

CASE 5823: THORNTON HOPPER FOR  
SALT WATER DISPOSAL, EDDY COUNTY,  
NEW MEXICO

CASE NO.

5823

---

APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,  
ETC.

# XL Pumping Service

THORNTON HOPPER, PETROLEUM ENGINEER, OWNER

P. O. BOX 121  
MENTONE, TEXAS 79754

TELEPHONE: 377-2261 MENTONE  
527-3596 WINK

February 14, 1977

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

Att: Mr. Richard L. Stamets

Re: Thornton Hopper  
Application for SWD  
Black River (Delaware)  
Eddy County, N. Mex.

Dear Sir:

Inclosed is a letter from Mr. Jack C. Givens, President of Vann Tool Co., Artesia, New Mexico, to me in explanation of the log run on Bradley Federal #6, Eddy County, New Mexico on 2-5-77.

Continental Oil Co. is operating the Ford-Geraldine Field (Delaware) Unit as a water flood project. The unit is in Texas, four miles south of the state line, and approximately sixteen miles southeast of the Black River (Delaware) Field. It has been in full operation for three or four years. The pay is Delaware sand at an approximate depth of 2500'. The field contains some 300 wells and has been only partially exploited. They are in the process of extending the flood to other portions at this date. They are using a constant pressure of 1,000 psi. on the syatem at the surface. They have had no cement bond failures with loss of fluid above the top of the Delaware sand. They have had one or two instances when remedial work was done, but only to contain injection fluid to a specific zone of the pay section.

It will require 350 to 400 psi. to inject water into Bradley Federal #6. From experience, I believe the pressure will rise to between 500 and 600 psi. after injecting for a while.

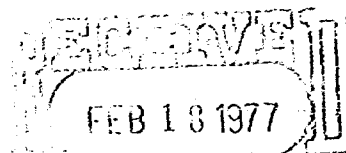
Based on the bond log and the water flood pressures, I would like to request that a maximum pressure of 800 psi. be allowed for this well. I believe this pressure to be reasonable and essential for a good disposal system.

Should you think it necessary for me to deepen the well by fifty or sixty feet for your approval of the pressure request; I will do so as soon as I receive your reply.

Yours truly,

Thornton Hopper

cc: USGS and NMOCC offices, Artesia,,New Mexico



NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe



P. O. BOX 38 — PHONE 505 746-2768  
ARTESIA, NEW MEXICO 88210

OIL AND GAS WELL COMPLETION SERVICES

SPECIALIZED TOOLS FOR THE PETROLEUM INDUSTRY

Artesia, New Mexico  
February 11, 1977

Mr. Thornton Hopper  
Box 121  
Mentone, Texas 79754

Ref: Cement Bond Log  
Thornton Hopper  
Bradley Federal #6  
Eddy County, N. Mex.  
Recorded on 2-5-77

Mr. Hopper-

The Cement Bond Log is a measurement of the quality of the accoustical connection between the well casing, the cement in the annular space, and the formations. While no quantitative interpretation can be made of Cement Bond Logs, it is common to make qualitative interpretations which are usually supported by actual experience.

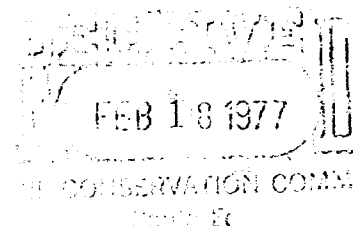
This log records what appears to be good bonding from 1958-1986, the lower 28' of the hole. Further, there is fair-to-good bond at 1926-1958; at least fair bonding 1942-1926; and good bonding over the 32' interval, 1810-1842. Top of the cement column is at 1140', with several intervals of good bonding, namely 1140-1320 and 1480-1550.

I suggest the 26' of well bonded cement at the bottom of the casing, plus the column of cement to 1140' which is interspersed with zones of good bonding, should provide a good seal against fluid flow behind the casing from zones below the bottom of the casing.

Cordially,  
*Jack C. Givens*  
Jack C. Givens  
President

P. S. All interpretations are opinions based on inferences from electrical or other measurements and Vann Tool Company can not, and does not, guarantee accuracy or correctness of any interpretations, and shall not, except in cases of gross negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by Vann Tool Company officers, agents, or employees. Interpretations are also subject to our General Terms and Conditions printed in our current price schedule.

J. C. G.



ORIGINATORS OF TUBING-CONVEYED PERFORATING

[illegible]

PLUGS AND ADAPTERS

Heaving plug—Material ..... Length ..... Depth set .....  
 Adapters—Material ..... Size .....

SHOOTING RECORD

No.	Shot used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet  
 Cable tools were used from ..... 0 ..... feet to 2000 ..... feet, and from ..... feet to ..... feet

DATES

....., 19..... Put to producing ..... Non-Producer ..... 19.....  
 The production for the first 24 hours was ..... 0 ..... barrels of fluid of which ..... 0 ..... % was oil; ..... 0 ..... %  
 emulsion; ..... % water; and ..... % sediment. . Gravity, bB6. ....  
 If gas well, cu. ft. per 24 hours ..... Gallons gasoline per 1,000 cu. ft. of gas .....  
 Rock pressure, lbs. per sq. in. ....

EMPLOYEES

Albert R. Martin ..... Driller Joe E. Bond ..... Driller  
 Cecil Cooper ..... Driller D. L. Howerton ..... Driller

FORMATION RECORD

FROM-	TO-	TOTAL FEET	FORMATION
0	6	6	Soil
6	9	3	Caliche
9	25	16	Red Shale
25	77	52	Red Shale
77	95	18	Gravel
95	140	45	Red Shale
140	165	25	Grey shale
165	175	10	Blue shale
175	200	25	Anhydrite
200	275	75	Anhydrite
275	289	14	Red rock
289	295	6	Blue shale
295	305	10	Anhydrite
305	390	85	Brown shale & anhydrite
390	420	30	Anhydrite & red rock
420	505	85	Red shale & anhydrite
505	603	98	Anhydrite
603	815	212	Lime
815	845	30	Cyp
845	960	115	Anhydrite
960	1040	80	Blue shale & Anhydrite
1040	1090	50	Anhydrite
1090	1205	115	Salt
1205	1400	195	Broken brown lime & Anhydrite
1400	1410	10	Grey lime
1410	1450	40	Broken lime
1450	1579	129	Salt

RECEIVED

NOV 18 1976

O. C. C.  
 ANTENNA OFFICE

FORMATION RECORD—CONFIDENTIAL





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

LAND COMMISSIONER  
PHIL R. LUCERO  
January 18, 1977



STATE GEOLOGIST  
EMERY C. ARNOLD

Mr. Thornton Hopper  
Box 121  
Mentone, Texas 79754

Re: CASE NO. 5823  
ORDER NO. R-5348

Applicant:

Thornton Hopper

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	x
Aztec OCC	

Other



OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

February 25, 1977

Mr. Thornton Hopper  
P. O. Box 121  
Mentone, Texas 79754

Re: Bradley Federal Salt Water  
Disposal Well No. 6-I, Section 11,  
T-24-S, R-26-E, Black River-  
Delaware Pool, Eddy County, New  
Mexico

Dear Mr. Hopper:

By your letter of February 11, 1977, you requested an increase in the authorized surface injection pressure for the subject well from 400 psi to 800 psi. This matter was discussed by the Commission staff and, at this time, considering the relatively short length of good cement bonding at the base of the pipe and the lack of injection experience in this pool, the pressure limit will not be increased.

It is suggested that if high injection pressure problems are anticipated, you may wish to drill some additional section before commencing injection operations. An addition of from 50 to 100 feet of open hole section might well be sufficient to keep pressures within the limit prescribed.

Very truly yours,

R. L. STAMETS  
Technical Support Chief

RLS/dr

cc: Bill Gressett  
Case file 5823

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. 5823  
Order No. R-5348

APPLICATION OF THORNTON HOPPER  
FOR SALT WATER DISPOSAL, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 15, 1976, at Santa Fe, New Mexico, before Examiner, Richard L. Stamets.

NOW, on this 17th day of January, 1977, 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, Thornton Hopper, is the owner and operator of the Bradley Federal Well No. 6, located in Unit I of Section 11, Township 24 South, Range 26 East, NMPM, Black River-Delaware Pool, Eddy County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Delaware formation, with injection into the open-hole interval from approximately 1987 feet to 2000 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 1950 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.

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Case No. 5823  
Order No. R-5348

(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 400 psi.

(6) That an administrative procedure should be established whereby the Secretary-Director of the Commission may authorize higher wellhead injection pressures without notice and hearing.

(7) That prior to injection of water into said Bradley Federal Well No. 6 the applicant should verify the adequacy of cement around the production casing by means of a cement bond log, and perform remedial work as required.

(8) That the operator should notify the supervisor of the Artesia district office of the Commission of the date and time of the running of the cement bond log and installation of disposal equipment so that the same may be inspected.

(9) 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.

(10) 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, Thornton Hopper, is hereby authorized to utilize his Bradley Federal Well No. 6, located in Unit I of Section 11, Township 24 South, Range 26 East, NMPM, Black River-Delaware Pool, Eddy County, New Mexico, to dispose of produced salt water into the Delaware formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 1950 feet, with injection into the open-hole interval from approximately 1987 feet to 2000 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; 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; and that the casing-casing annulus shall be equipped with a riser to facilitate periodic testing of the bradenhead for pressure or fluid production.

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Case No. 5823

Order No. R-5348

(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 400 psi.

(3) That the Secretary-Director of the Commission may administratively authorize a pressure limitation in excess of 400 psi upon a showing by the operator that such higher pressure will not result in fracturing the confining strata.

(4) That before said Bradley Federal Well No. 6 in said Section 11 may be converted to injection the operator shall cause a cement bond log to be run on the 7-inch casing therein; that he shall cause one copy of such bond log to be furnished to the supervisor of the Commission's Artesia district office; and that he shall, under the direction of such supervisor, recement such casing should the bond log reveal the same to be inadequately cemented.

(5) That the operator shall notify the supervisor of the Artesia district office of the Commission of the date and time of the running of the cement bond log and the installation of disposal equipment so that the same may be inspected.

(6) That the operator shall immediately notify the supervisor of the Commission's Artesia district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well or any other evidence of fluid migration from the injection zone, and shall take such steps as may be timely and necessary to correct such failure or leakage.

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

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

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Case No. 5823  
Order No. R-5348

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Phil R. Lucero*

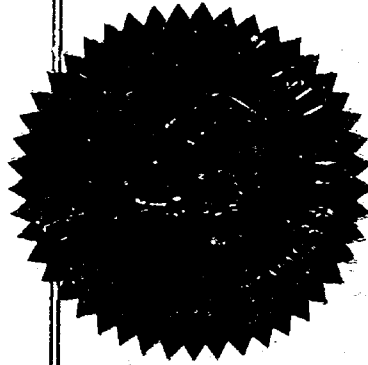
PHIL R. LUCERO, Chairman

*Emery C. Arnold*

EMERY C. ARNOLD, Member

*Joe D. Ramey*

JOE D. RAMEY, Member & Secretary



S E A L

dr/

Form C-108  
Revised 3-1-68  
NOV 15 1976  
RECEIVED

NEW MEXICO OIL CONSERVATION COMMISSION  
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR <b>Thornton Hopper</b>		ADDRESS <b>Box 121, Mentone, Texas 79754</b>	
LEASE NAME <b>Bradley Federal</b>	WELL NO. <b>6</b>	FIELD <b>Black River (Delaware)</b>	COUNTY <b>Eddy</b>
LOCATION UNIT LETTER <b>I</b> WELL IS LOCATED <b>NE 1/4, SE 1/4</b> FEET FROM THE <b>E</b> LINE AND <b>1980</b> FEET FROM THE <b>S</b> LINE, SECTION <b>11</b> TOWNSHIP <b>24S</b> RANGE <b>26E</b> NMFM. <b>Eddy</b>			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING					
INTERMEDIATE					
LONG STRING	<b>7"</b>	<b>1987</b>	<b>50</b>	<b>1316</b>	<b>Calculation</b>
TUBING		NAME, MODEL AND DEPTH OF TUBING PACKER			
<b>2 3/8 O.D. 1950'</b>		<b>Baker-Model D (Tension) - 1950'</b>			
NAME OF PROPOSED INJECTION FORMATION			TOP OF FORMATION		BOTTOM OF FORMATION
<b>Delaware Sand</b>			<b>1966</b>		<b>----</b>
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLE?		PROPOSED INTERVAL(S) OF INJECTION	
<b>Tubing</b>		<b>open hole</b>		<b>1987-2000</b>	
IS THIS A NEW WELL DRILLED FOR DISPOSAL?		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?			HAS WELL EVER BEEN PERFORMED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?
<b>no</b>		<b>Producer-completed March, 1949</b>			<b>no</b>
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					
<b>None</b>					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
<b>unknown - above 1000'</b>		<b>none</b>		<b>unknown</b>	
ANTICIPATED DAILY INJECTION VOLUME (BBL/S.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	<b>40</b>	<b>200</b>	<b>closed</b>	<b>pressure</b>	<b>500</b>
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -			WATER TO BE DISPOSED OF		NATURAL WATER IN DISPOSAL ZONE
			<b>yes</b>		<b>yes</b>
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)			ARE WATER ANALYSES ATTACHED?		
<b>Federal-Surface owner</b>			<b>yes</b>		
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL					
<b>none except applicant</b>					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
		<b>yes</b>		<b>yes</b>	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA		ELECTRICAL LOG	
		<b>yes</b>		<b>no-not available</b>	
				<b>yes</b>	

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

*Thornton Hopper*  
(Signature)
**operator**  
(Title)
**11-10-76**  
(Date)

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

527-3596

SAMPLE NO. \_\_\_\_\_

**THE WESTERN COMPANY**  
Service Laboratory

**WATER ANALYSIS**

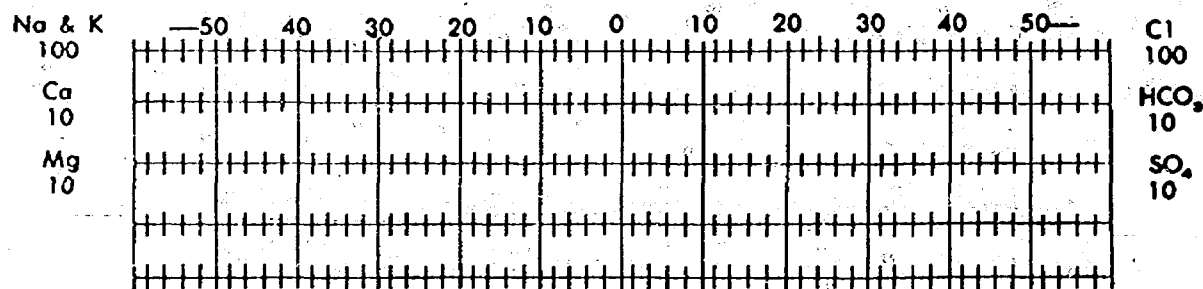
Operator	Thornton Hopper	Date Sampled	3-7-69
Well	Bradley Federal	Date Received	3-11-69
Field	Black River	Submitted by	Kermit District
Formation	Delaware	Worked by	Jones
Depth	1850'	Other Description	Pit Sample
County	Eddy, N. M.		

**CHEMICAL DETERMINATIONS**

Density	1.150 @ 70° F	pH	8.6
Iron	No Trace	Hydrogen Sulfide	Very Strong Trace
Sodium and Potassium	77,200 ppm	Bicarbonate	573 ppm
Calcium	3,100 ppm	Sulfate	3,400 ppm
Magnesium	680 ppm	Phosphate	ppm
Chloride	123,600 ppm	as Sodium Chloride	ppm

Remarks: \_\_\_\_\_

for Stiff type plot (in meq./l.)



Per \_\_\_\_\_

DIAGRAMMATIC SKETCH OF:

PROPOSED S.W.D. WELL

THORNTON HOPPER - BRADLEY FEDERAL LSE.  
WELL #6 - NE 1/4 Sec. 11, T24S, R26E,  
EDDY COUNTY, NEW MEX.

ANHYDRITE  
&  
DOLOMITE

DELAWARE  
SAND

TOP CIMINI @ 1,316'

2" TBG.

BAKER MODEL D PACKER  
SET @ 1,950'

TOP DELAWARE SAND - 1,966'

BOTTOM 7" CSG. 1,987'

T.D. 2,000'



PAGE 4

WELL NO. 6 SEC. 11 T. 24 N. 26 E.

[illegible]

W. H. Porter  
March 3, 1949

Pyre lat	1987'	(2")
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**PAGE 2**

**Latvian Advocate Print**[illegible]

# SAMPLE DETERMINATIONS

Page 2

COMPANY *Shappell Oil Co.* FARM *Bradley* WELL NO. *6* SEC. *11* T. *24* S. R. *26*  
JOSE ADVOCATE PRINT

FORMATION		DOLOMITE		LIMESTONE		ANHYDRITE		SALT		SHALE		SAND		MISC. REMARKS
FROM	TO	%	LITH & COLOR	%	LITH & COLOR	%	LITH & COLOR	%	COLOR	%	COLOR	%	LITH & COLOR	
1445						10	gray & wh	90	wh					
	60						granular		clear					
	72					70	"	100	"					
	89							100	"					
	1505							100	"					
1505	20					70	"	100	"					
	40							100	"					Te. Refract
	55							90	"					Do "
	65							80	"					20 "
	75						wh							Te "
	82					70	gran	30	"					
	98					100	ditto		gray					
	1605					100	"	"	"					
1605	20		gray soft			30	"	"	"					
	28		Te "			100	"	"	ST PK					
	35					100	"	"	"					
	40		gran			70	"	"	"					
	50		dense			100	"	"	"					
	60		10 "			70	"	"	"					
	60		gray			70	wh							
	70		8 Lt Brown			30	"	"	"					
	70		dense Haline											
1690	95		Andite			60	"	"	"					
	75		90			70	"	"	"					
	95		100			60	"	"	"					
1705	15		60			40	"	"	"					
	25		70			30	"	"	"					
	35		70			30	"	"	"					
	45		80			20	"	"	"					

## AMPLE DETERMINATIONS

COMPANY Sheppard Oil Co

COUNTY Edgely STATE N.Y.

FARM Appleton WELL NO. 6

Sec. 11 Twp. 24 S., Rge. 23

Location 5th Ave 34th St

Commenced: Oct 11, 1948

Completed \_\_\_\_\_

Elevation 723.5

1. P. ~~SECRET~~

Sample Determinations by W. A. F. A. S. Geologist

Artesia, New Mexico, Marate 1962 Page 1

[illegible]

# BLACK RIVER Field

R. 26 E., T. 24 S.  
Eddy County, New Mexico

SHAPPELL OIL CO

L.C. 064200

DATUM FIGURES: TOP DELAWARE SAND

R.A. VVRIGHT

L.C. 064200A

SHAPPELL OIL CO  
L.C. 064200

SHAPPELL OIL CO  
PROPOSED SALT  
WATER DISPOSAL  
WELL

R.A. VVRIGHT  
L.C. 064200A

SHAPPELL

M.G. LIVERMORE

N.M. 04885  
+1376

N.M.  
04885

THORNTON HODDER - BRADLEY Fed.  
L. 5c.

+1342

+1317  
+1310  
+1319  
+1318  
+1312

SHAPPELL  
L.C. 064200

T.P.C. OIL CO.

L.C. 064200

+1307  
+1257

T.P.C. OIL  
N.M. 04874

+1322

T.P.C. OIL

T.P.C. OIL

N.M. 04874

HARGRAVE  
N.M. 09392

J.B. WHITENURST  
L.C. 068317

T.P.C. OIL

+1302

HARGRAVE  
+1290

HARGRAVE  
N.M. 09392

A. MARTIN  
+1261 (WATER)

(SALLY SA)

TENN PROD.

22

23

24

GULF  
+1285

3226  
COEE

A.J. CRAWFORD

3250

D. SMITH

3225

27

26

25

Union #2  
MERRIN SAND

Union #1  
HODDER



BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
December 15, 1976

EXAMINER HEARING

IN THE MATTER OF:

Application of Thornton Hopper for salt ) CASE  
water disposal, Eddy County, ) 5823  
New Mexico. )

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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

**sid morrish reporting service**

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

I N D E X

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Page

ERNEST THORNTON HOPPER

Direct Examination by Mr. Stamets

3

W. A. GRESSETT

Direct Examination by Mr. Stamets

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EXHIBIT INDEX

Offered      Admitted

Applicant's Exhibit One, Plat

14

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**sid morrish reporting service**

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

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

1 MR. STAMETS: We will call next Case 5823.

2 MS. TESCHENDORF: Case 5823, application of Thornton  
 3 Hopper for salt water disposal, Eddy County, New Mexico.

4 MR. STAMETS: Would you identify yourself, sir, for  
 5 the record?

6 MR. HOPPER: I'm Ernest Thornton Hopper. I reside  
 7 in Mentone, Texas and I'm the owner of an assignment to three  
 8 thousand feet depth of the Black River-Delaware Pool, Eddy  
 9 County.

10 MR. STAMETS: Mr. Hopper, would you please stand and  
 11 be sworn at this time?

12 (THEREUPON, the witness was duly sworn.)

13  
 14 ERNEST THORNTON HOPPER  
 15 called as a witness, having been first duly sworn, was  
 16 examined and testified as follows:

17  
 18 DIRECT EXAMINATION

19 BY MR. STAMETS:

20 Q. Mr. Hopper, are you an operator of oil and gas  
 21 properties in New Mexico and other states?

22 A. I'm the operator of this particular property here  
 23 in New Mexico and I'm the operator of one barrel of production  
 24 a day in Loving County in Texas.

25 Q. How long have you been active in oil and gas operations?



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1 A I'm a graduate of Texas Tech in 1950 with a degree  
2 in petroleum engineering and I have been active in the oil  
3 industry ever since that time through different phases of  
4 roustabout, well servicing, engineering and I have been  
5 operating a contract pumping business or lease operations  
6 service for the past eighteen years for various independents  
7 or majors at one time or another.

8 MR. STAMETS: The Examiner considers your qualifica-  
9 tions acceptable in this case.

10 Q (Mr. Stamets continuing.) Mr. Hopper, what are  
11 you seeking specifically?

12 A This lease isn't anything large or anything, it does  
13 have commercial possibilities. This lease was purchased by  
14 me in 1961. It had to be shut in because of the disposal of  
15 water in '69 or '70, something like that because it wasn't  
16 economically feasible at that time to set up a disposal system.  
17 The price of oil just didn't make it feasible.

18 Q Excuse me, sir, by this lease you are referring to  
19 the Bradley lease in the south half of Section 11, 24 South,  
20 26 East?

21 A Right, that is correct.

22 Q All right, sir, go ahead.

23 A These constitute the only wells in this field. The  
24 wells were drilled in '48 to '50. They are commercial. I got  
25 permission from the Oil and Gas Commission to run some tests on

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1 them the summer before last and from these tests I have there  
2 four producing wells at the present time. Those wells should  
3 be able to make from ten to possibly fifteen or twenty barrels  
4 per day, you know, with some workovers or something of that  
5 nature done to them and the amount of water should -- now,  
6 to begin with as in the Delaware since they have been shut in  
7 our water will probably run as it was indicated by these  
8 tests, it would probably run forty to fifty barrels per day  
9 per well for a period of time until we get them pumped out.  
10 They should at that time only make probably on an average of  
11 ten or twelve barrels of water per well per day.

12 It isn't feasible to truck this water out, again  
13 economics. I don't even know where the nearest disposal well  
14 is that the water could be trucked to and so I'm sure that the  
15 cost would be prohibitive.

16 There is potential here in this amount and since  
17 there are no other wells here, I have indications from two  
18 or three different sources that if the lease should turn out  
19 to do what it should that they might be interested in, you  
20 know, maybe drilling further wells, you know, at this depth in  
21 this area or on this particular lease. So I think it has a  
22 potential for me and for, well, the State of New Mexico, for  
23 anyone for a profitable venture, and that's the only problem,  
24 being able to dispose of my water.

25 Q Now, Mr. Hopper, which well do you propose to put

1 this water into?

2 A. Oh, it's Well No. 6.

3 Q. It's located in the --

4 A. The southeast quarter of Section 11.

5 Q. It should be the northeast of the southeast, what  
6 we would refer to as Unit letter I, I believe?

7 A. Well, now, according to this deal here, it was  
8 Unit letter D.

9 Q. That would be the northwest of the northwest and I  
10 don't believe that's correct. There must be an error.

11 A. Yes, it very well may be. My records are almost  
12 nil, you know, on these wells. I have a little bit on each  
13 well but there is nothing extensive and so even things of that  
14 nature, there may be errors anywhere in this deal because I  
15 have just taken them from those reports and what small material  
16 that I have.

17 Q. Mr. Hopper, I'm going to refer to Form C-108 which  
18 you submitted in your application and it is dated 11-10-76,  
19 so whatever I say from this point will be referring to that.  
20 On there you indicate that seven inch casing was set at  
21 nineteen hundred and eighty-seven feet with fifty sacks of  
22 cement and then the top of the cement is calculated at thirteen,  
23 sixteen. What records do you have that this was actually  
24 done?

25 A. At various -- not this -- I have a copy of -- you

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1 mean, now, in reference this amount of cement was used?

2 Q Right.

3 A If I can find it. In some of the records -- it  
4 doesn't indicate the amount of cement on this particular --  
5 this is the geologist's sample determination that I included  
6 a copy of in this deal. On the back of that sheet it shows  
7 that the pipe was set at nineteen, eighty-seven but in one of  
8 the other forms there I found that in these other wells --  
9 let's put it this way, in all of the other wells where it  
10 showed a frac sheet of where they had a small frac job done on  
11 them in '54, '56, each one of those wells -- some of them  
12 showed fifty sacks, some of them showed a hundred and fifty  
13 sacks. This again is just sort of a supposition on my part  
14 that at least fifty sacks, the minimum, was put in this well.  
15 I do not have anything conclusive because this is the entire  
16 amount of my records on this particular well is the data off  
17 of this sample determination.

18 Now, some of the others, this one shows to be  
19 temporarily abandoned. The top of the cement plug is at  
20 eighteen hundred because we ran a well servicing rig, we  
21 used a Depthometer and ran a Syncobar in there and the top of  
22 that cement plug is at eighteen hundred.

23 And on the other wells around, there are two other  
24 TA'ed wells there and I think -- in other words, I intend if  
25 I can get this lease going to drill those wells out and try to

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1 make producers out of them. I have a little more indications  
2 on these reports of what happened to those wells and they  
3 look commercial, No. 3 and No. 7.

4 But, again, now, I don't have anything excepting  
5 a supposition on my part and let me ask you a question. Are  
6 there any records or Mr. Gressett here might could tell me,  
7 from away back then, are there any records on file in New Mexico?  
8 Now, in some of my deals, these same sample sheets here, on  
9 these other wells it says that a hundred foot plug was set  
10 on a given date to temporarily abandon this well and underneath  
11 it says, this was done.

12 Are there forms or records that go back far enough  
13 in you people's office to indicate something of that nature,  
14 where we could find?

15 MR. STAMETS: Mr. Gressett, would you like to answer  
16 that question?

17 MR. GRESSETT: There are some reports in the USGS  
18 office in Artesia.

19 A. Well, I didn't, you know, I just -- you know, these  
20 wells being drilled so long ago and Chappelle Oil Company,  
21 whose name appears on all of this, they were supposed to have  
22 sent me copies of all this and why they didn't send, now why  
23 they didn't send me the originals but they just copied these  
24 and some of the copies have faded out before I could copy them  
25 again.

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1 Q (Mr. Stamets continuing.) Let me ask you a question  
2 now, Mr. Hopper. Could the top of the cement and the quality  
3 of the bond be determined by running a cement bond log in  
4 this well?

5 A Now, I don't know. I'm not familiar enough with a  
6 cement bond log. All of the cement bond logs I thought had  
7 to be run within a certain given period of time after you had  
8 set your casing string to be effective.

9 Q This is a log that you are not familiar with?

10 A That's right. In other words, a few years ago before  
11 I even purchased this lease, the cement bond logs that  
12 Halliburton used to run, Halliburton cement jobs had to be  
13 run within twenty-four hours or they told us that the results  
14 weren't reliable enough. In other words, they are temperature  
15 surveys. The temperature surveys, if they weren't run within  
16 twenty-four hours they weren't effective.

17 Q All right, let's go on from this point then. Looking  
18 down here, you intend to set two-and-three-eighths tubing to  
19 nineteen hundred and fifty feet on packer at that point?

20 A Yes.

21 Q If required, would that tubing be plastic coated?

22 A Yes.

23 Q Okay. Do you intend to determine any leakage of  
24 the tubing or around the packer by loading the annulus in  
25 this well with an inhibited fluid or putting a gauge on it or

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1 leaving it open so that anything that would leak around there  
2 would be readily apparent at the surface?

3 A. Yes. Now, this -- I only have this one copy of a  
4 letter which I wrote to the USGS, Department of Interior,  
5 explaining these things that you are talking about here. Do  
6 you want me to read from it?

7 Q. Well, if you will just tell me which of those you  
8 intend to do.

9 A. I intend to run a new, at least tested tubing,  
10 plastic coated tubing, I do intend to put an inhibitor, an  
11 amino base inhibitor above the packer and then, of course, the  
12 preference of the Commission as to whether we leave it open or  
13 use a pressure gauge. I would prefer to use a pressure gauge  
14 on the well rather than leaving it open, you know, to the  
15 air, is to maintain a good pressure gauge on the casing there  
16 at all times so that the pressure could be checked or anything  
17 like that.

18 Q. Now, Mr. Hopper, you will be returning only produced  
19 water from this lease to the Delaware?

20 A. Yes, that is correct.

21 Q. And that will be going into the same formation that  
22 it is coming out of?

23 A. Yes.

24 Q. Do you know of any fresh water in the area?

25 A. There is some farming activity about a mile, there

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1 is a well something like a mile or so to the south of this  
2 well, something probably like about a mile. Mr. Hood owns  
3 the property. He indicated that their well was a hundred and  
4 sixty feet deep.

5 Q So there are indications that there is fresh water  
6 in the area?

7 A Yes, that is correct.

8 Q How often will you have somebody in the field to  
9 check the operation of your wells and this salt water disposal  
10 well?

11 A Well, I will probably do most of this myself. It will  
12 either be on a daily basis or -- what my intentions are is for  
13 me to probably have to go twice a week. I even discussed it  
14 to a small extent with Mr. Hood that maybe he could go by and  
15 just check to see if the wells are running and everything was  
16 operating on a daily basis, you know, and anything that was the  
17 matter he could give me a call and rectify it or something  
18 like that. He isn't familiar at all with any type of oil  
19 operations but the way I intend to set this up, I am operating  
20 some other leases around. I would set up a five hundred  
21 barrel tank for water storage and I'll have to use -- the  
22 use of electricity is prohibitive, the cost, I have already  
23 talked to the power companies, but I'll use a gas engine,  
24 the gas volume is very small but by conserving it all I can use  
25 a gas engine on the pumping wells and also on my pump I will

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1 start it probably at two or three day intervals and use shut-  
2 down switches and I intend to use, you know, high and low  
3 pressure shut-down switches too which, you know, if you should  
4 have a failure in the tubing or plug, you know, it will still  
5 shut down and then you use a low-level shut-down switch, you  
6 know, after you have started it and it's pumped out.

7 Q So you will do the injection, more or less, manually,  
8 there will be no automatic feature for that?

9 A No, in other words, I will have to start a gas  
10 engine and pump the water out and then use an automatic shut  
11 down, that is correct. And it will probably as indicated on  
12 this report from my experience on some other leases, if this  
13 well probably wasn't ever produced extensively so it will have  
14 to be pumped in, probably at an average pressure of about five  
15 hundred pounds. It will start probably at three to four  
16 hundred and it will build up over a period of time to probably  
17 five hundred or so.

18 Q This gets us into another area. In recent orders  
19 permitting injection, the Commission has placed a limit on  
20 the pressure that can be used such that the bottom-hole  
21 pressure does not exceed seven-tenths of a pound per foot of  
22 depth and referring then to the water analysis which you have  
23 furnished us with the Form C-108 and determining the weight of  
24 that water at the top of the injection zone, I come up with a  
25 surface pressure limitation of four hundred pounds per square

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1 inch. I take it at this time that you don't know if that will  
2 be sufficient pressure or not?

3 A. Well, actually I couldn't answer that positively. I  
4 wouldn't know for sure.

5 Q. Too, Mr. Hopper, we have usually included in the  
6 administrative procedure whereby the operator requires more  
7 pressure, he can furnish the Director of the Commission with  
8 proof that this higher pressure is not going to result in this  
9 water escaping from the injection zone. For example, by  
10 supplying the Director with step-rate tests that show that the  
11 fracture pressure is not exceeded by the higher injection.  
12 This is simply where you inject a certain volume at a pressure  
13 for a period of time and then you inject another volume at  
14 another pressure and keep stepping it up until you see a break  
15 in the line. Would you be willing to abide by such pressure  
16 limitations and with the provision for administrative approval  
17 if higher pressures are needed?

18 A. Yes.

19 Q. And you will notify the District Office of the  
20 Commission any time that there is any spillage or leakage of  
21 this injected water?

22 A. Oh, yes.

23 Q. Mr. Hopper, you have given the Commission a plat  
24 here of the area. It looks like it covers about a township on  
25 each side of the lease in question, would you like us to mark

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1 that as Exhibit Number One?

2 A. Yes, please.

3 Q. That will be marked as Exhibit Number One and will  
4 be admitted into the record.

5 (THEREUPON, Applicant's Exhibit One was  
6 marked and admitted into evidence.)

7 MR. STAMETS: Are there other questions of Mr. Hopper?  
8 Mr. Gressett.

9 MR. GRESSETT: Did I understand you to say that this  
10 would strictly be a lease disposal and it is not to be  
11 commercial disposal?

12 MR. HOPPER: Oh, no. This is just for my use, you  
13 know, so that I can produce this lease. I'm not interested  
14 in getting into that business.

15 MR. GRESSETT: Okay.

16 MR. STAMETS: The advertisement in this case appears  
17 to have been in error in that the unit location was Unit D  
18 instead of Unit I. However, that does not appear to be a  
19 fatal error in this case and we will amend the application to  
20 reflect the proper unit letter.

21 Anything further? Do you have any questions, Mr.  
22 Hopper, and do you have anything further?

23 MR. HOPPER: I would like to ask this question: In  
24 the event, we'll say this excessive pressure is determined on,  
25 you know, what you figured it, are waterfloods bound to this

1 same amount of pressure at point seven per?

2 MR. STAMETS: This has been in all recent injection  
3 orders, be they waterflood or salt water disposal.

4 MR. HOPPER: Yes, okay. Well, I just wondered. I've  
5 thought about this, in other places it isn't, a little farther  
6 south, the Delaware is all I'm familiar with, the production  
7 I've spent my life in. Ordinarily the pressures, now, again  
8 we are talking about surface pressures and on that basis that  
9 they run sometimes -- in fact, they will use after a period of  
10 time on the twenty-seven hundred foot wells in Texas in the  
11 Delaware formation, our surface pressures usually run around a  
12 thousand pounds after a period of time. They will get to a  
13 thousand pounds and they will just sustain those at that level.  
14 You can acidize sometimes and drop them a couple hundred  
15 pounds but that's why I'm not sure that these figures in this  
16 particular formation are realistic.

17 MR. STAMETS: Mr. Hopper, you might be correct. In  
18 the way of background the Federal government has passed the  
19 Clean Drinking Water Act and the Environmental Protection  
20 Agency has developed rules and regulations which the states will  
21 be called upon to enforce when these are finalized and we have  
22 been attempting in recent applications, recent orders, to  
23 assure that we permit the operators the opportunity to be in  
24 compliance with these new rules and regulations and not make  
25 new investments on the basis of operations which might be

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1 prohibited by these upcoming rules and regulations.

2 Mr. Hopper, I take it from your response you don't  
3 have a lot of records on the wells within a half a mile of  
4 this injection well as far as casing, plugging and so on?

5 MR. HOPPER: No, I do not. You are referring to  
6 these wells that appear on the map here as being plugged and  
7 abandoned?

8 MR. STAMETS: Right.

9 MR. HOPPER: No, to my knowledge -- since I have  
10 held this assignment there have been no wells plugged in this  
11 area, at least that I had anything to do with. All of the  
12 plugged P&A's were done before I became owner of the lease.

13 MR. STAMETS: Mr. Hopper, one of the things which is  
14 required by the Federal regulations is that we have a complete  
15 record on the casing and cementing, plugging, of every well  
16 within a half a mile of any injection well and so I believe  
17 you need to make every effort within the next thirty days to  
18 obtain such information as there is available to the Commission  
19 office in Artesia, the U. S. Geological Survey office, from  
20 previous owners to acquire these records, whatever is available,  
21 and submit them to the Commission.

22 MR. HOPPER: Okay.

23 MR. STAMETS: Anything further, Mr. Hopper? You  
24 may be excused.

25 (THEREUPON, the witness was excused.)

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1 MR. STAMETS: At this time I would like to ask some  
2 questions of Mr. Gressett and let the record reflect that  
3 he was sworn in a previous case, qualified in a previous case  
4 and is still sworn and qualified in this case.

5  
6 W. A. GRESSETT

7 called as a witness, having been previously sworn, was  
8 examined and testified as follows:

9  
10 DIRECT EXAMINATION

11 BY MR. STAMETS:

12 Q. Mr. Gressett, In your opinion would a bond log, a  
13 cement bond log, on this well tell us where the top of the  
14 cement is and whether or not there was good bonding?

15 A. Yes, it would.

16 Q. Do you feel that in light of the lack of records  
17 in this area that we should have this kind of a test before  
18 any significant volumes of water are injected into this well?

19 A. Yes, I think we should have.

20 MR. STAMETS: Are there any questions of Mr. Gressett?

21 MR. HOPPER: What, approximately, in the way of  
22 costs, or do you know what relative costs we're talking about  
23 for one of these logs?

24 MR. GRESSETT: I sure don't know the cost of the  
25 bond log.

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1 MR. HOPPER: May I ask this: what service companies  
2 perform them?

3 MR. GRESSETT: Schlumberger, Welex, Roy Vann or Vann  
4 Tool Company. They are in Artesia.

5 MR. HOPPER: Okay.

6 MR. GRESSETT: Most all of the logging companies.

7 MR. HOPPER: All of the logging companies?

8 MR. GRESSETT: Most of them.

9 MR. HOPPER: Well, they are probably relative to  
10 logging, in that range?

11 MR. GRESSETT: I would think so, yes.

12 MR. HOPPER: In other words, it will probably run  
13 two thousand dollars. This well is nineteen hundred feet  
14 deep -- from one to two thousand dollars.

15 Well, the reason I'm wondering, of course, and that's  
16 the reason I'm up here today myself, you know, instead of  
17 having a lawyer, it's economics and, you know, I think that  
18 there is some money to be made and things like that in this  
19 particular nature but if the costs get too high, now, I have  
20 already borrowed the money so I have put off all of these  
21 things until this time because, say, like a year getting this  
22 money borrowed because with all respect to some of these  
23 attorneys in here, six months for all of them to get the paper  
24 work done that the bank would okay and I have borrowed enough  
25 money but if these additional expenses run too high then again

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1 I'm back into the proposition of being -- how much time  
2 allowance can I have for getting these things done? Do we  
3 have a given length of time, ninety day, a hundred and twenty  
4 days or are we less than that that I have to get these things  
5 done?

6 MR. STAMETS: Let's go off the record a minute.

7 (THEREUPON, a discussion was held off  
8 the record.)

9 MR. STAMETS: Are there any questions of either of  
10 the witnesses? They are both excused.

11 (THEREUPON, the witnesses were excused.)

12 MR. STAMETS: Does anybody have anything further in  
13 this case? We will take the case under advisement.

14  
15  
16  
17 I do hereby certify that the foregoing is  
18 a complete record of the proceedings in  
19 the Examiner hearing of Case No. ....  
heard by me on....., 19.....

20 ....., Examiner  
New Mexico Oil Conservation Commission  
21  
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25


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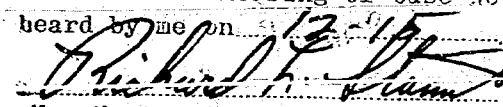
REPORTER'S CERTIFICATE

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. 5823  
heard by me on 12-15, 1976  
, Examiner  
New Mexico Oil Conservation Commission

R. L. STAMETS

7.0' limit - 1986

Weight of water

Spec qty 1.150 = .4982  
per foot

.7- .4982 = .2018 x 1987

= 401 psi surf press

Load gauge

Levee open

Report leaks

Limit of by

Notify of leaks

Dockets Nos. 1-77 and 2-77 are tentatively set for hearing on January 5 and 19, 1977. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - DECEMBER 15, 1976

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Kutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for January, 1977, from seventeen prorated pools in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico.
- (2) Consideration of the allowable production of gas for January, 1977, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 5796: (Continued from November 10, 1976, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Hixon Development Company, National Surety Corporation, and all other interested parties to appear and show cause why the Central Bisti Unit Wells Nos. 41, 46, 47, 49 and 50 located in Units D, I, K, M, and O, respectively, of Section 16, Township 25 North, Range 12 West, Bisti-Lower Gallup Pool, San Juan County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5815: Application of Mark Production Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NW/4 SE/4 of Section 1, Township 18 South, Range 26 East, Red Lake-San Andres Pool, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. 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 5816: Application of Texas Oil & Gas Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well location of its Huber Federal Well No. 1 to be drilled 1,087 feet from the North line and 2280 feet from the East line of Section 27, Township 23 South, Range 22 East, Eddy County, New Mexico, the N/2 of said Section 27 to be dedicated to the well.

CASE 5820: Application of Texas Oil & Gas Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the W/2 of Section 4, Township 22 South, Range 22 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. 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 5817: Application of Read & Stevens, Inc., for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well location of its W. R. State Comm. Well No. 1 to be drilled 660 feet from the South line and 990 feet from the East line of Section 6, Township 21 South, Range 27 East, Burton Flat-Morrow Gas Pool, Eddy County, New Mexico, Lots 9, 10, 15, and 16, and the SE/4 of said Section 6 to be dedicated to the well.

CASE 5818: Application of Union Oil Company of California for the reinstatement of allowable, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks reinstatement of oil allowable for its Tracy Well No. 1 located in Unit C of Section 10, Township 22 South, Range 27 East, Esperanza-Delaware Pool, Eddy County, New Mexico.

CASE 5819: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Scurlock Oil Company to appear and show cause why it should not be found in violation of Rule 801, Commission Rules and Regulations, for purchasing, acquiring, transporting or handling of crude petroleum oil produced in excess of the allowable by Union Oil Company from its California Tracy Lease, Esperanza-Delaware Pool, Eddy County, New Mexico.

CASE 5823: Application of Thornton Hopper for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation through the open-hole interval from 1937 feet to 2000 feet of his Bradley Federal Well No. 6, located in Unit D of Section 11, Township 24 South, Range 26 East, Black River-Delaware Pool, Eddy County, New Mexico.

DEC 29 1976

XL Pumping Service

CONSERVATION COMMISSION HOPPER, PETROLEUM ENGINEER, OWNER

P. O. BOX 121 Santa Fe

MENTONE, TEXAS 79754

TELEPHONE: 377-2261 MENTONE  
527-3596 WINK

December 23, 1976

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

Att: Mr. Richard L. Stamets

Re: Thornton Hopper  
Application for SWD  
Black River (Delaware)  
Eddy County, N. Mex.

Dear Sir:

As directed in Examiner Hearing of December 15, 1976, Case #5823, I am inclosing, herewith, the information requested on all wells which have been P&A within a half mile radius of the proposed SWD well, Bradley Federal #6, located in SE/4 of Section 11, Township 24 South, Range 26 East, Eddy County, New Mexico.

There are four of these wells. They are the M. A. Grisham well in NE/4 Sec. 14 drilled in 1937, the Shappell Oil Co. Bradley Federal #9 in SW/4 Sec. 11, drilled in 1949, the Joseph I. O'Neill, Jr. well in NE/4 Sec. 11 drilled in 1958, and the R. A.T. Wright well in NW/4 Sec. 12 drilled in 1954.

The information on the above mentioned wells was obtained from the U. S. G. S. office in Artesia, New Mexico on December 22, 1976. Due to the variation in manner of reporting, I am including different copies of information for each well. I will try to explain each in turn.

The M. A. Grisham well has no details of plugging. The third sheet of material indicates that the well was P&A in March, 1939. However, the first sheet shows no casing pulled from the well, and the cementing record would indicate that the casing strings would be tied together and impossible to pull even if desired. I believe this is evidence of satisfactory P&A.

The single sheet on the Shappell Oil Co. well is self explanatory.

Everything seems in good order on the Joseph I. O'Neill, Jr. well except that no bottom plug was recorded. The second sheet on this well was included because it verifies the material on the first sheet and indicates a 15 sack bottom plug

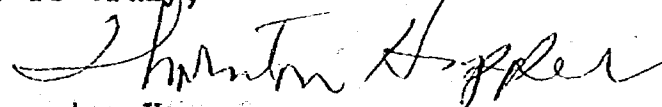
was ordered by Mr. Frost and probably done. I think the second sheet indicates a possible clerical error on sheet number one.

The R. A. T. Wright well plugging record seems to be in order also. However, since the quantities of cement used are somewhat small, I have included the two letters written by personnel of the U. S. G. S. which indicate that they believed the well to be satisfactorily plugged.

I talked with Mr. Gressett in your Artesia District Office yesterday and I will run a cement bonding log on the Bradley Federal #6 as soon as the TA cement plug is drilled out.

I hope this material meets your approval. If anything additional is required please let me know.

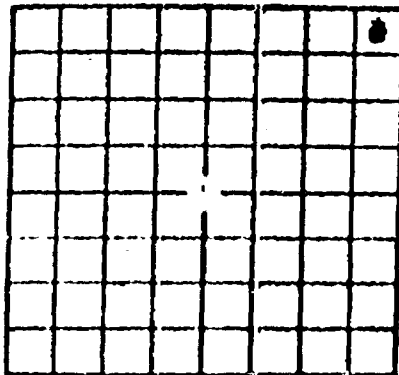
Yours truly,



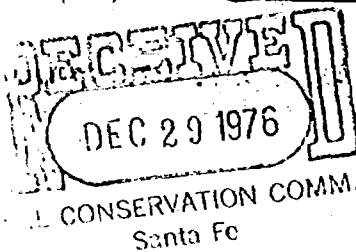
Thornton Hopper

cc: U. S. G. S. Office  
Artesia, New Mexico

N. M. O. C.C. District Office  
Artesia, New Mexico



LOCATE WELL CORRECTLY



U. S. LAND OFFICE **Las Cruces**  
 SERIAL NUMBER **029986**  
 LEASE OR PERMIT TO PROSPECT **Permit**

UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 GEOLOGICAL SURVEY

## LOG OF OIL OR GAS WELL

Company **M. A. Graham** Address **805 Main Bldg., Abilene, Texas**  
 Lessor or Trust **Maria F. Chaytor** Field **Black River** State **New Mexico**  
 Well No. **1** Sec. **14** T. **24S** R. **26E** Meridian **NMPM** County **Eddy**  
 Location **330 ft. N. of N. Line and 330 ft. E. of E. Line of Section 14** Elevation **3255 (LS)**  
(Use this space to show to the land)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed *Hevin R. Smith*Date **1-20, 1938**Title **Agent**

The summary on this page is for the condition of the well at above date.

Commenced drilling **10-28-**, 19**37** Finished drilling **12-10-**, 19**37**

## OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from **0** **1940** to **1942** No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 2, from **Oil** **1947** to **1966** No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 3, from \_\_\_\_\_ to \_\_\_\_\_ No. 6, from \_\_\_\_\_ to \_\_\_\_\_

## IMPORTANT WATER SANDS

No. 1, from **30' to 50' of 10' water** No. 3, from **10' to 20' of water** to \_\_\_\_\_  
 No. 2, from **No. other water** No. 4, from \_\_\_\_\_ to \_\_\_\_\_

## CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Assess	Kind of shoe	Casing pulled from	Performance		Purpose
							From	To	
(OD)				<b>1835</b>					
<b>7"</b>	<b>117</b>	<b>10</b>	<b>Youngstown</b>	<b>1045</b>	<b>None</b>	<b>None</b>			<b>Trag. spring</b>
<b>8"</b>	<b>132</b>	<b>8</b>	<b>Hayes</b>	<b>1045</b>					<b>water.</b>
<b>12"</b>	<b>50</b>	<b>8</b>	<b>Hayes</b>	<b>1045</b>					

## MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud quality	Amount of mud used
(OD)					
<b>7"</b>	<b>1835</b>	<b>100</b>	<b>Water pressure</b>		
<b>8"</b>	<b>1045</b>	<b>50</b>			

MARK

### SHOOTING RECORD

## TOOLS USED

## DATES

Rock pressure, lbs. per sq. in. ....

**EMPLOYEES**

..... Coleman Kerr....., Driller....., Driller

**FORMATION RECORD**

EXAMINATION RECORD - Continued

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION BRANCH

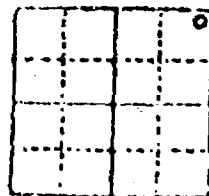
Sec. 14

T. 243

R. 263

N.E.P. Mar.

Ref. No. 2



PUBLIC LAND:

Land office Las Cruces State New MexicoSerial No. 022286 County DoñaPermittee Maria F. Chaytor Field Black RiverOperator M. A. Grisham District DoñaWell No. 2 Subdivision 173 Cor. NE 1/4 173 1/4 Sec.Location 330 feet from N. 1/2 line and 330 feet from E. 1/4 line of 173 1/4 Sec.Drilling approved October 18, 1937 Well elevation 3255 (145) feetDrilling commenced October 29, 1937 Total depth 2320 feetDrilling ceased December 10, 1937 Initial production Flowed 10 bbls oil daily after shot.Completed for production February 20, 1938 Gravity A. P. I. 39Abandonment approved March 22, 1939 Initial R. P. 

## Geologic Formations

## Productive Horizons

Surface

Lowed tested

Name

Depth

Contents

Recent

Permian

Hook Pay

1940-1942  
1947-1966

Gas &amp; Oil

## WELL STATUS

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1937										Drg.	Drg.	Drg.
1938	Drg.	FOI										
1939			I&A									

Revised 1-14-44 as to name of field, formerly Black River. Drilled deeper in Oct. 1938 from old total depth of 1966', later 2302-2320'.



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYLand Office Las CrucesLease No. 045421Unit 1

DEC 29 1976

OIL CONSERVATION COMM.  
Santa Fe

## SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF REDRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE OR OTHER DATA)

April 12, 19 40

Well No. 9 is located 1650 ft. from N line and 2970 ft. from E line of sec. 11  
SE 1/4, NW 1/4, SW 1/4 of 11 24S 16E RMPM  
(1/4 Sec. and 8 1/4 Sec. No.) (Twp) (Range) (Meridian)  
Blacks River Edy New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is ..... ft.

## DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudlogging jobs, cementing points, and all other important proposed work)

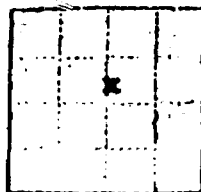
Well having been found to be dry it was plugged by Halliburton method. a string of tubing was run in the hole to the bottom and mud placed there. The tubing was then raised and cement plugs placed in the hole with acqualag in between the plugs. Plugs were placed at the following points;

1st plug - 1957' - 10 sbs cement  
2nd plug - 1752' - 9 sbs cement  
3rd plug - 1177' - 13 sbs cement  
4th. plug - 569' - 9 sbs cement

Hole was then filled with mud and a marker as prescribed, was set in cement. Location was leveled and cleaned up. Total depth of well was 2026'.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company T.O. SHAPPELL OIL CO.Address Box 567,Wichita Falls, TexasBy Harold ShappellTitle Partner



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYLand Office RoswellLease No. MP-064200

Federal "D"

DEC 20 1976

## SUNDRY NOTICES AND REPORTS ON WELLS

ATION COMM.

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT..... <input checked="" type="checkbox"/>
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....
NOTICE OF INTENTION TO ABANDON WELL..... <input checked="" type="checkbox"/>	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

March 3, 1958

Well No. 1 is located 2310 ft. from [N] line and 2310 ft. from [E] line of sec. 11SW/4 of NE/4 Sec 11 24S 2E RPM  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)Black River Eddy New Mexico  
(Field) (County or Subdivision) (State or Territory)The elevation of the derrick floor above sea level is 3291 ft.

## DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate casing joints, casing points, and all other important proposed work)

Mr. Ed Anderson received verbal approval from Mr. John Frost by telephone Feb. 10, 1958, to plug and abandon well after core from 1964' to 2014', recovered 50' - 16' ls, 34' sand, top 4' sand hard and calcareous, all pore, btm 30, homogeneous, all archipus w/all show and salt taste. On February 11, 1958 plugged and abandoned well as follows: Filled hole w/100 mud, 10 sacks cement plug at 1040', 10 sacks cement plug in top of 8-5/8" casing. 4" OD iron pipe marker extending 4' above surface of ground set in cement in top of 8-5/8" casing as per COC of New Mexico Rules and Regulations.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Joseph I. O'Neill, Jr.Address 410 W. Ohio, Midland, TexasBy Roy L. Stanton  
(Roy L. Stanton)Title Production Clerk

OPERATOR Joseph I. O'Neill, Jr. PERMITTEE Shappell & Schickman WELL No. 1-Federal

Field Black River Pool (Ext) 2-10-58 Drilling approved- 1-11-58  
Spudded-

County Eddy

State New Mexico

Sec. 11 T. 21S R. 26E

Subdivision SW SW X NE X

Location 2310/NEE

Serial No. NW 001200

Ref. No. 20 Elev. 2000 L. and S.

Rig Surface Recent

Contractor rotary tools

Casing Geology

8 7/8 - 267 - 300 TA

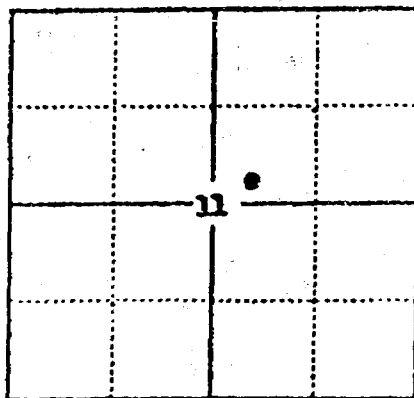
TS 1040

BS 1620

TBL

Proposed casing:  
8 5/8 - 200 - 200 cc surf  
8 5/8 - 263 (Surf) 2-10-58  
5 1/2 - 2100 - 175

Top Del Sand 1980

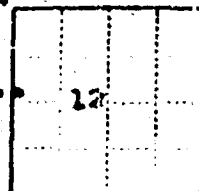


Called 104 from zone per appd.

15 inch plug bottom  
10 1620  
10 1040  
5 1040

Jack Frost

Copy of USGS Record  
Artesian Dist Office  
12-22-76 R. R. R. R.



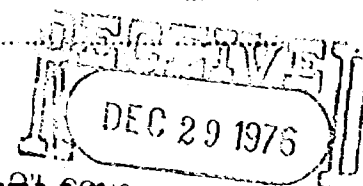
(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office

L.O. 064200-A

Unit



## SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT..... X
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....
NOTICE OF INTENTION TO ABANDON WELL.....	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

JULY 29 1934.

19

Well No. 1 is located 320 ft. from N line and 330 ft. from W line of sec. 12  
SW 1/4 Sec 12 T. 24 S. R. 26 E.  
(N. Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Black River (County or Subdivision) ADD: New Mexico. (State or Territory)

The elevation of the derrick floor above sea level is 3277 ft.

## DETAILS OF WORK

(State names of and expected depths to objective sands; show class, weights, and lengths of proposed casings; indicate casing joints, cementing points, and all other important proposed work)

15 Sacks Cement dumped in bottom.  
Aqual to 1000 ft.  
bridge and 10 sacks cement.  
Aqual to top and 5 sacks cement, pipe marker.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company R.A.T. WrightAddress 303 HornsbyARTISIA...NEW MEXICOBy R.A.T. Wright

Title



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
LAND OFFICE  
Santa Fe, New Mexico

IN REPLY REFER TO:  
L.C. 064200 A

August 12, 1955

J. S. Ward and Son, Inc.,  
101 S. 4th Street  
Artesia, New Mexico

Gentlemen:

A \$5,000 bond executed March 27, 1954, by R. A. Wright as principal and American Employers' Insurance Company as surety was filed in this office to cover oil and gas lease, LC 064200 A.

We have been advised by the Oil and Gas Supervisor that the well drilled on the leased land has been plugged and abandoned satisfactorily, therefore liability on the bond has been terminated as of May 11, 1955, date a certificate was approved.

Very truly yours,

J. A. Delany  
Manager

O&G Supv. (2)  
cc: R. A. Wright  
303 Herreros  
Artesia, N. M.  
Accts.

HLH: mh

RECEIVED  
AUG 19 1955  
U. S. GEOLOGICAL SURVEY  
ARRESTED

ARTESIA



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

P. O. Box 187  
Artesia, New Mexico

May 11, 1955

Mr. R. A. T. Wright  
Hotel Charles  
South First Street  
Artesia, New Mexico

Re: Oil and Gas Lease  
LC 661200-A

Dear Sir:

Your "Subsequent Report of Abandonment" dated July 29, 1954, covering your well No. 1 Wright located in the SW 1/4 NW 1/4, section 12, T. 24 S., R. 26 E., Wildcat Area, Eddy County, New Mexico, is hereby approved.

Very truly yours,

*M. L. Seelinger*  
M. L. Seelinger  
Acting District Engineer

MLS:am

Inspected by John A. Pratt  
May 11, 1955  
Copy to: J. S. Ward & Son  
Artesia, New Mexico

OIL CONSERVATION COMMISSION  
Artisia DISTRICT

OIL CONSERVATION COMMISSION  
BOX 2088  
SANTA FE, NEW MEXICO

DATE 11-24-76

RE: Proposed MC \_\_\_\_\_  
Proposed DHC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD X \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 11-10-76  
for the Thornton Hopper Bradley Federal #6 I 11-24-26  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Set for Hearing - does not qualify for Administrative  
approval - offset by wells completed in Delaware

Yours very truly,

W. A. Gessett

*Talked to Hopper will be set for 12/15/76 2:15 pm*

Form O-108  
Revised 7-1-66

NOV 15 1976

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR <b>Thornton Hopper</b>		ADDRESS <b>Box 121, Mentone, Texas 79754</b>	
LEASE NAME <b>Bradley Federal</b>	WELL NO. <b>6</b>	FIELD <b>Black River (Delaware)</b>	COUNTY <b>Eddy</b>
LOCATION NE $\frac{1}{2}$ , SE $\frac{1}{2}$ UNIT LETTER <b>SI</b> ; WELL IS LOCATED <b>1320</b> FEET FROM THE <b>E</b> LINE AND <b>1980</b> FEET FROM THE <b>S</b> LINE, SECTION <b>11</b> TOWNSHIP <b>24S</b> RANGE <b>26E</b> NMPM. <b>Eddy</b>			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING					
INTERMEDIATE					
LONG STRING	7"	1987	50	1316	Calculation
TUBING	2 3/8 O.D.	1950'	NAME, MODEL AND DEPTH OF TUBING PACKER <b>Baker-Model D (Tension) - 1950'</b>		
NAME OF PROPOSED INJECTION FORMATION <b>Delaware Sand</b>			TOP OF FORMATION <b>1966</b>		BOTTOM OF FORMATION <b>----</b>
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? <b>Tubing</b>		PERFORATIONS OR OPEN HOLES? <b>open hole</b>	PROPOSED INTERVAL(S) OF INJECTION <b>1987-2000</b>		
IS THIS A NEW WELL DRILLED FOR DISPOSAL? <b>no</b>	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? <b>Producer-completed March, 1949</b>			HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? <b>no</b>	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH <b>None</b>					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA <b>unknown - above 1000'</b>		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA <b>none</b>		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA <b>unknown</b>	
ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) <b>40</b>	MINIMUM <b>200</b>	MAXIMUM <b>closed</b>	OPEN OR CLOSED TYPE SYSTEM <b>pressure</b>	IS INJECTION TO BE BY GRAVITY OR PRESSURE? <b>pressure</b>	APPROX. PRESSURE (PSI) <b>500</b>
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -		WATER TO BE DISPOSED OF <b>yes</b>		NATURAL WATER IN DISPOSAL ZONE <b>yes</b>	ARE WATER ANALYSES ATTACHED? <b>yes</b>
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) <b>Federal-Surface owner</b>					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL <b>none except applicant</b>					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER <b>yes</b>		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL <b>yes</b>	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA <b>yes</b>		ELECTRICAL LOG <b>no-not available</b>	DIAGRAMMATIC SKETCH OF WELL <b>yes</b>

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

*Thornton Hopper* operator 11-10-76  
(Signature) (Title) (Date)

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



SAMPLE NO. \_\_\_\_\_

THE WESTERN COMPANY  
Service Laboratory

WATER ANALYSIS

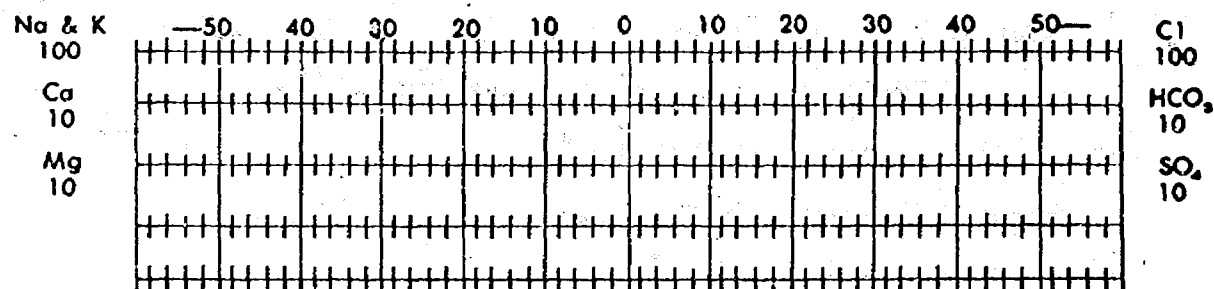
Operator	Thornton Hopper	Date Sampled	3-7-69
Well	Bradley Federal	Date Received	3-11-69
Field	Black River	Submitted by	Kermit District
Formation	Delaware	Worked by	Jones
Depth	1850'	Other Description	Pit Sample
County	Eddy, N. M.		

CHEMICAL DETERMINATIONS

Density	1.150 @ 70° F	pH	8.6
Iron	No Trace	Hydrogen Sulfide	Very Strong Trace
Sodium and Potassium	77,200 ppm	Bicarbonate	573 ppm
Calcium	3,100 ppm	Sulfate	3,400 ppm
Magnesium	680 ppm	Phosphate	ppm
Chloride	123,600 ppm	as Sodium Chloride	ppm

Remarks:

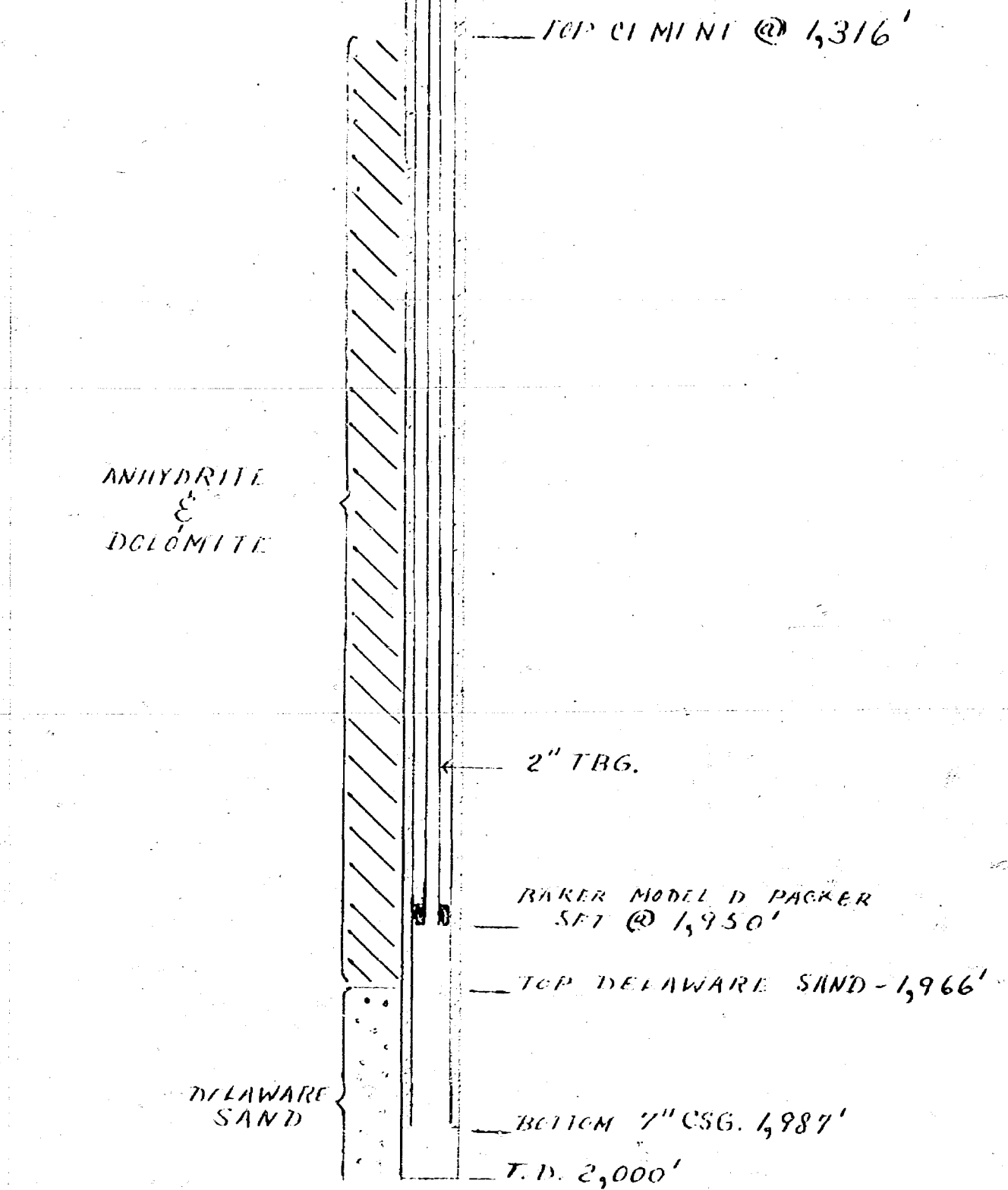
for Stiff type plot (in meq./l.)



Per \_\_\_\_\_

DIAGRAMMATIC SKETCH OF:  
PROPOSED S.W.D. WELL

THORNTON HOPPER - BRADLEY FEDERAL LSE.  
WELL #6 - NE 1/4 SE 1/4 Sec. 11, T24S, R26E,  
EDDY COUNTY, NEW MEX.



PAGE 4

1245 Advocate Print

[illegible]

1233 Advocate Print

[illegible]

# SAMPLE DETERMINATIONS

PAGE 2

COMPANY *Shappell Oil Co.* FARM *Bradley* WELL NO. *6* SEC *11* T. *24* S. R. *26* E.

FORMATION		DOLOMITE		LIMESTONE		ANHYDRITE		SALT		SHALE		SAND		MISC. REMARKS
FROM	TO	%	LITH & COLOR	%	LITH & COLOR	%	LITH & COLOR	%	COLOR	%	COLOR	%	LITH & COLOR	
1145						10	Gray & wh	90	wh					
	60						granular		clear					
	72					70	"	100	"					
	89							100	"					
	1505							100	"					
1505	20					70	"	100	"					
	40							100	"					Tr. Petals
	55							90	"					do "
	65							80	"					20 "
	75					70	wh							Tr "
	82					100	gray	30	"					
	98					100	"							
	1605					100	"							
1605	20		Gray soft			80	"							
	28		gran			100	"							
	35					100	"							
	40		gran			90	"							
	50		dense			100	"							
	60		"			70	"							
	60		gray + wh			30	"							
	70		8 1/2 Brown											
	70		dense shale											
1690	95		Andite			60	"							
	75		30 "			70	"							
	95		40 "			60	"							
1705	15		60 "			40	"							
	25		70 "			30	"							
	35		70 "			30	"							
	45		80 "			20	"							

FORMATION		DOLOMITE		LIMESTONE		ANHYDRITE		SALT		SHALE		SAND		MISC. REMARKS
FROM	To	%	LITH & COLOR	%	LITH & COLOR	%	LITH & COLOR	%	COLOR	%	COLOR	%	LITH & COLOR	
							Samples Begin 1090							
1090	1100						wh 20 granular 80 wh clear							
	125						Tc " 100 "							
	80						Tc " 100 "							
	56						100 "							
	65						100 "							
	80	"					lt. Brown 10 green 90 "							
	95						100 "							
	1210						100 "							
1210							med. gray 7%							
	25						100 ditto							
	33						100 "							
	51						100 "							
	61						10 lt grey 90 "							
	73						ditto 20 E Lch 80 "							
	90						10 " 90 "							
	1305						20 "E grey 80 "							
1305-1340	SLT?													
1340	27 missing						Wh = 100 Lt grey							
377	B7													
387	90						100 "							
	1400						100 "							
1400	10						100 "							
	20						100 "							
	45						100 "							

BLACK RIVER Field

10

R. 26 E., T. 24 S.  
Eddy County, New Mexico

SHAPPELL OIL CO

L.C. 064200

DATUM FIGURES: TOP Delaware SAND

R.A.T. WRIGHT

L.C. 064200A

SHAPPELL OIL CO  
L.C. 064200

SHAPPELL OIL CO  
PROPOSED SALT  
WATER DISPOSAL  
WELL

R.A.T. WRIGHT  
L.C. 064200A

SHAPPELL

M.S. LIVERMORE

N.M. 04885  
+1375

N.M.  
04885

THORNHILL HOPPER - BRADLEY Fed.  
L.S.

+1342  
+1317  
+1310  
+1319  
+1396  
+1312  
+1319  
+1307  
+1257  
+1319  
+1332  
(SH) (SA)

SHAPPELL  
L.C. 064200

T.P.C. & OIL CO

T.P.C. & OIL

N.M. 04874

T.P.C. & OIL

T.P.C. & OIL

N.M. 04874

HARGRAVE

N.M. 09392

J.B. WHITANURST  
L.C. 068317

T.P.C. & OIL

+1302  
(SH) (SA)

HARGRAVE

+1290

HARGRAVE

N.M. 09392

A. MARTIN

+1261 (WATER)

22

23

24

GULF  
+1285

5223  
ODEE

A.J. CRAWFORD

3250  
D. SMITH

3225

27

26

25

Union #2  
MERRIN SAND  
11.5 mi

Union #1  
11.5 mi



Application of Thornton Hopper  
for Salt Water Disposal,  
Eddy County, New Mexico.

Applicant, in the above-styled  
cause, seeks authority to dispose  
of produced salt water into the  
Delaware Formation through the open-  
hole interval from 1987 feet to  
2000 feet of his Bradley Federal  
Well No. 6, located in Unit D  
of Section 11, Township 24 South,  
Range 26 East, Black River-Delaware  
Pool, Eddy County, New Mexico.



DRAFT

dr/

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE NO. 5823

Order No. R- 5348

APPLICATION OF THORNTON HOPPER  
FOR SALT WATER DISPOSAL, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 15, 1976,  
at Santa Fe, New Mexico, before Examiner, Richard L. Stamets.

NOW, on this        day of December, 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, Thornton Hopper,  
is the owner and operator of the Bradley Federal Well No. 6,  
located in Unit I of Section 11, Township 24 South,  
Range 26 East, NMPM, Black River-Delaware Pool,  
Eddy County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Delaware  
formation, with injection into the open-hole interval  
from approximately 1987 feet to 2000 feet.

(4) That the injection should be accomplished through         
2 3/8-inch plastic lined tubing installed in a packer  
set at approximately 1950 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 ~~700~~ psi. 400 PSI

(6) That an administrative procedure should be established whereby ~~the Secretary~~ The Secretary - Director of the Commission may authorize higher wellhead injection pressures without notice and hearing.

(7) That prior to injection of water into said Brady Federal Well No. 6 the applicant should verify the adequacy of cement around the production casing, ~~perform~~ <sup>running of the cement bond log, and</sup> remedial work as required.

(8) That the operator should notify the supervisor of the Artesia district office of the Commission of the date and time of the ~~installation~~ <sup>running of the cement bond log and</sup> of the installation of disposal equipment so that the same may be inspected.

(9) 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.

(10) 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, Thornton Hopper,  
is hereby authorized to utilize ~~his~~ this Bradley Federal Well No. 6,  
located in Unit I of Section 11, Township 24 South,  
Range 26 East, NMPM, Black River-Delaware Pool,  
Eddy County, New Mexico, to dispose of produced salt  
water into the Delaware formation, injection  
to be accomplished through 2 3/8-inch  
tubing installed in a packer set at approximately 1950 feet,  
with injection into the open-hole interval from approximately  
1987 feet to 2000 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; and *that the casing-casing annulus shall be  
equipped with a riser to facilitate periodic  
testing of the braden head for pressure or  
fluid production.*

(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 400 psi.

(3) *That the Secretary-Director of the  
Commission may administratively authorize  
a pressure limitation in excess of 400  
psi upon a showing by the operator  
that such higher pressure will  
not result in fracturing the confining  
strata.*

(4) *That before ~~the~~ said Bradley Federal  
Well No. 6 in said Section 11 may  
be converted to injection, the operator  
shall cause a cement bond log to  
be run on the 7-inch casing therein;  
that he shall cause one copy of such  
bond log to be furnished to the  
supervisor of the Commission's ~~Artistic~~  
List of all and that he shall in*

(4) That before ~~the~~ said Bradley Federal Well No. 6 in said Section 11 may be converted to injection, the operator shall cause a cement bond log to be run on the 7-inch casing therein; that he shall cause one copy of such bond log to be furnished to the supervisor of the Commission's ~~State~~ <sup>Atkins</sup> District office; and that he shall, under the direction of such supervisor, recement such casing should the bond log reveal the same to be inadequately cemented.

(5) That the operator shall notify the supervisor of the Artesia district office of the Commission of the *running of the cement bond log and the* date and time of the installation of disposal equipment so that the same may be inspected.

(6) That the operator shall immediately notify the supervisor of the Commission's Artesia district office of the failure of the tubing, casing, or packer, in said well or the *or any other evidence of fluid migration from the injection zone* 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.

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

(8) 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.