

CASE 5727: BIG "6" DRILLING CORP.  
FOR SALT WATER DISPOSAL, LEA  
COUNTY, NEW MEXICO

CASE NO.

5727

APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,  
ETC.

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 4, 1976

EXAMINER HEARING

IN THE MATTER OF:

Application of Big "6" Drilling Corpora- ) CASE  
tion for salt water disposal, ) 5727  
Lea County, New Mexico. )

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil William F. Carr, Esq.  
Conservation Commission: Legal Counsel for the Commission  
State Land Office Building  
Santa Fe, New Mexico

For the Applicant: Jason W. Kellahin, Esq.  
KELLAHIN & FOX  
Attorneys at Law  
500 Don Gaspar  
Santa Fe, New Mexico

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General Court Reporting Service  
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Phone (505) 982-9212

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BOB SCHMUCKER

Direct Examination by Mr. Kellahin

3

Cross Examination by Mr. Nutter

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EXHIBIT INDEX
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Applicant's Exhibit Two, Plat

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Applicant's Exhibit Three, Structure Map

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Applicant's Exhibit Four, Water Analysis

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Applicant's Exhibit Five, Water Analysis

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Applicant's Exhibit Six, Diagrammatic Sketch

10

Applicant's Exhibit Seven, Waiver

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Applicant's Exhibit Eight, Radioactive Log

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1 MR. NUTTER: We will call next Case Number 5727.

2 MR. CARR: Case 5727, application of Big "6" Drilling  
3 Corporation for salt water disposal, Lea County, New Mexico.

4 MR. KELLAHIN: If the Examiner please, Jason Kellahin,  
5 Kellahin and Fox, appearing for the applicant and we have one  
6 witness to be sworn.

7 (THEREUPON, the witness was duly sworn.)

8

9 BOB SCHMUCKER

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

12

13 DIRECT EXAMINATION

14 BY MR. KELLAHIN:

15 Q. Would you state your name, please?

16 A. Bob Schmucker.

17 Q. What business are you engaged in, Mr. Schmucker?

18 A. I'm a Petroleum Engineer associated with Foy Boyd  
19 Associates, a consulting firm out of Midland, Texas.

20 Q. F-o-y B-o-y-d?

21 A. That is correct.

22 Q. In connection with your work as a consultant, have  
23 you been employed by Big "6" Drilling Corporation?

24 A. As a consultant, yes.

25 Q. In this case?

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1 A. Yes.

2 Q. Are you familiar with the application of Big "6"  
 3 in Case 5727?

4 A. Yes, sir.

5 Q. Mr. Schmucker, have you ever testified before the  
 6 Oil Conservation Commission?

7 A. No, sir, I haven't.

8 Q. For the benefit of the Examiner would you please  
 9 outline your education and experience as a petroleum engineer?

10 A. I have a Bachelor of Science degree in Petroleum  
 11 Engineering from the University of Houston. I have fifteen  
 12 years since that time as a production engineer with Cities  
 13 Service Oil Company and I have been three years with my  
 14 present company. All of these years I have been involved in  
 15 drilling and production work, both in the field and in the  
 16 office, planning and carrying out this type of work.

17 MR. KELLAHIN: Are the witness' qualifications  
 18 acceptable?

19 MR. NUTTER: Yes, they are.

20 Q. (Mr. Kellahin continuing.) Mr. Schmucker, what is  
 21 proposed by Big "6" Drilling Corporation in this case?

22 A. They propose to convert the Ora Jackson "A" No. 1  
 23 Well in Lea County, New Mexico from a producing well to a  
 24 salt water disposal well in the Bone Springs-Scharb Field.

25 Q. What is the present state of this well?

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1 A. It is currently shut in.

2 Q. Has it been shut in for any period of time?

3 A. About three years.

4 Q. Now referring to what has been marked as Exhibit

5 Number One would you identify that exhibit, please?

6 A. This is an ownership map showing all of the wells  
7 that are completed or have produced from Bone Springs marked  
8 in blue with the proposed injection well marked in red.

9 Q. Now, there is Bone Springs production offsetting the  
10 particular well?

11 A. That is correct.

12 Q. Referring to Exhibit Number Two would you identify  
13 that exhibit?

14 A. This is a plat showing the ownership and the  
15 perforations on this well and the offsetting wells.

16 Q. Now, who operates the offsetting wells?

17 A. Hondo operates one to the west and Atlantic one to  
18 the northeast and Big "6" has three other offsetting wells.

19 Q. How far away is the Hondo well from the proposed  
20 injection well?

21 A. This looks like almost a half a mile.

22 Q. How about the Atlantic one?

23 A. About the same distance.

24 Q. Now, referring to what has been marked as Exhibit  
25 Number Three would you identify that exhibit, please?

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1 A. This is a structure map showing the proposed  
2 injection well and the other Bone Springs wells that we have  
3 been referring to with structure on top of the Bone Springs  
4 in the Scharb Field indicating this well to be high on the  
5 structure.

6 Q. Higher than the offsetting wells?

7 A. Yes.

8 Q. Did this well make water in the Bone Springs?

9 A. Yes, it did.

10 Q. It watered out?

11 A. It became uneconomical to produce.

12 Q. Now, referring to what has been marked as Exhibit  
13 Number Four would you identify that exhibit, please?

14 A. This is a water analysis of the Gene Dalmont Well  
15 operated by Big "6", the northwest offset. Could I refer to  
16 Number Five, also, at the same time?

17 Q. Yes, sir.

18 A. Both of these are water analyses of offsetting  
19 wells operated by Big "6". This is Bone Springs water which  
20 will be going back into the Bone Springs zone as proposed.  
21 These two waters are compatible and would be compatible with  
22 what had previously produced from the Bone Springs in this  
23 proposed well.

24 Q. What volume of water would you inject in this well?

25 A. About a hundred and seventy-five barrels a day.



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1 Q And what pressure will be required to get the  
 2 formation to take the water?

3 A All indications are that it should go on a vacuum.

4 Q The hydrostatic head of the water would put it back  
 5 into the formation?

6 A That is correct. The last bottom-hole pressures that  
 7 were run in this field were run in 1964 and they were about  
 8 thirty-one hundred pounds and the hydrostatic from this is  
 9 going to be forty-nine hundred so this should be adequate to  
 10 put it on a vacuum. It would be somewhat lower now, the  
 11 bottom-hole pressure, than it was in '64.

12 Q In your opinion will using this well as an injection  
 13 well or a disposal well as proposed, cause any damage to the  
 14 reservoir?

15 A No, sir, it should be helpful in restoring some of  
 16 the pressure.

17 Q You think it might enhance recovery from some of  
 18 the offsetting wells?

19 A It's possible that it would. This volume is probably  
 20 not going to be enough to be noticeable but it certainly would  
 21 not be detrimental.

22 Q It will replace some of it that is gone?

23 A That is correct.

24 Q Now, referring to what has been marked as Exhibit  
 25 Number Six would you identify that exhibit?

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1 A. Well, this is a diagrammatic sketch of the well as  
2 it is proposed to be completed as a disposal well, showing  
3 thirteen-and-three-eighths set at three hundred and ninety-  
4 eight feet and the eight-and-five at thirty-nine, eighty-nine,  
5 the four-and-a-half set through the pay, ten thousand a  
6 hundred and sixty-five. It indicates that there will be a  
7 packer at nine thousand feet. This water will be disposed  
8 of through plastic lined tubing with inhibited fluid on the  
9 back side.

10 Q. Will you put a pressure gauge at the surface?

11 A. Yes, sir.

12 Q. Now, there was a hearing on a similar application  
13 involving this same well several years ago, wasn't there?

14 A. That is correct.

15 Q. Has there been any change in conditions since then?

16 A. Well, Arco opposed at that time but they are not  
17 now opposing it.

18 Q. Referring to what has been marked as Exhibit Number  
19 Seven, is that a waiver from Arco?

20 A. Yes.

21 Q. They have no objection to the disposal well?

22 A. That is correct.

23 Q. Now, referring to what has been marked as Exhibit  
24 Number Eight, would you identify that exhibit?

25 A. This is a radioactive log of the proposed injection

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1 well with the perforations marked in the Bone Springs zone.

2 Q Did I ask you what volume of water you are going to  
 3 put in this?

4 A Yes, sir, about a hundred and seventy-five barrels.

5 Q In your opinion is the approval of this application  
 6 in the interest of conservation and the prevention of waste?

7 A Yes, sir.

8 Q What is presently being done with the produced  
 9 water?

10 A It is being trucked out at considerable expense.

11 Q Would continued trucking require premature abandonment  
 12 of those two wells?

13 A Yes, without a doubt.

14 Q And will approval of this disposal well prolong the  
 15 producing life of those two wells?

16 A Yes, sir.

17 Q Were Exhibits One through Eight prepared by you or  
 18 under your supervision, with the exception of Seven?

19 A They were prepared by Donna Holler with the firm  
 20 in Hobbs, all reports.

21 Q Have you personally examined these exhibits?

22 A Yes, sir.

23 Q In your opinion do they reflect the information  
 24 purported to be in them?

25 A Yes, sir.

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1 Q And Exhibit Seven is a copy of the letter from  
2 Arco?

3 A That's correct.

4 MR. KELLAHIN: At this time we will offer Exhibits  
5 One through Eight, inclusive.

6 MR. NUTTER: Applicant's Exhibits One through Eight  
7 will be admitted.

8 (THEREUPON, Applicant's Exhibits One through  
9 Eight were admitted into evidence.)

10 MR. KELLAHIN: That's all we have, Mr. Nutter.

11  
12 CROSS EXAMINATION

13 BY MR. NUTTER:

14 Q Mr. Schmucker, I can't tell by looking at Exhibit  
15 One, Two or Three exactly which of the wells are still  
16 producing in the pool. Referring to your Exhibit Number Two,  
17 which would be the producing wells?

18 A I believe that all of these wells that are shown on  
19 this plat are Bone Springs -- oh, which ones are shut in?

20 Q Yes, and which ones are still producing?

21 A The ones with the little cross mark are the  
22 shut-in wells, with the exception of the abandoned wells,  
23 either temporarily or as for example in the C. B. Reed Hooper,  
24 just south of Big "6", that would be a shut-in well.

25 Q Okay.

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1 A. And the others are marked similarly.

2 Q. What about this Big "6" Well in the northeast-  
 3 northeast of 7, is it a producer or not?

4 A. Yes, sir.

5 Q. It appears to have a little hatchure mark across it as  
 6 a TA or abandoned well on Exhibit Number Three and you  
 7 mentioned the Big "6" was operating three wells and I see  
 8 four wells on Exhibit Two that don't have that hatchure mark,  
 9 the one straight north of your disposal well, the one northwest,  
 10 the one southwest and the one southeast.

11 A. All right, I will have to stand corrected in one  
 12 instance, the one that is proposed as an injection well does  
 13 not have the little hatchure marks and it is shut in. It should  
 14 have those too.

15 Q. What about the other four Big "6" producing wells  
 16 that are shown, are they all producing?

17 A. Wait a minute now, I see the one you are referring  
 18 to up in Section 5.

19 Do you have a copy of the up-dated exhibit? I do  
 20 not, mine is an older copy of Exhibit Two.

21 This well I'm sure is shut in also. The Ora  
 22 Jackson 1 up in the --

23 Q. A half-a-mile north of the disposal well?

24 A. Yes. The producing wells are the Gene Dalmont,  
 25 the Hooper B and the Ora Jackson No. 2.

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1 Q Those are producing wells?

2 A Yes, sir.

3 Q And also the Hondo Well that is straight west?

4 A Yes, sir.

5 Q And those are the only four producing wells in  
6 the unit now? Atlantic has one?

7 A Yes, sir.

8 Q To the northeast, so you've got five producing  
9 wells in the pool?

10 A I'm not sure about the total number of wells in  
11 the pool.

12 Q Now, you said you were going to be disposing of  
13 a hundred and ninety-five barrels of water a day, is that the  
14 amount of water the Big "6" wells make or does that include  
15 water from other leases, from other operators?

16 A No, sir, this is water from the Gene Dalmont No. 1  
17 and the Hooper B No. 1. The Ora Jackson No. 2 does not  
18 produce any water.

19 Q And it's the lowest well on the structure according  
20 to Exhibit Number Three?

21 A That is correct and I cannot explain this.

22 Q I guess the water comes from the top of the structure  
23 here and you are going to put it in the top of the structure.

24 A I'm aware that these were the figures as reported to  
25 me by Big "6". This down-structure well makes no water.

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1 MR. NUTTER: Are there any other questions of the  
2 witness?

3 MR. RAMEY: I would like to ask a question, Mr. Nutter.

4 MR. NUTTER: Yes, sir.

5 MR. RAMEY: Do you know whether Big "6" would be  
6 willing to lower the packer on this tubing in this well to  
7 someplace below the top of the cement?

8 THE WITNESS: I'm sure they would. I'm sure they  
9 would.

10 MR. RAMEY: I don't have anything else.

11 MR. NUTTER: Are there any further questions? The  
12 witness may be excused.

13 (THEREUPON, the witness was excused.)

14 MR. NUTTER: Do you have anything further,  
15 Mr. Kellahin?

16 MR. KELLAHIN: That's all, Mr. Nutter.

17 MR. NUTTER: Does anyone have anything to offer in  
18 Case Number 5727? We will take the case under advisement.

19

20

21

22

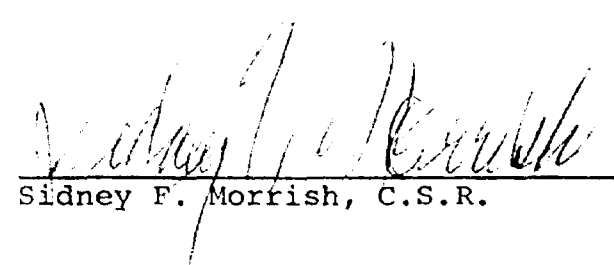
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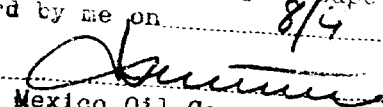
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REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand 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, C.S.R.

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I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of case No. 5727  
heard by me on 8/4, 1976.  
  
Examiner  
New Mexico Oil Conservation Commission





# OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501



DIRECTOR  
JOE D. RAMEY

LAND COMMISSIONER  
PHIL R. LUCERO  
August 12, 1976

STATE GEOLOGIST  
EMERY C. ARNOLD

Mr. Jason Kellahin  
Kellahin & Fox  
Attorneys at Law  
Post Office Box 1769  
Santa Fe, New Mexico 87501

Re: CASE NO. 5727  
ORDER NO. R-5255

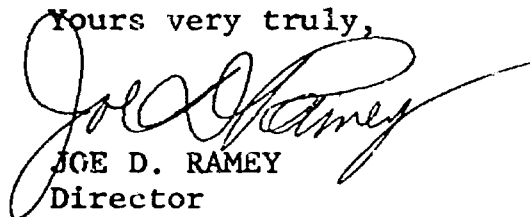
Applicant:

Big "6" Drilling Corp.

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 x  
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. 5727  
Order No. R-5255

APPLICATION OF BIG "6" DRILLING 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 August 4, 1976, at Santa Fe, New Mexico, before Examiner, Daniel S. Nutter.

NOW, on this 11th day of August, 1976, 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, Big "6" Drilling Company, is the owner and operator of the Ora Jackson "A" Well No. 1, located in Unit M of Section 5, Township 19 South, Range 35 East, NMPM, Scharb-Bone Springs Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Bone Springs formation, with injection into the perforated interval from approximately 10,062 feet to 10,119 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 10,000 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 800 psi.

Case No. 5727  
Order No. R-5255

(6) 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.

(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, Big "6" Drilling Company, is hereby authorized to utilize its Ora Jackson "A" Well No. 1, located in Unit M of Section 5, Township 19 South, Range 35 East, NMPM, Scharb-Bone Springs Pool, Lea County, New Mexico, to dispose of produced salt water into the Bone Springs formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 10,000 feet, with injection into the perforated interval from approximately 10,062 feet to 10,119 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 800 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.

-3-

Case No. 5727  
Order No. R-5255

(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 herein-  
above designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

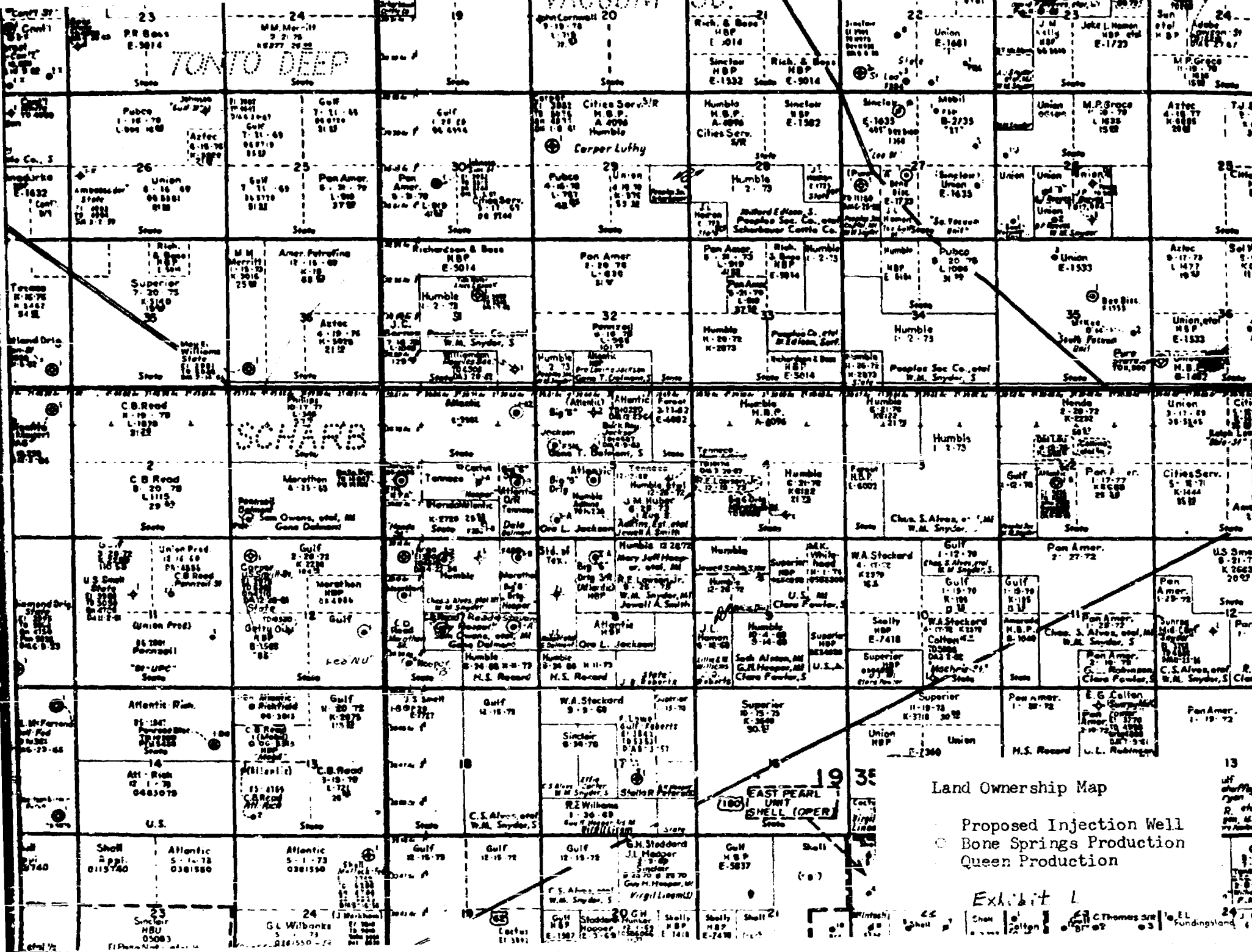
*Phil R. Lucero*  
PHIL R. LUCERO, Chairman

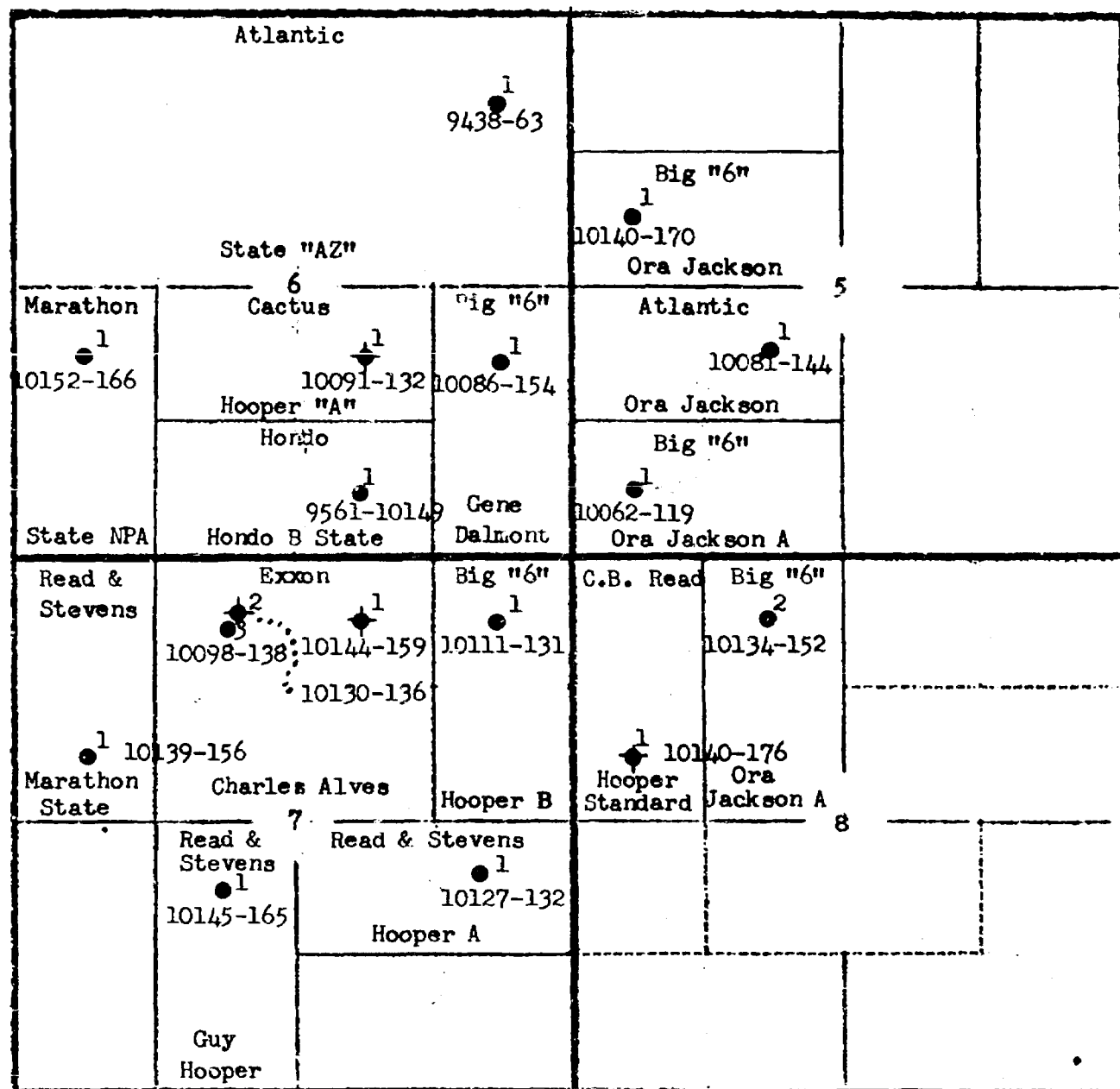
*Emery C. Arnold*  
EMERY C. ARNOLD, Member

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

SEAL

jr/



T  
19  
S

Scharb Bone Springs  
Perforation Depths  
Not to Scale

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
Big "6" EXHIBIT NO. 2  
CASE NO. 5727

R 35 E

COMPLETED  
FROM CADDOWAY  
BY 550' FROM  
SCHARB PROD.

-6250

-6200

-6150

-6157

-6196

-6234

-6190

-6189

-6187

-6182

-6175

-6197

-6191

-6211

-6253

-6224

-6264

-6260

-6238

-6257

SCHARB  
FIELD

(Bone Springs Prod.)

-6287

T  
19  
S

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

Big "6" EXHIBIT NO. 3

CASE NO. 5724

SCHARB FIELD STRUCTURE MAP

Datum: Top Scharb Ls.

C.I.: 50 feet

Proposed Salt Water Disposal Well

Wells drilled below 10,000'

Bone Springs Production

William J. LeMay - Geologist



# TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63119  
(314) WO 1-3500/TWX 910-780-1660/Telex 44-2417

## WATER ANALYSIS REPORT

COMPANY Big "6" Drilling Company ADDRESS Hobbs, New Mexico DATE 7-26-76

SOURCE Hooper "B" Bone Springs Formation DATE SAMPLED 7-20-76 ANALYSIS NO. 11840  
Analysis Mg/L \*Meq/L

1. PH	<u>7.2</u>		
2. H <sub>2</sub> S (Qualitative)	<u>3.0 ppm</u>		
3. Specific Gravity	<u>1.130</u>		
4. Dissolved Solids	<u>170,424</u>		
5. Suspended Solids	<u>---</u>		
6. Phenolphthalein Alkalinity (CaCO <sub>3</sub> )	<u>---</u>		
7. Methyl Orange Alkalinity (CaCO <sub>3</sub> )	<u>120</u>		
8. Bicarbonate (HCO <sub>3</sub> )	<u>146</u> ÷ 61	<u>2.4</u>	HCO <sub>3</sub>
9. Chlorides (Cl)	<u>110,000</u> ÷ 35.5	<u>3,099</u>	Cl
10. Sulfates (SO <sub>4</sub> )	<u>750</u> ÷ 48	<u>16</u>	SO <sub>4</sub>
11. Calcium (Ca)	<u>7,200</u> ÷ 20	<u>360</u>	Ca
12. Magnesium (Mg)	<u>2,381</u> ÷ 12.2	<u>195</u>	Mg
13. Total Hardness (CaCO <sub>3</sub> )	<u>27,800</u>		
14. Total Iron (Fe)	<u>3.0 ppm</u>		
15. Barium (Qualitative)	<u>Pos.</u>		
16.			

\*Milli equivalents per liter

### PROBABLE MINERAL COMPOSITION

Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca (HCO <sub>3</sub> ) <sub>2</sub>	81.04		<u>2.4</u>		<u>194</u>
Ca SO <sub>4</sub>	68.07		<u>16</u>		<u>1,090</u>
Ca Cl <sub>2</sub>	55.50		<u>342</u>		<u>18,981</u>
Mg (HCO <sub>3</sub> ) <sub>2</sub>	73.17				
Mg SO <sub>4</sub>	60.19				
Mg Cl <sub>2</sub>	47.62		<u>195</u>		<u>9,282</u>
Na HCO <sub>3</sub>	84.00				
Na <sub>2</sub> SO <sub>4</sub>	71.03				
Na Cl	58.46		<u>2,562</u>		<u>149,877</u>

360

195

2,562

Ca

Mg

Na

←

←

←

HCO<sub>3</sub>

SO<sub>4</sub>

Cl

2.4

16

3,099

Saturation Values Distilled Water 20°C

Ca CO<sub>3</sub> 13 Mg/L

Ca SO<sub>4</sub> • 2H<sub>2</sub>O 2,090 Mg/L

Mg CO<sub>3</sub> 103 Mg/L

REMARKS 1 - Mr. Holler - Box 6485, Odessa, Texas 79760  
1 - Eng. Dept. - 1000 West Broadway, Hobbs, N.M. 88240  
cc: ✓ 1 - Raybon, 1 - Roberts, 1 - Nix, 1 - Mile

Respectfully submitted  
TRETOLITE COMPANY

Lay Shaffner

Exhibit 5





**TRETOLITE DIVISION**  
369 Marshall Avenue / Saint Louis, Missouri 63117  
(314) WO 1-3500 / TWX 910-760-1860 / Telex 44 7417

## WATER ANALYSIS REPORT

COMPANY Big "D" Drilling Company ADDRESS Hobbs, New Mexico DATE 7-26-76  
SOURCE Gene Belmont Bone Springs Formation DATE SAMPLED 7-20-76 ANALYSIS NO. 11841  
Analysis Mg/L \*Meq/L

1. PH	<u>7.1</u>		
2. H <sub>2</sub> S (Qualitative)	<u>3.0 ppm</u>		
3. Specific Gravity	<u>1.130</u>		
4. Dissolved Solids	<u>166,870</u>		
5. Suspended Solids	<u>--</u>		
6. Phenolphthalein Alkalinity (CaCO <sub>3</sub> )	<u>--</u>		
7. Methyl Orange Alkalinity (CaCO <sub>3</sub> )	<u>100</u>		
8. Bicarbonate (HCO <sub>3</sub> )	HCO <sub>3</sub> <u>122</u> $\div 61$ <u>2.0</u>	HCO <sub>3</sub>	
9. Chlorides (Cl)	Cl <u>102,000</u> $\div 35.5$ <u>2,873</u>	Cl	
10. Sulfates (SO <sub>4</sub> )	SO <sub>4</sub> <u>630</u> $\div 48$ <u>13</u>	SO <sub>4</sub>	
11. Calcium (Ca)	Ca <u>7,440</u> $\div 20$ <u>372</u>	Ca	
12. Magnesium (Mg)	Mg <u>1,312</u> $\div 12.2$ <u>108</u>	Mg	
13. Total Hardness (CaCO <sub>3</sub> )	<u>24,000</u>		
14. Total Iron (Fe)	<u>2.5 ppm</u>		
15. Barium (Qualitative)	<u>Fos.</u>		
16.			

\*Milli equivalents per liter

### PROBABLE MINERAL COMPOSITION

	Compound	Equiv. Wt.	X	Meq/L	=	Mg/L
Ca $\leftarrow$ HCO <sub>3</sub>	Ca (HCO <sub>3</sub> ) <sub>2</sub>	81.04		<u>2.0</u>		<u>162</u>
Mg $\leftarrow$ SO <sub>4</sub>	Ca SO <sub>4</sub>	68.07		<u>13</u>		<u>885</u>
Na $\leftarrow$ Cl	Ca Cl <sub>2</sub>	55.50		<u>357</u>		<u>19,814</u>
	Na (HCO <sub>3</sub> ) <sub>2</sub>	73.17				
	Mg SO <sub>4</sub>	60.19				
	Mg Cl <sub>2</sub>	47.62		<u>108</u>		<u>5,141</u>
	Na HCO <sub>3</sub>	84.00				
	Na CO <sub>3</sub>	71.03				
	Na Cl	58.46		<u>2,408</u>		<u>140,868</u>

Saturation Values Distilled Water 20°C  
Ca CO<sub>3</sub> 13 Mg/L  
Ca SO<sub>4</sub> • 2H<sub>2</sub>O 2,090 Mg/L  
Mg CO<sub>3</sub> 103 Mg/L

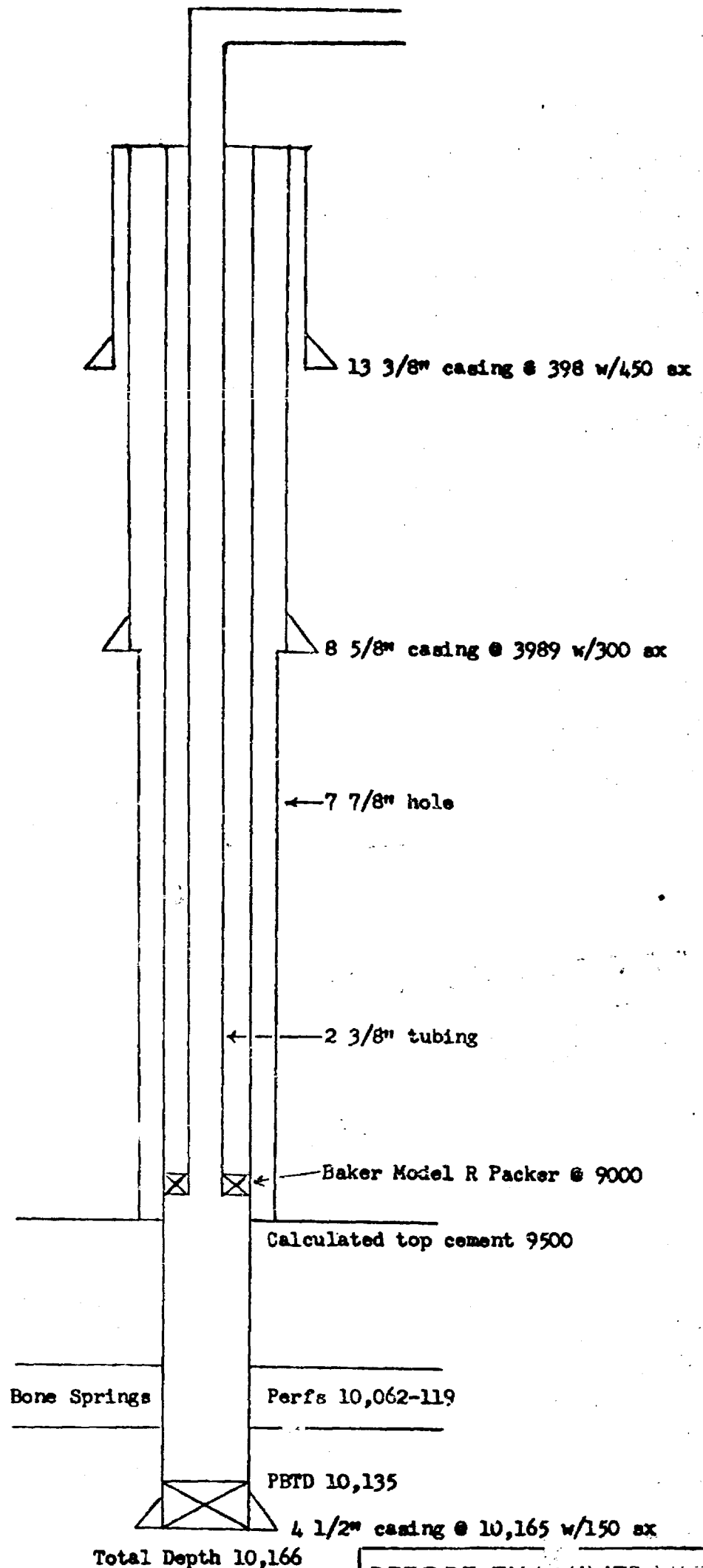
REMARKS 1 - Mr. Holler - Box 6485, Odessa, Texas 79760  
1 - Eng. Dept. - 1000 West Broadway, Hobbs, N.M. 88240  
cc: V1 - Raybon, 1 - Roberts, 1 - Nix, 1 - File

Respectfully submitted  
TRETOLITE COMPANY

Ray Chaffner

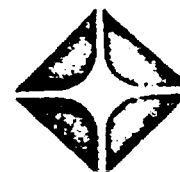
Exhibit 4

DIAGRAMMATIC SKETCH  
of Proposed Water Injection



Big "6" Drilling Company  
Ora Jackson A No. 1  
660 FSL & 660' FWL  
Sec. 5, T19S, R35E  
Scharb Bone Springs Pool  
Lea County, New Mexico

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
Big "6" EXHIBIT NO. 6  
CASE NO. 5727



July 29, 1976

Oil Conservation Commission  
Box 2088  
Santa Fe, NM 87501

Re: Commission Hearing August 4, 1976  
Case No. 5727  
Application of Big "6" Drilling Company  
for Salt Water Disposal in the Bone  
Springs Formation, Scharb Field,  
Lea County, New Mexico

Gentlemen:

In reference to Case No. 5727, application of Big "6" Drilling Co. for approval to dispose of produced water into the Bone Springs formation in Scharb Field, Lea County, New Mexico: The proposed salt water disposal well, Big "6" - Ora Jackson A No. 1 is an offset to one of the wells Atlantic Richfield operates in this field. Atlantic Richfield waives any objection to this application.

Very truly yours,

*J. L. Tweed*  
J. L. Tweed

JRK/hkc

cc: Mr. Bud Ham  
Big "6" Drilling Co.  
P. O. Box 6485  
Odessa, TX 79760

Mrs. Donna Holler  
Oil Reports and Gas Services, Inc.  
P. O. Box 763  
Hobbs, NM 88240

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
Big "6" EXHIBIT NO. 7  
CASE NO. 5727

Atlantic Richfield Company

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

AUG - 2 1976

July 29, 1976

Oil Conservation Commission

Oil Conservation Commission  
Box 2088  
Santa Fe, NM 87501

Re: Commission Hearing August 4, 1976  
Case No. 5727  
Application of Big "6" Drilling Company  
for Salt Water Disposal in the Bone  
Springs Formation, Scharb Field,  
Lea County, New Mexico

Gentlemen:

In reference to Case No. 5727, application of Big "6" Drilling Co. for approval to dispose of produced water into the Bone Springs formation in Scharb Field, Lea County, New Mexico: The proposed salt water disposal well, Big "6" - Ora Jackson A No. 1 is an offset to one of the wells Atlantic Richfield operates in this field. Atlantic Richfield waives any objection to this application.

Very truly yours,

*J. L. Tweed*  
J. L. Tweed

JRK/hkc

cc: Mr. Bud Ham  
Big "6" Drilling Co.  
P. O. Box 6485  
Odessa, TX 79760

Mrs. Donna Holler  
Oil Reports and Gas Services, Inc.  
P. O. Box 763  
Hobbs, NM 88240

Dockets Nos. 23-76 and 24-76 are tentatively set for hearing on August 18 and September 1, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 4, 1976

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 Richard L. Stamets, Alternate Examiner:

- CASE 5726: Application of Cities Service Oil Company for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the North Burton Flats-Wolfcamp Gas Pool and an undesignated Canyon pool in the wellbore of its State CT Well No. 1, located in Unit I of Section 16, Township 20 South, Range 28 East, Eddy County, New Mexico.
- CASE 5727: Application of Big "6" Drilling Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Bone Springs formation through the perforated interval from 10,062 feet to 10,119 feet in its Ora Jackson "A" Well No. 1 located in Unit M of Section 5, Township 19 South, Range 35 East, Scharb-Bone Springs Pool, Lea County, New Mexico.
- CASE 5728: Application of Pennzoil Company for an exception to Order No. R-3221, Lea County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the provisions of Commission Order No. R-3221, permission to dispose of, in an unlined pit, produced salt water from its Mescalero Ridge Unit Well No. 1, located in Unit M of Section 20, Township 19 South, Range 34 East, Quail Ridge-Morrow Pool, Lea County, New Mexico.
- CASE 5729: Application of Penroc Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 19 South, Range 28 East, Eddy County, New Mexico, to be dedicated to applicant's Angell Ranch Well No. 1 to be drilled at an orthodox location in Unit B of said Section 33 to test the Morrow formation. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 5730: Southeastern New Mexico nomenclature case calling for the creation and extension of certain pools in Eddy, Chaves, and Lea Counties, New Mexico:
- a) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Mid Bell Lake-Morrow Gas Pool. The discovery well is the Continental Oil Company Bradley "A" Well No. 1 located in Unit F of Section 19, Township 23 South, Range 34 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 34 EAST, NMPM  
Section 19: W/2

- b) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the East Burton Flat-Morrow Gas Pool. The discovery well is the Texas Oil and Gas Corporation Superior Federal Well No. 1 located in Unit G of Section 8, Township 20 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM  
Section 4: W/2  
Section 8: All  
Section 9: All  
Section 16: All  
Section 17: All  
Section 18: All

- c) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Strawn production and designated as the East Burton Flat-Strawn Gas Pool. The discovery well is the Texas Oil and Gas Corporation Yates Federal Well No. 1 located in Unit N of Section 8, Township 20 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM  
Section 8: S/2

KELLAHIN AND FOX  
ATTORNEYS AT LAW  
500 DON GASPAR AVENUE  
POST OFFICE BOX 1769  
SANTA FE, NEW MEXICO 87501

JASON W. KELLAHIN  
ROBERT E. FOX  
W. THOMAS KELLAHIN

TELEPHONE 982-4315  
AREA CODE 505

July 12, 1976

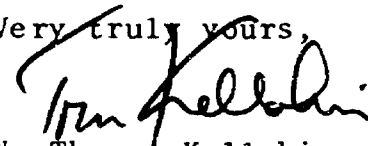
Mr. Bill Carr  
Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Big "6" Drilling Company

Dear Bill:

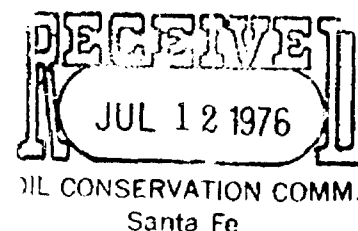
Please have the enclosed application scheduled  
for hearing on August 4, 1976.

Very truly yours,

  
W. Thomas Kellahin

WTK:kjf

Enclosure



BEFORE THE  
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF  
BIG "6" DRILLING COMPANY FOR SALT  
WATER DISPOSAL, LEA COUNTY, NEW  
MEXICO.

A P P L I C A T I O N

Comes now Big "6" Drilling Company, by its attorneys,  
Kellahin & Fox, and applies to the Oil Conservation Commission  
of New Mexico for approval of a salt water disposal well and  
in support thereof would show:

1. That applicant seeks authority to utilize its Ora  
Jackson "A" Well No. 1, located in Unit M of Section 5,  
Township 19 South, Range 35 East, N.M.P.M., Scharb-Bone Springs  
Pool, Lea County, New Mexico to dispose of produced salt water  
into the Bone Springs formation in the perforated interval  
from 10,062 feet to 10,119 feet.

2. That this matter was considered by the Commission in  
Case No. 4527 and on May 13, 1971 entered its order No. R-4145  
denying the requested application.

3. That subsequent production has largely depleted recov-  
erable reserves in the subject section.

4. That there has been a substantial change in circum-  
stances which now justify approval of this application.

WHEREFORE applicant prays that this application be set

Case  
5727

for hearing before the Commission's Examiner and after  
notice and hearing as required by law, the Commission  
authorized the salt water disposal as requested.

Respectfully submitted,

BIG "6" DRILLING COMPANY

By *W. T. Kellahin*

KEILAHIN & FOX

P. O. Box 1769

Santa Fe, New Mexico 87501

Attorneys for Applicant



DRAFT  
jr/

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. 5727

Order No. R- 5255

APPLICATION OF BIG "6" DRILLING ~~CORPORATION~~ 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 August 4, 1976,  
at Santa Fe, New Mexico, before Examiner, Daniel S. Nutter.

NOW, on this        day of August, 1976, 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, Big "6" Drilling <sup>Company</sup> Corporation,  
is the owner and operator of the Ora Jackson "A" Well No. 1,  
located in Unit M of Section 5, Township 19 South,  
Range 35 East, NMPM, Scharb-Bone Springs Pool,  
Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Bone Springs  
formation, with injection into the perforated interval  
from approximately 10,062 feet to 10,119 feet.

(4) That the injection should be accomplished through         
2 3/8-inch plastic lined tubing installed in a packer  
set at approximately 10,000 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.

(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 800 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, Big "6" Drilling <sup>Company</sup> Corporation, is hereby authorized to utilize its Ora Jackson "A" Well No. 1, located in Unit M of Section 5, Township 19 South, Range 35 East, NMPM, Scharb-Bone Springs Pool, Lea County, New Mexico, to dispose of produced salt water into the Bone Springs formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 10,000 feet, with injection into the perforated interval from approximately 10,062 feet to 10,119 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 800 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.

# Memo

From  
D. S. NUTTER  
CHIEF ENGINEER

To Florine :

Letter of transmittal  
w/ order should  
contain this remark:

Please note that the  
packer setting depth  
prescribed by this  
order is different from  
~~that~~ that proposed on  
your Exhibit No. 6.