

CASE 3777: Application of ATLANTIC
RICHFIELD CO. for salt water dis-
posal, Roosevelt County, N. Mex.

Case Number

3777

Application
Transcripts.

Small Exhibits

ETC.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico

Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

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

June 18, 1968

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

Re: Case No. 3777
Order No. R-3430
Applicant:
Atlantic Richfield Co.

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.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other State Engineer Office

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. 3777
Order No. R-3430

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 5, 1968,
at Santa Fe, New Mexico, before Examiner Daniel S. Mutter.

NOW, on this 18th day of June, 1968, 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 "AE" Well No. 2, located in Unit
L of Section 36, Township 8 South, Range 36 East, MNPM, Allison-
Pennsylvanian Pool, Roosevelt County, New Mexico.
- (3) That the applicant proposes to utilize said well to
dispose of produced salt water into the Bough "C" zone of the
Pennsylvanian formation, with injection into the perforated
interval from approximately 9662 feet to 9672 feet.
- (4) That there has been a natural encroachment of water into
this portion of the west flank of the reservoir, accompanied by the
watering-out of wells upon depletion; that the disposal of produced
salt water into the Bough "C" zone of the subject well will not
result in reservoir damage.
- (5) That the injection should be accomplished through
2 3/8-inch internally plastic-coated tubing installed in a

-2-

CASE No. 3777

Order No. 2-5430

packer set at approximately 9571 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 tubing or packer.

(6) 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:

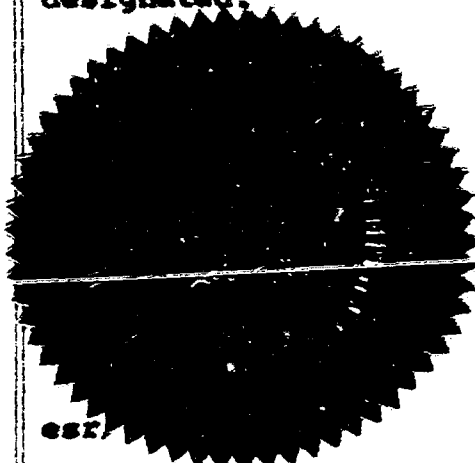
(1) That the applicant, Atlantic Richfield Company, is hereby authorized to utilize its State "AE" Well No. 2, located in Unit L of Section 36, Township 8 South, Range 36 East, NMPM, Allison-Pennsylvanian Pool, Roosevelt County, New Mexico, to dispose of produced salt water into the Bough "C" zone of the Pennsylvanian formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 9571 feet, with injection into the perforated interval from approximately 9662 feet to 9672 feet;

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; 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 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

DAVID F. CARGO, Chairman

GUYTON S. HAYS, Member

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

Page -2-

Docket No. 17-68

June 5, 1968 Examiner Hearing

- CASE 3781: Application of Sinclair Oil & Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water by injection into the Permo-Pennsylvanian formation in the interval 10,434 feet to 11,537 feet in the Cities Service State "AW" Well No. 4 located in Unit I of Section 35, Township 15 South, Range 36 East, Dean Field, Lea County, New Mexico.
- CASE 3782: Application of Pan American Petroleum Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Seven Rivers and Queen Formations underlying its Cortland Myers unit area through three wells located in units F, J, and P of Section 22, Township 24 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.
- CASE 3783: Application of Pan American Petroleum Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Cortland Myers Unit Area comprising 240 acres, more or less, of Federal lands in Section 22, Township 24 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.
- CASE 3784: Application of Pan American Petroleum Corporation for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of the North King Camp Unit Area comprising 14,697 acres, more or less, of State, Federal, and fee lands in Township 13 South, Ranges 29 and 30 East, Chaves County, New Mexico.
- CASE 3785: Application of Pan American Petroleum Corporation for an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Poitevent Gas "Com" Well No. 1 at an unorthodox gas well location 990 feet from the North line and 1650 feet from the East line of Section 11, Township 15 South, Range 27 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, in exception to the pool rules which require wells in said pool to be located in the NW/4 or SE/4 of the section.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 5, 1968

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:

- CASE 3777: Application of Atlantic Richfield Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Bough "C" zone of the Pennsylvanian formation in its State AE Well No. 2 located in Unit L of Section 36, Township 8 South, Range 36 East, Allison-Pennsylvanian Pool, Roosevelt County, New Mexico, in the perforated interval from 9662 feet to 9672 feet.
- CASE 3778: Application of Atlantic Richfield Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its State BH Well No. 1 located 660 feet from the North and West lines of Section 13, Township 19 South, Range 34 East, Quail-Queen Pool, Lea County, New Mexico, in such a manner as to permit production of oil from 5080 feet to 5136 feet in the lower Queen formation through tubing and the disposal of produced salt water into the upper Queen formation through the casing-tubing annulus in the perforated interval from 4820 feet to 4830 feet.
- CASE 3779: Application of Shenandoah Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Yates, Seven Rivers, Queen, and Grayburg formations through five wells located in units F and N of Section 29, and units A, G, and I of Section 30, all in Township 18 South, Range 31 East, Shugart Pool, Eddy County, New Mexico.
- CASE 3780: Application of Amerada Petroleum Corporation for an amendment to Order No. R-3407, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3407, which authorized the drilling of a water injection well in its Langlie-Mattix Woolworth unit waterflood project at an unorthodox location 75 feet from the North line and 2635 feet from the West line of Section 27, Township 24 South, Range 37 East, Lea County, New Mexico. Applicant now proposes to locate said well 75 feet from the North line and 2540 feet from the West line of said Section 27.

Page -3-

Docket No. 17-68

June 5, 1968 Examiner Hearing

CASE 3786: Application of Texaco Inc. for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the North Paduca-Delaware Pool, Lea County, New Mexico, including a provision for classification of oil and gas wells in said pool, a limiting gas-oil ratio of 3000 to one, and 40-acre spacing for oil wells and 160-acre spacing for gas wells. Locations would be no nearer than 330 feet to a quarter-quarter section line.

CASE 3776: (Continued from the May 22, 1968 Examiner Hearing)

Application of J. M. Huber Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Union-State Unit Area comprising 1360 acres, more or less, of State lands in Township 15 South, Range 32 East, Lea County, New Mexico.

ir/

COPY

HINKLE, BONDURANT & CHRISTY

May 9, 1968

file 3777
or
3778

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State Engineer
Capitol Building
Santa Fe, New Mexico

Gentlemen:

We enclose herewith copies of the following applications filed with the Oil Conservation Commission by Atlantic Richfield Company and which are to be set down at the first possible examiner's hearing:

1. Application for an order to permit the injection of produced water from State BG well No. 1 located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 14, Township 19 South, Range 34 East and also water produced from the Lower Queen formation of the Quail Queen Pool produced from State BH well No. 1 into the said State BH well No. 1 located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 13, Township 19 South, Range 34 East, said water to be injected into the Upper Queen zone of State BH well No. 1, both wells being located in the Quail Queen Pool, Lea County, New Mexico.

2. Application for an order to permit the injection of produced water from State AE No. 1 located in the center of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 36, Township 8 South, Range 36 East into State AE No. 2 located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 36, Township 8 South, Range 36 East which is to be abandoned as a producing well, said water to be injected into the Bough "C" formation of the Allison Pennsylvanian Pool located in Townships 8 and 9 South, Ranges 36 and 37 East.

You will also find enclosed copies of the plat, well log and diagrammatic sketch of the proposed injection wells referred to in the applications.

These copies are sent to you in accordance with the provisions of Rule 701 of the Oil Conservation Commission.

Yours very truly,

HINKLE, BONDURANT & CHRISTY

CEH:cs

cc: Oil Conservation Comm.
cc: Atlantic Richfield

By



BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF ATLANTIC RICHFIELD)
COMPANY FOR AN ORDER TO PERMIT THE)
INJECTION OF PRODUCED WATER FROM)
STATE AE NO. 1 LOCATED IN THE CENTER)
OF THE NW $\frac{1}{4}$ NW $\frac{1}{4}$ SECTION 36, TOWNSHIP)
8 SOUTH, RANGE 36 EAST, N.M.P.M.)
INTO STATE AE NO. 2 LOCATED IN THE)
NW $\frac{1}{4}$ SW $\frac{1}{4}$ SECTION 36, TOWNSHIP 8 SOUTH,)
RANGE 36 EAST, N.M.P.M. WHICH IS TO)
BE ABANDONED AS A PRODUCING WELL,)
SAID WATER TO BE INJECTED INTO THE)
BOUGH "C" FORMATION OF THE ALLISON)
PENNSYLVANIAN POOL LOCATED IN TOWN-)
SHIPS 8 AND 9 SOUTH, RANGES 36 AND)
37 EAST, N.M.P.M.)

Case 3777

MAIN OFFICE

'68 MAY 10 PM 3 06

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico

Comes Atlantic Richfield Company, acting by and through the undersigned attorneys, and hereby makes application to the New Mexico Oil Conservation Commission for an order approving the injection of produced water from State AE No. 1 located in the center of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 36, Township 8 South, Range 36 East, N.M.P.M. into State AE No. 2 located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 36, Township 8 South, Range 36 East, N.M.P.M. which said well is to be abandoned as a producing well and as grounds for such application respectfully shows:

1. That both of the above mentioned wells, namely State AE No. 1 and State AE No. 2, are located upon a State lease owned by applicant and both are producing from the Bough "C" formation of the Allison Pennsylvanian Pool. That the State AE No. 2 is making practically all water and is to be abandoned as a producing well.

2. There is filed herewith a plat showing the location of the proposed injection well and the location of all other wells

DOCKET MAILED

Date 5/23/68
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within a radius of 2 miles from said proposed injection well and the formation from which said wells are producing or have produced.

3. That there is also filed herewith a gamma ray neutron log of the proposed injection well.

4. There is also filed herewith a diagrammatic sketch of the proposed injection well, showing all casing strings, including diameters and setting depths, quantities used and tops of cement, and perforations, as well as tubing strings, including diameters and setting depths, and the type and location of packer to be used.

5. That waivers have been obtained from all offset lease owners to the injection of produced water from State AE No. 1 into State AE No. 2 above referred to.

6. As indicated by the schematic drawing, the produced water will be injected into the Bough "C" formation and it is estimated that there will be approximately 150 barrels of water produced from State AE No. 1 injected daily.

7. A copy of this application, together with a copy of the plat, log and diagrammatic sketch, are being furnished to the office of the State Engineer, Capitol Building, Santa Fe, in accordance with the provisions of Rule 701.

Applicant requests that this matter be set down for hearing at the earliest possible examiner's hearing.

Respectfully submitted,

ATLANTIC RICHFIELD COMPANY

By 

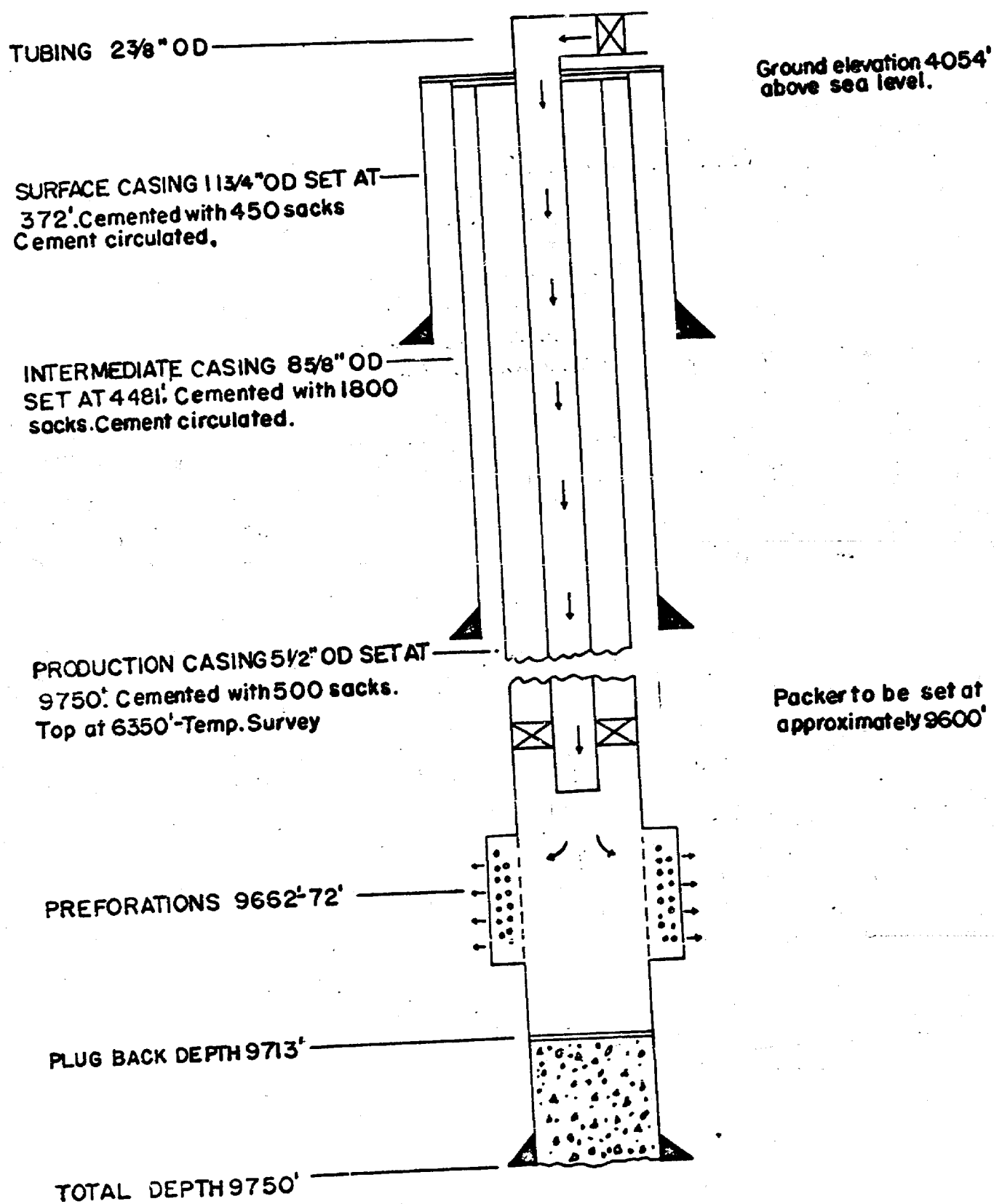
Member of the Firm of
HINKLE, BONDURANT & CHRISTY
Attorneys for Applicant
Box 10
Roswell, New Mexico

ATLANTIC RICHFIELD COMPANY

EXHIBIT NO. 1

SCHEMATIC DRAWING
STATE "AE" WELL NO. 2
ALLISON PENN. FIELD
ROOSEVELT COUNTY, N.M.

Chal 3777



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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 5, 1968

EXAMINER HEARING

IN THE MATTER OF:)

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

Case No. 3777

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

Case 3777

Page 1

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner HearingSanta Fe, NEW MEXICOHearing Date June 5, 1968TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
DAVID G WIGHT	PAN AM PET CORP	FT WORTH
Gordon D. Rupp	Pan Am Pet. Corp	Ft. Worth
J. W. AUSTIN	PAN AMER PETE. CORP.	FT WORTH, TEXAS
James E. Hulse	Atlantic - Richfield	Roswell
H. P. Tomlinson	Atlantic Richfield	Roswell
Gregory L. Tweed	Atlantic Richfield	Roswell
Nma' Paulbami	RW Byram	Santa Fe
Wayland Roberts	Pan Am. Pet Corp	Fort Worth
Pete Ols	" " "	" " "
R. M. Anderson	Sinclair O. & G. Co.	Midland
Jason Kellah	Kellah & Fox	Santa Fe
Charles E. Malone	Attwood & Malone	Roswell
James T. Jennings	Jennings & Copple	Roswell
John H. Swendiq	Amerada Pet. Corp	Abboz.
Borley Kelly	White Lateral Field & Co.	SF
WHIGHAM, CARL L. Jr.	TEXACO	MIDLAND

MR. NUTTER: The hearing will come to order, please.
The first case this morning will be Case 3777.

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

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant
and Christy, Roswell, appearing on behalf of Atlantic Richfield.
We have one witness and three exhibits which have already
been identified. Here are the exhibits.

(Witness sworn.)

(Whereupon, Exhibits 1, 2
& 3 were marked for
identification.)

JERRY TWEED

called as a witness, having been first duly sworn, was
examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name.

A Jerry Tweed.

Q By whom are you employed?

A Atlantic Richfield Company.

Q In what capacity are you employed?

A Petroleum engineer.

Q Have you previously testified before the Oil

Conservation Commission?

A No, I haven't.

Q You are a graduate petroleum engineer?

A Yes, graduated from the University of Oklahoma, 1958.

Q Since your graduation, have you been employed as a petroleum engineer?

A Yes, since that time.

Q By what companies?

A I was employed by Texaco for eight and a half years and then two years ago was employed by Atlantic Richfield in Roswell, and have since that time worked in the New Mexico District.

Q You are familiar with the Atlantic Richfield operations in New Mexico?

A Yes.

Q You are familiar with their operation in the Allison-Penn Pool?

A Yes, I am.

Q You have made a study of the well logs and all the information in that pool?

A Yes, sir.

Q Are you familiar with the application of Atlantic Richfield in this case?

A Yes.

Q What is Atlantic Richfield seeking to accomplish?

A We are making application to dispose of produced water from our State AE No. 1, located in the Northwest Quarter, Northwest Quarter of Section 36, Township 8 South, 36 East, and dispose of this water into the State AE No. 2, located in the Northwest Quarter of the Southwest Quarter of Section 36, Township 8 South, Range 36 East.

Q Have you prepared certain exhibits, or have they been prepared under your direction for introduction in this case?

A Yes, I have.

Q Refer to Atlantic Richfield's Number 1 and explain what this is and what it shows.

A It is a plat map of a portion of the Allison-Penn Pool in the area of our State AE No. 2. Shown on this map is the well locations, total depth and producing horizons of the individual wells, the land owners, and shown in red is the cross section location map which will be presented as Exhibit 2.

Also shown is the daily average oil production and water production for those wells in the area that still produce.

This map, as might be seen from this map, considerable

of the wells in the area have been shut-in and only scattered wells remain productive.

Q Are the two wells you refer to of Atlantic Richfield, where are they located with reference to the main Allison-Penn Pool?

A They're along the west edge of the reservoir. This reservoir has had a water encroachment from the west and this particular area has produced due to water encroachment primarily. However, farther to the east the pool is produced from solution gas drive reservoir. The No. 2 well is in a watered out area of the pool where the aquifer has encroached past this particular well. The well presently produces four oil and 396 barrels of water per day.

Q Do you intend to abandon that well as an oil producer?

A Yes. We plan to abandon it as an oil producer and put the produced water from the State AE No. 1 back into the Bough "C" reservoir of this well.

Q Why do you plan to abandon it?

A It is no longer economic. It's producing at one percent oil cut, which is uneconomic.

Q Refer to your Exhibit Number 2 and explain to the Examiner what this shows.

A Exhibit Number 2 is a cross section consisting of the State AE No. 1 well, the State AE No. 2 well, the State AE No. 3 well. Shown on the exhibit is the top of the Bough "C" producing horizon. As can be seen from this exhibit, the Bough "C" is quite continuous, has an approximate thickness of, total thickness of 30 feet and a net pay feet thickness of approximately 9 feet in this area.

Q What is the top line shown on the cross section?

A It is minus subsea. The subsea elevation of minus 5500, which is a correlation marker.

Q Does the Exhibit Number 2 show the perforations in the well which you are producing water from and the well which you intend to inject water?

A Yes, sir, it does. They're shown as a cross-hatched box in the Bough "C" formation.

Q And the water would be injected into the Bough "C" formation?

A Yes, sir. We plan only to reinject the produced water from the State AE No. 1 back into the Bough "C" formation of the State AE No. 2.

Q You do not contemplate taking water from the other wells other than your own?

A No, sir, we do not.

Q Just the one well?

A Yes.

Q These two wells are all that the Atlantic Richfield has in this area at the present time?

A They are the only active wells that we have.

Q How much water do you anticipate would be injected into the injection well?

A The No. 1 well is currently making 144 barrels of water per day.

Q And that would be less water than the injection well is now producing as an oil well?

A Yes, that's right. Essentially we would be disposing of water behind the encroached aquifer in this area.

Q So, in your opinion, it would not affect any of the other wells in the area?

A No, it would not.

Q Refer to Atlantic Richfield Exhibit 3 and explain what this shows.

A Exhibit Number 3 is a schematic diagram of our proposed hookup of the State AE No. 2 for salt water disposal. We plan to dispose of water down the tubing with a packer set at 9571 feet and into existing Bough "C" perforations at

8662 to 9672.

Q Do you intend to use the plastic-coated tubing?

A Yes. We intend to plastic-line the tubing in this well.

Q In your opinion, will the completion in this manner effectively confine the injected water to the Bough "C" formation?

A Yes, it would.

Q Have you furnished all of the offset operators with copies of the application in this case?

A Yes, we have. We have waivers from them.

Q From whom do you have waivers?

A We have waivers from Gulf Oil Corporation, Mobil Oil Corporation, Skelly Oil Company, Texas Pacific Oil Company, Mallard Petroleum, John M. Kelly, Yates Petroleum Corporation, Shell Oil Company and Great Western Drilling Company.

Q Are these all of the offset operators to the injection wells?

A Yes, they are.

Q Do you have those together, all the waivers?

R. HATCH: Identify this as Exhibit Number 4.

(Whereupon, Exhibit No. 4
was marked for
identification.)

Q (By Mr. Hinkle) Did you furnish a copy of the
application and the exhibits which were filed to the State
Engineer?

A Yes, I did.

Q Have you received any response from the State
Engineer?

A No, we haven't.

Q Any objection?

A No.

Q In your opinion will the use of this well for an
injection well be in the interest of conservation and
prevention of waste?

A Yes, it would.

MR. HINKLE: We would like to offer in evidence
Exhibits 1 through 4.

MR. NUTTER: Atlantic's Exhibits 1 through 4 will
be admitted in evidence.

(Whereupon, Exhibits 1
through 4 were offered and
admitted in evidence.)

MR. HINKLE: That's all we have on direct examination.

CROSS EXAMINATIONBY MR. NUTTER:

Q Mr. Tweed, now you mentioned that the No. 1 well was making 144 barrels of water per day. The No. 2 well is the one that is going to be converted to disposal?

A Yes.

Q How much oil is it making at the present time?

A The No. 1?

Q The No. 2.

A The No. 2 is making four barrels of oil per day only with 396 barrels of water per day.

Q The other well, the No. 3 on your cross section, what is the status?

A It is presently in the process of being abandoned. In March it made zero barrels of oil and 132 barrels of water.

Q It won't be producing?

A No, it won't.

Q You only have the one producing well?

A Yes, sir.

Q We might figure, I just sketched in this line of water encroachment. I suppose that line has to swing east of the No. 2 well, then, doesn't it?

A West of the No. 1 well.

Q No, I beg your pardon, it has to swing east of the No. 3?

A Yes, sir.

Q How about Mallard's or Chase's Mallard Petroleum well?

A It is currently making 15 barrels of oil and zero barrels of water per day.

Q Zero barrels of water?

A Yes.

Q So there's a finger of encroachment comes in there, then?

A Yes. I think they are farther away from the edge than our No. 2 well is. About the same distance from the edge of the reservoir as the No. 3.

Q I presume this well of Gulf's in the Southeast of the Southeast of Section 35 is watered out also?

A Yes, sir.

Q Now, this isn't a matter of structural position, apparently, as far as the perforations are concerned?

A No, sir, it isn't. It's just a matter of geography as to how close you are to the west edge of the reservoir.

Q How far east is it anticipated that this water will migrate? Is this a fairly flat structure going to the east?

A Yes, it is. The water to date hasn't migrated too far to the east and with so many wells shut-in, it isn't anticipated that the water will migrate too much farther to the east.

Q And the mechanism up into the northeast is a solution gas drive?

A Yes, sir, essentially.

Q Have these Sunray wells in the Northeast Quarter of Section 36 watered out?

A No. They were all abandoned due to low oil production.

Q The water didn't get into there, though?

A No, sir. And have been shut-in.

Q They're just depleted?

A Yes. In fact, we sent a waiver to Sunray and it turned out that they have turned the lease back, they no longer own the lease.

MR. HINKLE: That's open land, then?

THE WITNESS: It's open land.

Q (By Mr. Nutter) You got surface and intermediate casing, both of which has been cemented to the surface, right?

A Yes, sir.

Q Now, this annulus here, will it be loaded with some

kind of an inhibited fluid?

A Yes, sir, it will be.

Q And the annulus can be left open or equipped with a pressure gauge in order to facilitate packer or tubing leakage?

A Yes, sir.

MR. NUTTER: Are there any other questions of Mr. Tweed?

MR. HINKLE: That's all we have.

MR. NUTTER: He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Hinkle, in this case?

MR. HINKLE: That's all.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3777? We'll take the case under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
JERRY TWEED	
Direct Examination by Mr. Hinkle	2
Cross Examination by Mr. Nutter	10

<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Exhibits 1 - 3	2	9
Exhibit 4	9	9

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, 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 8th day of July, 1968.

Ada Dearnley
 NOTARY PUBLIC

My Commission Expires:

June 19, 1971.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3777 heard by me on 6/8, 1968.

[Signature], Examiner
 New Mexico Oil Conservation Commission

ATLANTIC RICHFIELD COMPANY

EXHIBIT NO. 3

SCHEMATIC DRAWING
STATE "AE" WELL NO. 2
ALLISON PENN. FIELD
ROOSEVELT COUNTY, N.M.

4
39 1/2

TUBING 2 3/8" OD

SURFACE CASING 11 3/4" OD SET AT
372'. Cemented with 450 sacks
Cement circulated.

INTERMEDIATE CASING 8 5/8" OD
SET AT 4481'. Cemented with 1800
sacks. Cement circulated.

PRODUCTION CASING 5 1/2" OD SET AT
9750'. Cemented with 500 sacks.
Top at 6350' - Temp. Survey

PREFORATIONS 9662'-72'

PLUG BACK DEPTH 9713'

TOTAL DEPTH 9750'

will be
left open
as w/
egg gauge.

Ground elevation 4054'
above sea level.

internally
plastic
coated

Packer set at
9571'

BEFORE EXAMINATION
OF RECORD
Appl. EXHIBIT NO. 3
CASE NO. 3777

Atlantic Richfield Company

North American Producing Division
New Mexico-Arizona District
Post Office Box 1978
Roswell, New Mexico 88201
Telephone 505 622 4041

W. P. Tomlinson
District Engineer

May 8, 1968

Mallard Petroleum, Inc.
1206 V & J Tower
Midland, Texas 79701

Attention: Mr. J. A. Davidson

Re: Allison Penn. SWD

Gentlemen:

We plan to request a hearing before the New Mexico Oil Conservation Commission to obtain a permit to dispose of produced water in the Bough "C" Formation in our State "AE" No. 2 well, located 1980' FSL, 560' FWL, Section 36, Township 8 South, Range 36 East, Allison Penn. Pool, Roosevelt County, New Mexico.

Attached are a plat, well log, cross-section and well bore diagram of our planned completion. We plan to inject water down tubing, with a packer set at approximately 9600', into existing Bough "C" perforations 9662' to 9672'. We expect to inject approximately 150 BWPD into this well. It is our conclusion that the injection of this volume of water back into the producing horizon will have no effect on existing producing wells. The nearest active producer is Atlantic Richfield Company's State "AE" No. 1 well which is two locations to the north of the subject well.

Since you have leases in the area, we request that you waive objection by signing a copy of this letter in the space provided below and returning it to us.

Your cooperation in this matter will be appreciated.

Yours very truly,

W. P. Tomlinson

W. P. Tomlinson

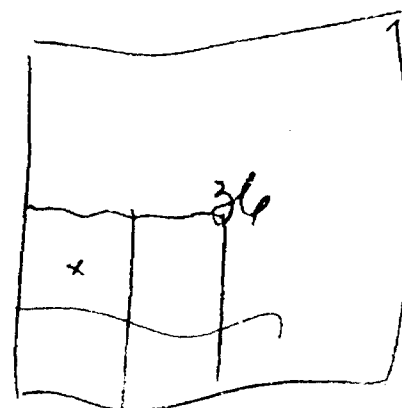
JLT:jcb

BEFORE EXAMINER NUTTER	
App'l	NO. <u>4</u>
CASE NO.	<u>3777</u>

Agreed and Accepted this 9th day of May, 1968.

By:

Representing: Mallard Petroleum, Inc.



Atlantic Richfield Company

North American Producing Division
New Mexico-Arizona District
Post Office Box 1978
Roswell, New Mexico 88201
Telephone 505 622 4041

RECEIVED APR 10 1968

JH



W. P. Tomlinson
District Engineer

April 8, 1968

CO-OWNERS NORTH CROSSROADS UNIT

Re: Salt Water Disposal Facilities

Gentlemen:

We plan to request a hearing before the New Mexico Oil Conservation Commission to obtain a permit to dispose of produced water in the Bough "C" Formation in our State "AE" No. 2 well, located 1980' FSL, 560' FWL, Section 36, Township 8 South, Range 36 East, Allison Penn. Pool, Roosevelt County, New Mexico.

Attached are a plat, well log, cross-section and well bore diagram of our planned completion. We plan to inject water down tubing, with a packer set at approximately 9600', into existing Bough "C" perforations 9662' to 9672'. We expect to inject approximately 150 BWPD into this well. It is our conclusion that the injection of this volume of water back into the producing horizon will have no effect on existing producing wells. The nearest active producer is Atlantic Richfield Company's State "AE" No. 1 well which is two locations to the north of the subject well.

Since you have leases in the area or are co-owners in this lease, we request that you waive objection by signing a copy of this letter in the space provided below and returning it to us.

Your cooperation in this matter will be appreciated.

Yours very truly,

W. P. Tomlinson

W. P. Tomlinson

JLT:jcb

Agreed and Accepted this 8th day of May, 1968.

By: Paul White

Representing: Yates Petr. Corp.

MAILING LIST

Gulf Oil Corporation
P. O. Box 1938
Roswell, New Mexico
88201

Mobil Oil Corporation
P. O. Box 633
Midland, Texas
79701

Skelly Oil Company
P. O. Box 730
Hobbs, New Mexico
88240

Chase Petroleum Company
405 North Marienfeld
Midland, Texas
79701

Texas Pacific Oil Company
P. O. Box 4067
Midland, Texas
79701

John M. Kelly
P. O. Box 310
Roswell, New Mexico
88201

Sunray D-X Oil Company
1101 Wilco Building
Midland, Texas
79701

Yates Petroleum Corporation
207 South 4th Street
Artesia, New Mexico
88210

Shell Oil Company
P. O. Box 1509
Midland, Texas
79701

Great Western Drilling Company
P. O. Box 1659
Midland, Texas
79701



HT

SKELLY OIL COMPANY

P. O. BOX 1850

PRODUCTION DEPARTMENT

TULSA, OKLAHOMA 74102

C. L. BLACKSHER, VICE PRESIDENT

W. P. WHITMORE, MGR. PRODUCTION

W. D. CARSON, MGR. TECHNICAL SERVICES

BARTON W. RATLIFF, MGR. JOINT OPERATIONS

GEORGE W. SELINGER, MGR. CONSERVATION

April 22, 1968

Re: Atlantic Richfield Company's
State "AE" Well No. 2
Allison Penn. Field
Roosevelt County, New Mexico

Atlantic Richfield Company (2)
P. O. Box 1978
Roswell, New Mexico 88201

Attention: Mr. W. P. Tomlinson, District Engineer

Gentlemen:

We have your letter of April 8, 1968, in which you advise of your intention to dispose of produced salt water into the Bough "C" formation in your State "AE" Well No. 2, located 1980' FSL and 560' FWL, Section 36, Township 8 South, Range 36 East, Allison Penn. Pool, Roosevelt County, New Mexico.

We understand that you plan to inject water down tubing, with a packer set at approximately 9600', into the existing Bough "C" perforations, and that your anticipated injection of water will be approximately 150 barrels of water per day.

This is to advise that Skelly Oil Company, as an interested operator in this pool, hereby waives objection and notice to the granting of a permit from the New Mexico Oil Conservation Commission to dispose of produced salt water as above described.

Yours very truly,

RJJ:br