to realize the full



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1 productive capacity from the producers.

2 Q Have you had an analysis made of the produced water?

3 A Yes, sir. Exhibits 5 and 6 are water analyses, Exhibit  
 4 5 being water analysis from the disposal system which is  
 5 essentially identical to the Exhibit 6 which is water  
 6 from the 886 Number 1 Well operated by Atlantic Richfield.  
 7 These exhibits show that the water contains about 5500  
 8 parts of chlorides.

9 Q Now, refer to Exhibit Number 7 and explain this.

10 A Exhibits Number 7 and 8 are cross sections, the locations  
 11 of which are shown on the plat being Exhibit Number 1.  
 12 These cross sections show the continuity of the disposal  
 13 zone and the prominent zone in the disposal interval is  
 14 marked to show the structural configurations.

15 Q That's true of the other cross section, too?

16 A Yes, sir. Both cross sections show essentially the same  
 17 thing.

18 Q All in the same reservoir?

19 A Yes, sir.

20 Q Have you obtained a waiver from any of the offset operators  
 21 for these injection wells?

22 A Yes, sir. Exhibit Number 9 is a copy of a letter that we  
 23 sent to Mr. Hansen being the operator of a well offsetting  
 24 present disposal well and would have been offsetting the  
 25 proposed disposal well, if granted, and Mr. Hansen has

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1 indicated that he has no objection to our proposal.

2 Q In your opinion, will the approval of this application be  
 3 in the interest of conservation, the prevention of waste  
 4 and tend to protect correlative rights?

5 A Yes, sir. This application, if approved, would allow  
 6 continued operation of Atlantic Richfield's Wells in the  
 7 pools so that disposal will not be dependent on the one  
 8 existing well. It would, we believe, allow producing  
 9 the producing wells at full capacity.

10 I should state here that we are not absolutely certain  
 11 that we will have to use the well Number 2. We are making  
 12 all efforts not to use this well. Well Number 2 is the  
 13 last well on the 6015 lease. We made an application to  
 14 the Bureau of Land Management for special land use permit  
 15 and, of course, this cannot be granted without conser-  
 16 vation Commission approval.

17 We are also negotiating with an operator in the  
 18 area who has desires to flood over to the east to take  
 19 all of the water from our producing wells. We don't  
 20 know that this will be accomplished. We have also had  
 21 discussions with a salt water disposal company in the  
 22 area to take water to the west.

23 We much prefer to go one of these routes rather than  
 24 converting another well. However, we do feel that until  
 25 this is settled, we need to retain the rights to use Well

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1 Number 2 as a possible salt water disposal well in the  
 2 event that we are unable to accomplish any of the alter-  
 3 natives.

4 If we do accomplish the alternatives and do not  
 5 dispose of water to any great extent in Well Number 1 or  
 6 2, then we will hold these wells as standby wells in case  
 7 some emergency exists or in case we are unable to continue  
 8 with these plans. If we cannot get rid of our water some-  
 9 where else, then Well Number 2 will be needed in order to  
 10 handle the water from our producers.

11 Q If you cannot work out this alternative for the disposal  
 12 of the water and you do have to use both of these injection  
 13 wells, what, in your opinion, will be the affect of the  
 14 injection of water on the other offset producing wells?

15 A Well, we are injecting into intervals which are within  
 16 the productive intervals of the West Teas Pool and un-  
 17 doubtedly there will be some affect. The well Number 2  
 18 and Well Number 1, we believe, will probably not have a  
 19 detrimental affect. All of the wells just to the south  
 20 and on the north edge of the West Teas Pool are very low  
 21 producers, rates being in the order of two to six barrels  
 22 of oil per day and we feel that, if anything, disposal of  
 23 water into this interval may help to recover oil at a rate  
 24 that would not otherwise be economical.

25 Q In other words, it may enable them to produce oil which

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1 would otherwise not be recovered?

2 A Well, the West Teas Pool is a very difficult pool to  
 3 interpret. There's a fairly active water drive throughout  
 4 the field and on the south end but this is our best  
 5 opinion, yes, sir, that, if anything, it may help the  
 6 producing wells.

7 MR. HINKLE: We would like to offer in evidence  
 8 Exhibits 1 through 9.

9 MR. UTZ: Without objection, Exhibits 1 through 9  
 10 will be entered into the record of this case.

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

12 CROSS EXAMINATION

13 BY MR. UTZ:

14 Q Mr. Pringle, your seven-inch casing had the cement  
 15 circulated, is that correct?

16 A Yes, sir. These wells are in a potash area and the seven-  
 17 inch casing did have 600 sacks of cement used and it was  
 18 circulated.

19 Q Now, how about the liner?

20 A The liner was set with 90 sacks and the records do not  
 21 indicate the extent of additional or extra cement that  
 22 was recovered, but it was tested in the normal manner.  
 23 There are notes to indicate was tested and has held  
 24 properly.

25 Q You will have the packer set at approximately 2950 in the

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1 liner?

2 A Yes, sir.

3 Q How about the annulus?

4 A We would load it with an inhibited fluid and place a  
5 pressure gauge on the annulus to determine if any event  
6 should occur that would indicate a leak.

7 Q Is the tubing plastic coated or regular?

8 A We didn't propose to plastic coat the tubing. We think  
9 that this field will have a fairly short life, we think  
10 something in the order of three to four years, and the  
11 water is about as good a water as is in this area and we  
12 believe that we can, with the pressure gauge and whatever,  
13 see if we are having any trouble and because of this short  
14 life we would prefer not to treat this tubing.

15 Q Now, it's my understanding that you are not actually going  
16 to convert this well at this time.

17 A Until we have exhausted all of the other alternatives, no,  
18 sir. However, to be real honest, if we cannot find any  
19 other way to get rid of the water, then we would want to  
20 convert it and it would take probably 750 barrels a day  
21 and our current pressure is about 1900 pounds.

22 Q You will use pressure, you think?

23 A Yes, sir; it will take pressure.

24 Q How much pressure?

25 A About 1900 pounds is what is running on the Number 1 Well

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1 at the present time.

2 MR. UTZ: Are there other questions? The witness may  
3 be excused.

4 (Witness excused.)

5 MR. UTZ: Statements? The case will be taken under  
6 advisement.

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I N D E X

WITNESS

PAGE

E. M. PRINGLE

Direct Examination by Mr. Hinkle

4

Cross Examination by Mr. Utz

11

E X H I B I T S

Nos. 1 through 9

2

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1 STATE OF NEW MEXICO )  
 2 ) ss  
 3 COUNTY OF BERNALILLO )

4 I, GLENDA BURKS, Court Reporter in and for the County of  
 5 Bernalillo, State of New Mexico, do hereby certify that the  
 6 foregoing and attached Transcript of Hearing before the New  
 7 Mexico Oil Conservation Commission was reported by me; and that  
 8 the same is a true and correct record of the said proceedings  
 9 to the best of my knowledge, skill and ability.

10 Glenda Burks  
 11 Court Reporter

22 I do hereby certify that the foregoing is  
 23 a true and correct record of the proceedings in  
 24 the hearing of Case No. 4508  
 25 on 2/2/71  
 26 [Signature] Examiner  
 New Mexico Oil Conservation Commission





# OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO  
P. O. BOX 2088 - SANTA FE  
87501

GOVERNOR  
BRUCE KING  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

March 4, 1971

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

Re: Case No. 4505, 4506, 4507

Order No. R-4112, R-4113, R-4114

Applicant:

ATLANTIC RICHFIELD COMPANY

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director *lp*

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC           

Aztec OCC           

Other State Engineer Office - Santa Fe  
(R-4112 -Bureau of Land Management - Santa Fe)

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. 4505  
Order No. R-4112

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 February 24, 1971, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 4th day of March, 1971, 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 Federal Well No. 2, located in Unit N of Section 9, Township 20 South, Range 33 East, NMPM, West Teas Yates-Seven Rivers Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Yates-Seven Rivers formation, with injection into the perforated interval from approximately 2980 feet to 3350 feet.

(4) That the injection should be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2950 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be

-2-

CASE No. 4505

Order No. R-4112

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

(5) 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 Federal Well No. 2, located in Unit N of Section 9, Township 20 South, Range 33 East, NMPM, West Teas Yates-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Yates-Seven Rivers formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2950 feet, with injection into the perforated interval from approximately 2980 feet to 3350 feet;

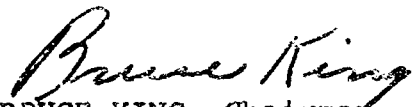
PROVIDED HOWEVER, that the casing-tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

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


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

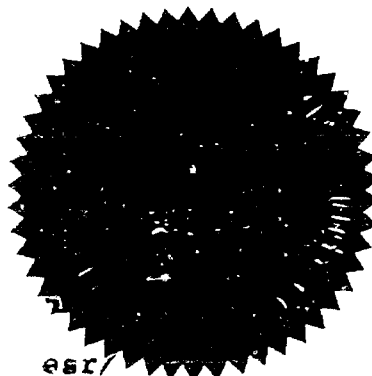
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
BRUCE KING, Chairman

ALEX J. ARMISTO, Member

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



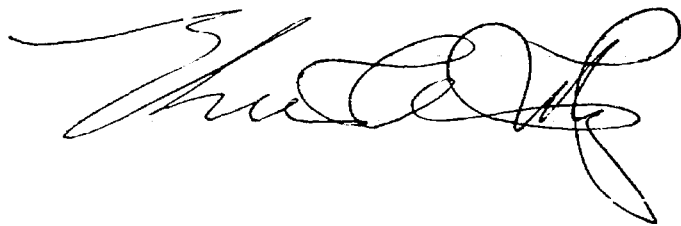
Case 4505

Heard 2-24-71

Rec. 2-26-71

Grant Atlantic permission  
to convert their Old Sea  
6015 #2, N-9-20-30-West  
Fears-Yates S.R. to a SWD  
well.

Drill down shall be thru  
combined  $2\frac{3}{8}$ " tubing, under a  
packer to be set at approx. 2950  
+ into the Yates S.R. thru  
perfs. from 2880-3196.  
Cement to be filled w/  
inert fluid. All gauge at  
surface.



3. A 480-acre non-standard gas proration unit comprising the W/2 and the NE/4 of Section 13, Township 23 South, Range 36 East, to be dedicated to Texas Pacific State "A" Account 1 Wells Nos. 20, 21, and 22.
4. A standard 640-acre gas proration unit comprising all of Section 11, Township 22 South, Range 36 East, to be dedicated to Texas Pacific State "A" Account 2 Wells Nos. 14, 36, and 42.
5. A 480-acre non-standard gas proration unit comprising the E/2 of Section 8, and the SW/4 of Section 9, Township 22 South, Range 36 East, to be dedicated to Texas Pacific State "A" Account 2 Wells Nos. 38, 43 and 56.

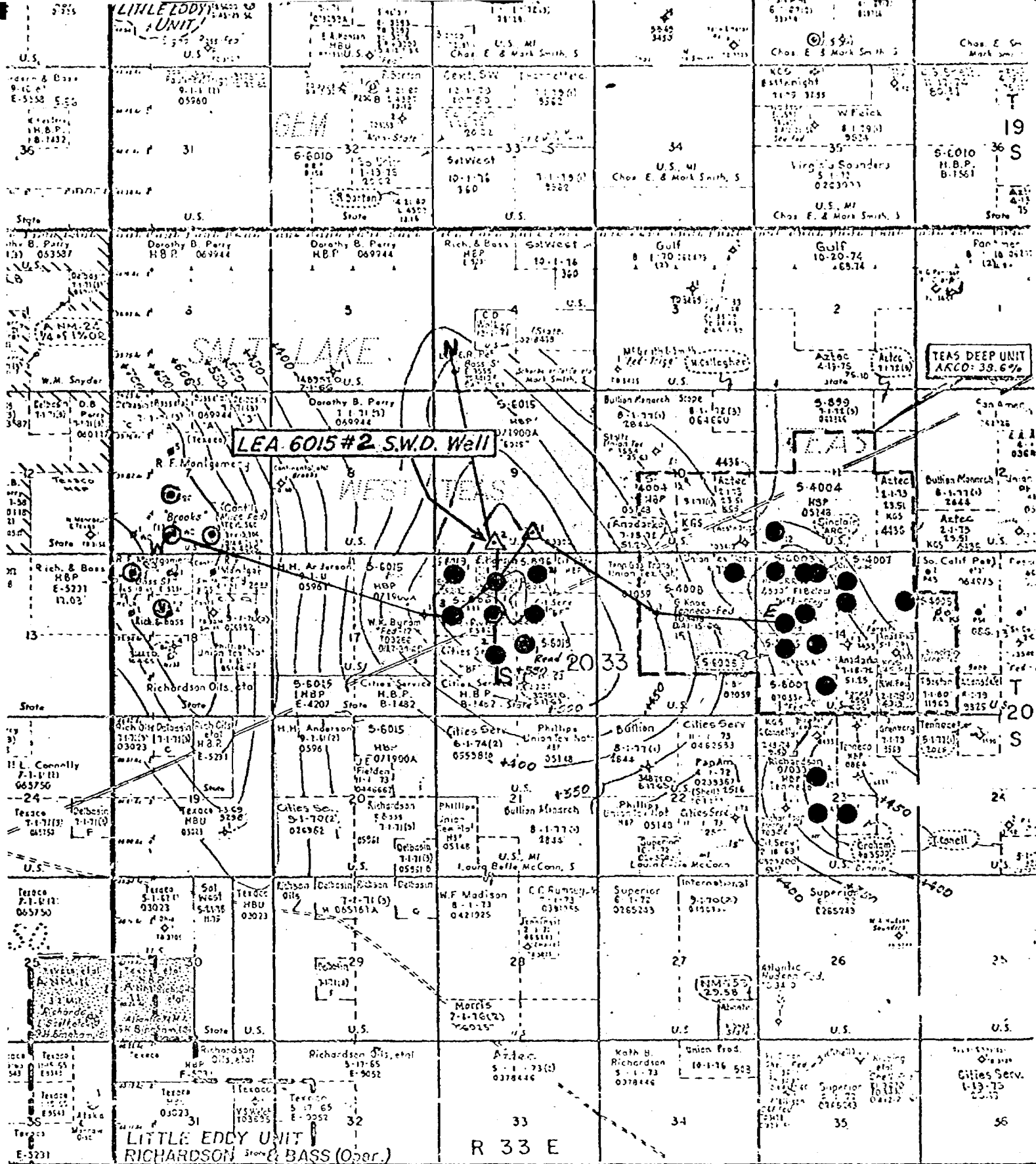
CASE 4504: Application of Humble Oil & Refining Company for the reinstatement of cancelled underproduction, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the general rules and regulations for prorated gas pools of Southeastern New Mexico promulgated by Order No. R-1670, as amended, to permit the reinstatement of underproduction accumulated by its Greenwood Well No. 11 located in Unit I of Section 9 and its Penrose Well No. 1 located in Unit B of Section 13, Township 22 South, Range 37 East, Blinbry Gas Pool, Lea County, New Mexico, and canceled January 1, 1971.

CASE 4505: 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 salt water into the Yates-Seven Rivers formation in the perforated interval from 2978 feet to 3350 feet in its Federal Well No. 2 located in Unit N of Section 9, Township 20 South, Range 33 East, West Teas Yates-Seven Rivers Pool, Lea County, New Mexico.

CASE 4506: 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 salt water into the Pennsylvanian formation in the perforated interval from 10,278 feet to 10,442 feet in its Eldson "C" WN Well No. 3 located in Unit F of Section 26, Township 16 South, Range 35 East, Shoe Bar-Pennsylvanian Pool, Lea County, New Mexico.

CASE 4507: 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 salt water into the Devonian formation in the perforated interval from 13,690 feet to 13,726 feet in its Lea State 396 Well No. 3 located in Unit G of Section 35, Township 15 South, Range 36 East, Dean-Devonian Pool, Lea County, New Mexico.

CASE 4502: Application of Samadan Oil Corporation for special pool rules and pool extension, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the East Morton-Wolfcamp-Pool, Lea County, New Mexico, including a provision for 80-acre spacing and proration units. Applicant further seeks extension of the horizontal boundaries of said pool to include the following:



**LEGEND**

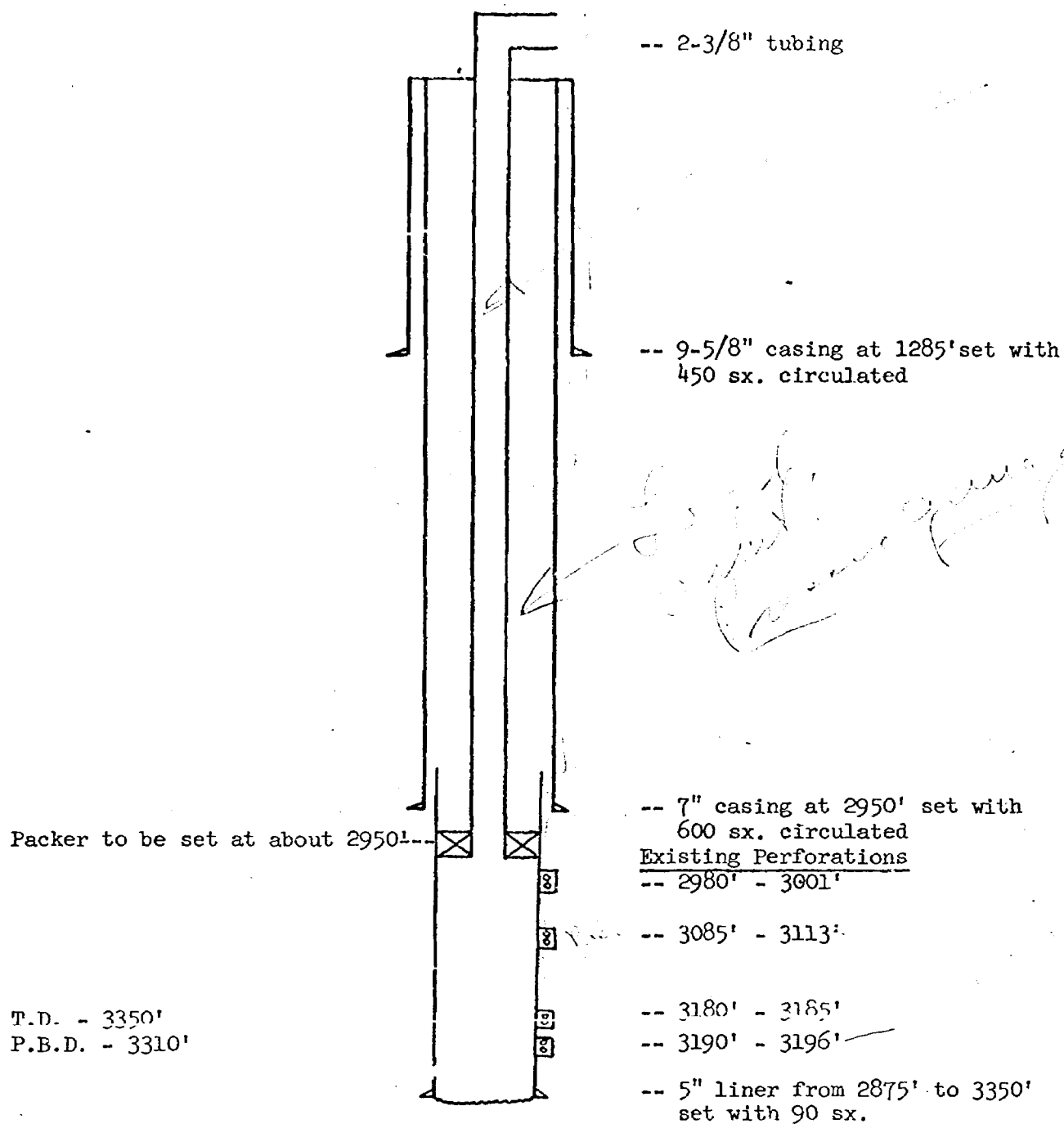
- SALT LAKE YATES
- TEAS BONE SPRINGS
- TEAS YATES SEVEN RIVERS
- TEAS YATES SEVEN RIVERS WEST
- CROSS SECTION LOCATION

**ATLANTIC RICHFIELD COMPANY**

Plot of  
West Teas Field  
Lea County, New Mexico

CONTOURS ON TOP OF YATES FORM.

ATLANTIC RICHFIELD COMPANY  
Schematic Sketch of Proposed Salt Water Disposal Well  
Lea 6015 No. 2, Unit N, Sec. 9, T-20-S, R-33-E  
West Teas Field, Lea County, New Mexico

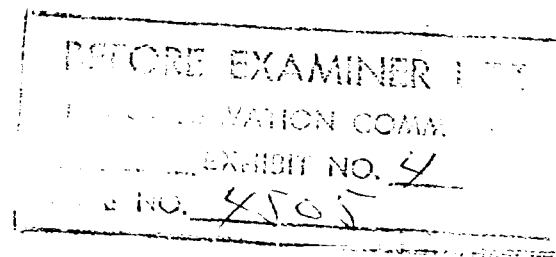


BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 2  
CASE NO. 4505

EXHIBIT NO. 2

ATLANTIC RICHFIELD COMPANY  
WEST TEAS FIELD PRODUCTION DATA  
DECEMBER 1970

<u>OPERATOR</u>	<u>LEASE AND WELL</u>	<u>LOCATION</u>	<u>MONTHLY OIL</u>	<u>MONTHLY WATER</u>
Atlantic Richfield Co.	Lea 6015 Fed. No. 2	N-9-20-33	0	54
	Lea 886 St. No. 1	F-16-20-33	145	10,315
	Lea 886 St. No. 2	B-16-20-33	83	1,452
	Lea 886 St. No. 3	E-16-20-33	1,182	11,631
	Company Total		1,410	23,452
Cities Service Oil Co.	State BF No. 1	G-16-20-33	1,552	4,901
	State BF No. 2	K-16-20-33	310	41
	Company Total		1,862	4,942
Hanson Oil Corp.	Atlantic State No. 1	C-16-20-33	203	0
Charles B. Read	Snyder No. 1	J-16-20-33	681	5,735
Pool Total			4,156	34,129





## HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY

MIDLAND DIVISION

## LABORATORY WATER ANALYSIS

No. W1-273-70

To Atlantic Richfield CompanyDate 8/3/70Box 1710Hobbs, New Mexico 88240

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Mr. Jerry GuyDate Rec. 8/3/70Well No. Disposal 6015 No. 1 Depth \_\_\_\_\_

Formation \_\_\_\_\_

County LeaField West Teas S.W.D.S.Source Well Head

Resistivity \_\_\_\_\_

.574 @ 84 F

Specific Gravity \_\_\_\_\_

1.006

pH \_\_\_\_\_

6.6

Calcium (Ca) \_\_\_\_\_

900

\*MPL

Magnesium (Mg) \_\_\_\_\_

300

Chlorides (Cl) \_\_\_\_\_

5,500 ✓Sulfates (SO<sub>4</sub>) \_\_\_\_\_2,700Bicarbonates (HCO<sub>3</sub>) \_\_\_\_\_337

Soluble Iron (Fe) \_\_\_\_\_

Nil

Remarks:

BEFORE EXAMINER UTZ

SERVATION CC \_\_\_\_\_

EXHIBIT NO. 5CASE NO. 1505

\*Milligrams per liter

Respectfully submitted,

Analyst: Robert Lansford

cc:

HALLIBURTON COMPANY

By Robert Lansford

DIVISION CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

EXHIBIT NO. 5

**HALLIBURTON DIVISION LABORATORY**  
**HALLIBURTON COMPANY**  
**MIDLAND DIVISION**

EXHIBIT NO. 6LABORATORY WATER ANALYSIS No. W1-272-70To Atlantic Richfield CompanyDate 8/3/70Box 1710Hobbs, New Mexico 88240

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Mr. Jerry GuyDate Rec. 8/3/70Well No. State Lea 886 # 1 Depth \_\_\_\_\_Formation YatesCounty Lea

Field \_\_\_\_\_

West TeasSource Well HeadResistivity ..... .612 @ 84 FSpecific Gravity ..... 1.006pH ..... 6.5Calcium (Ca) ..... 800

\*MPL

Magnesium (Mg) ..... 360Chlorides (Cl) ..... 5,500Sulfates (SO<sub>4</sub>) ..... 2,200Bicarbonates (HCO<sub>3</sub>) ..... 337Soluble Iron (Fe) ..... N11

Remarks:

RECEIVED EXAMINED UTZ

LABORATORY DIVISION

EXHIBIT NO. 6NO. 4505

\*Milligrams per liter

Respectfully submitted,

Analyst: Robert Lansford

cc:

HALLIBURTON COMPANY

By Robert Lansford

DIVISION CHEMIST

**NOTICE**

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

January 20, 1971

Hanson Oil Corporation  
P. O. Box 1515  
Roswell, New Mexico 88201

Attention: Mr. Ernest A. Hanson

Gentlemen:

Atlantic Richfield Company has made application to the New Mexico Oil Conservation Commission to convert the Lea 6015 ARC Federal No. 2 well, located in Unit N, Section 9, T20S-R33E, to salt water disposal use.

Attached is a plat of the area, a diagrammatic sketch of the well, and a Commission Form C-108, which gives details of this request. As shown, we plan to dispose of produced water from the West Teas Pool into this well in the interval of approximately 2,978 feet to 3,350 feet, which is the Yates and Seven Rivers formation. We plan to use this well in conjunction with the Lea 6015 ARC Well No. 1, which is presently being used for salt water disposal.

As an offset operator, we ask your waiver of objection to this proposal. If you have no objection, please sign one copy of this letter and return it to P. O. Box 1978, Roswell, New Mexico 88201.

Very truly yours,

original  
signed: E. M. PRINGLE  
E. M. Pringle

EMP:rhs  
Attachs.

We have no objection to the above proposal.

HANSON OIL CORPORATION

BY: [Signature]

Date January 22, 1971

BEFORE EXAMINER UTZ	
OIL CO.	SECTION
CASE NO. <u>4505</u>	

CLARENCE E. HINKLE  
W. E. BONDURANT, JR.  
LEWIS C. COX, JR.  
PAUL W. EATON, JR.  
CONRAD E. COFFIELD  
HAROLD L. HENSLEY, JR.  
STUART O. SHANOR  
  
C. D. MARTIN  
PAUL J. KELLY, JR.

LAW OFFICES  
HINKLE, BONDURANT, COX & EATON  
600 HINKLE BUILDING  
POST OFFICE BOX 10  
ROSWELL, NEW MEXICO 88201

TELEPHONE (505) 622-6510

MIDLAND, TEXAS OFFICE  
521 MIDLAND TOWER  
(915) MU 3-4691

January 20, 1971

*Case 4505*

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico 87501

Gentlemen:

We enclose herewith, in triplicate, application of Atlantic Richfield Company for conversion of one of its wells in the West Teas Pool to a salt water disposal well.

We would appreciate your placing this matter on the docket for the next examiner's hearing.

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By *Clarence E. Hinkle*  
*CEH*

CEH:cs  
Enc.  
cc: Marvin Pringle  
cc: Phil Tomlinson

RECEIVED 1/21/71

Date *2-11-71*

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF ATLANTIC RICHFIELD  
COMPANY FOR CONVERSION OF ITS  
FEDERAL NO. 2 WELL LOCATED IN UNIT  
N, 1980 FEET FROM THE WEST LINE AND  
330 FEET FROM THE SOUTH LINE OF  
SECTION 9, TOWNSHIP 20 SOUTH, RANGE  
33 EAST, LEA COUNTY TO A SALT WATER  
DISPOSAL WELL FOR DISPOSAL THROUGH  
PERFORATIONS FROM 2978 FEET TO 3350  
FEET IN THE YATES-SEVEN RIVERS FOR-  
MATION.

Case 4505

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico 87501

Comes Atlantic Richfield Company, acting by and through the undersigned attorneys, and hereby makes application for conversion of its Federal No. 2 well located in Unit N, 1980 feet from the west line and 330 feet from the south line of Section 9, Township 20 South, Range 33 East, Lea County to a salt water disposal well for disposal through perforations from 2978 feet to 3350 feet in the Yates-Seven Rivers formation, and in support thereof respectfully shows:

1. That applicant is the owner of the following wells producing from the West Teas Pool, all being located in Section 16, Township 20 South, Range 33 East:

State No. 1 located in Unit F;  
State No. 2 located in Unit B;  
State No. 3 located in Unit E.

Applicant is also the owner of Federal No. 1 well located in Unit O, Section 9, Township 20 South, Range 33 East which was converted to a salt water disposal well under Order R-3588 of the Commission dated November 26, 1968 and under Order R-3588-A entered on October 27, 1970 Order R-3588 was amended to permit disposal of produced salt water into the Yates-Seven Rivers formation through perforations from approximately 305<sup>4</sup> feet to 321<sup>4</sup> feet.

2. Applicant is also the owner of Federal No. 2 well located in Unit N of Section 9, Township 20 South, Range 33 East which well was completed in the Yates-Seven Rivers formation and is now depleted. Applicant is desirous of converting said well to supplement the disposal of produced salt water from the wells hereinabove referred to which are still operated by applicant in the West Teas Pool. There is filed herewith a log of said well and also a diagrammatic sketch attached hereto as Exhibit "A" showing all casing strings including diameters and setting depths, quantities used and tops of cement, perforated intervals, tubing strings including diameters and setting depths and location of packer.

3. There is attached hereto as Exhibit "B" a plat showing the location of the proposed injection well and the location of all other wells within a radius of 2 miles from the proposed injection well, together with the structural condition of the West Teas Pool contoured on top of the Yates formation. The plat also indicates the lease owners within a radius of 2 miles of the proposed injection well.

4. Applicant requests that this matter be included on the next examiner's docket.

Respectfully submitted,

ATLANTIC RICHFIELD COMPANY

By Clarence E. Hinkle  
Member of the Firm of  
HINKLE, BONDURANT, COX & EATON  
Attorneys for Applicant  
Box 10  
Roswell, New Mexico 88201

ATLANTIC RICHFIELD COMPANY  
 Schematic Sketch of Proposed Salt Water Disposal Well  
 Lea 6015 No. 2, Unit N, Sec. 9, T-20-S, R-33-E  
 West Teas Field, Lea County, New Mexico

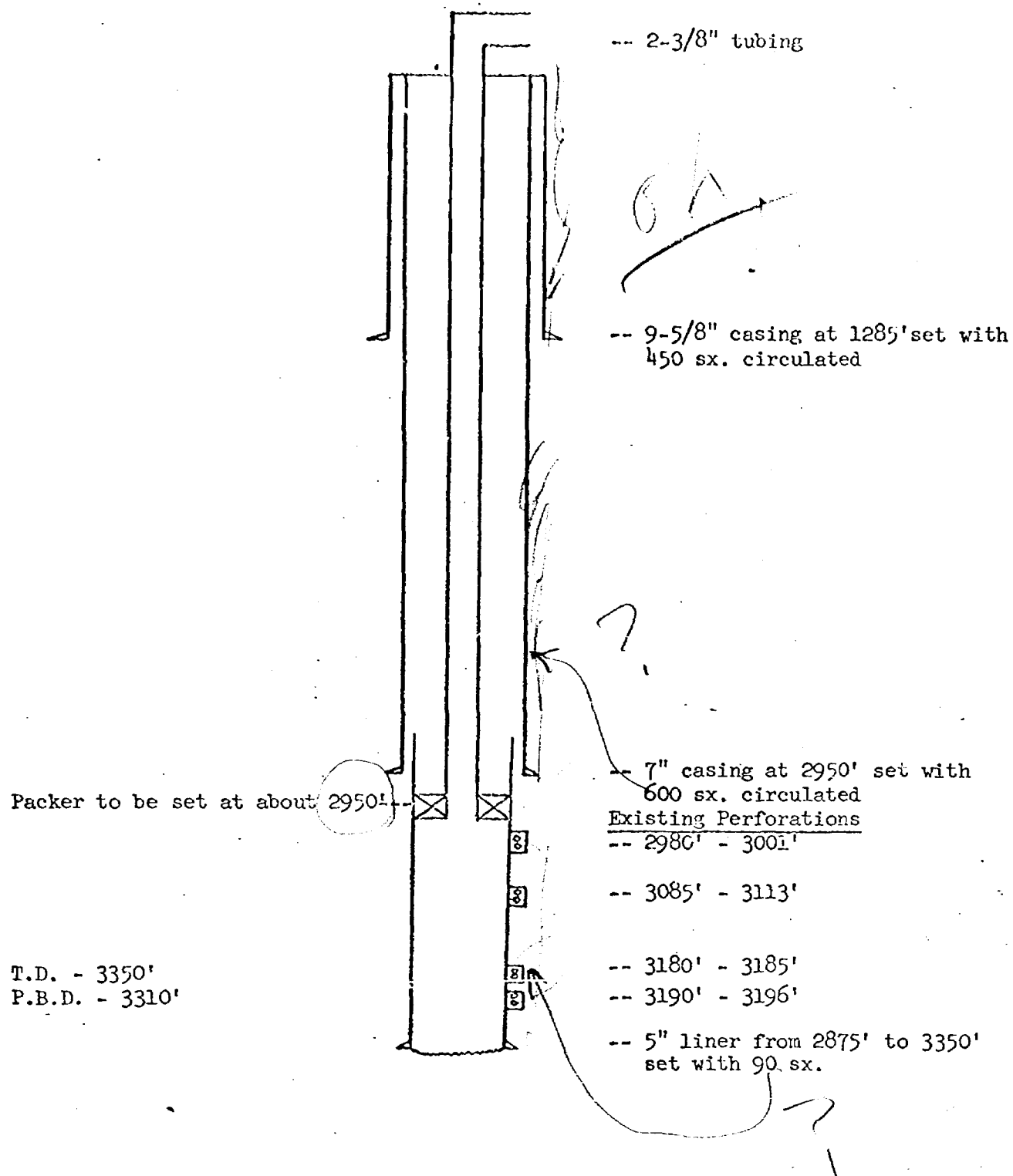
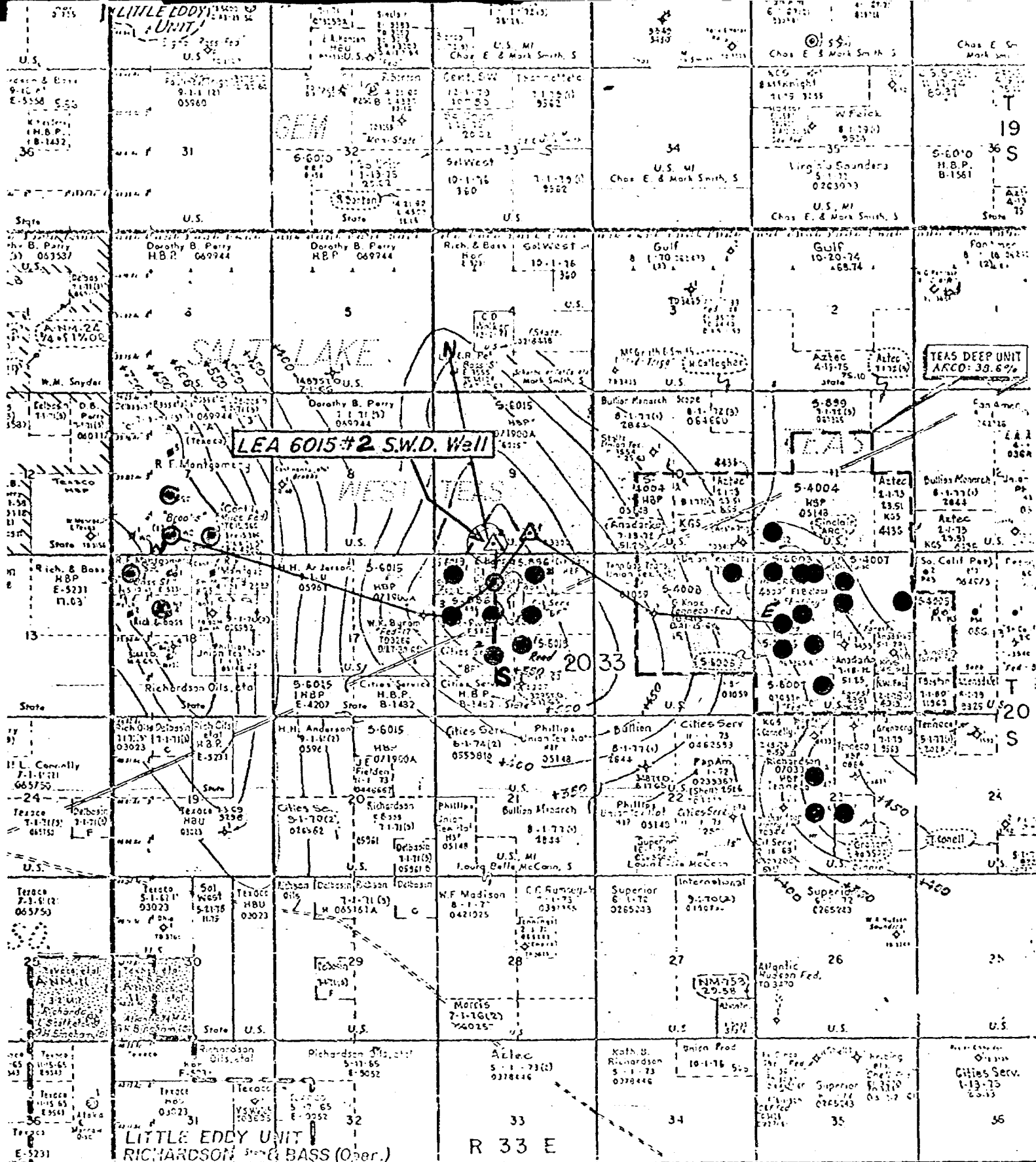


EXHIBIT NO. A  
 Case 45-05





approximately 2950 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus ~~or the annulus left open~~ at the surface in order to determine leakage in the casing, tubing, or packer.

(5) 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 Federal Well No. 2, located in Unit N of Section 9, Township 20 South, Range 33 East, NMPM, West Teas Yates-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Yates-Seven Rivers formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 2950 feet, with injection into the perforated interval from approximately 2978<sup>2980</sup> feet to 3350 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 left open~~ at the surface in order to determine leakage in the casing, tubing, or packer.

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

(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.

DRAFT

GMH/esr

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. 4505

Order No. R-4112

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 February 24, 1971,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 24th day of February, 1971, 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 Federal Well No. 2,  
located in Unit N of Section 9, Township 20 South, Range  
33 East, NMPM, West Teas Yates-Seven Rivers Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Yates-Seven Rivers  
formation, with injection into the perforated interval  
from approximately 2978 feet to 3350 feet.

(4) That the injection should be accomplished through  
2 3/8-inch plastic lined tubing installed in a packer set at