

Case Number.

4142

---

Application

Transcripts.

Small Exhibits

ETC.

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6671 • ALBUQUERQUE, NEW MEXICO



BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

May 21, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Tamarack  
Petroleum Corporation, Inc.,  
for salt water disposal, Lea  
County, New Mexico.

Case 4142

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

RECEIVED  
JUN 12 1969  
PH 1 13

MR. UTZ: Case 4142.

MR. HATCH: Application of Tamarack Petroleum Corporation, Inc., for salt water disposal, Lea County, New Mexico.

MR. KELLAHIN: Jason Kellahin appearing on behalf of Applicant, and I have one witness to be sworn.

(Witness sworn)

(Thereupon, Applicant's Exhibits 1 through 4 was marked for identification.)

MR. UTZ: Any other appearances? You may proceed.

ALBERT METCALFE

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A Albert Metcalfe.

Q Mr. Metcalfe, by whom are you employed, and in what position?

A I am Vice-President of Tamarack Petroleum Corporation.

Q And is Tamarack Petroleum the Applicant in this case; 4142?

A They are.

Q Have you testified before the Oil Conservation Commission here before?

A Yes, sir.

Q Making qualifications a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir.

MR. KELLAHIN: Mr. Metcalfe, what is the proposal of Tamarack in this application?

A We are asking the Commission's approval to convert our Cabot 15 State No. 2 Well in the Pearl-Queen field into a salt water disposal well.

Q Now, referring to what has been marked as Applicant's Exhibit No. 1, will you identify that exhibit?

A Exhibit 1 is a plat of the northeast portion of the Pearl-Queen field, showing the well presently

injecting water into the Queen sand, and, in red, the well we proposed to convert to an injector.

Q Now, the well marked in red, would that be on a consistent pattern with the remainder of the water injection program in this pool?

A It would be. We are unitizing this area, now, for waterflood and the -- and the well shown in red will continue to be an injection well, as an input well in our flood.

Q But for the present, it will be used as a salt water disposal well, is that correct?

A Yes, sir.

Q Did you not secure approval of this Commission for a salt water disposal well in Section 23?

A Yes, sir.

Q What is the situation as to that well?

A After receiving approval from the Commission, before we could start -- before we could convert the well to injector, it started responding to a -- water being injected in other wells, and the production increase from 3 barrels a day to a present of 33 barrels. So, since it is responding, we want to retain it as a

producer.

Q Now, has your No. 2, in Section 15, the one you presently propose to convert -- produced from the Queen formation?

A Yes, sir.

Q It is presently producing?

A Yes, sir.

Q What is the productive capacity of the well at the present time?

A Less than one barrel a day.

Q Would you consider it a marginal or stripper well at this point?

A Yes, sir.

Q In your opinion, with the conversion of this well, through salt water disposal, cause any loss of recovery of oil from the Queen formation?

A No, sir.

Q Would it have any adverse effect on the offsetting wells?

A No, sir.

Q Or property?

A No, sir.

Q Referring to what has been marked as Exhibit No. 2; would you identify that exhibit?

A Exhibit No. 2 is a Conservation Commission's form C108, application to dispose salt water, by injection in a forced formation.

Q What bodies of water do you propose to inject into these wells?

A A maximum of 350 barrels a day.

Q Where will this water come from?

A Yes, it will come from one of the wells in the northeast -- from 20 wells in the northeast portion of the Pearl-Queen field.

Q Will it, then, be injecting water into the Queen formation which was produced from the same formation?

A That's correct.

Q Referring to what has been marked as Exhibit No. 3, would you identify that exhibit?

A Exhibit No. 3 is a schematic diagram of our proposed installation of injecting water into this well.

Q Was the cement circulated on the surface stream?

A Yes, sir.

Q And the Exhibit shows the cement top as to the intermediate stream; is that correct?

A Yes, sir.

Q And the production string was cemented with how many sacks?

A With 150 sacks.

Q Do you have a calculated top on that?

A 4,215 feet.

Q Now, will the well be completed for injection of water by use of a packer and internally coated tubing?

A Yes, sir.

Q How will the tubing be coated? Will it be cement-lined or --

A No, it will be plastic-coated.

Q And will you fill the casing tubing with an inert fluid?

A Yes, sir.

Q And what fluid do you expect to use?

A Fresh water.

Q Will you put a pressure gauge at the surface?

A Yes, sir.

Q And is this the manner in which you completed the other injected wells in this area?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit No. 4, would you identify that exhibit?

A Exhibit 4 is a Schlumberger sonic log of the proposed injection well, showing the top of the Queen formation, and all of the various Queen Sands.

Q Mr. Metcalfe, in the advertising on Case 4142, you proposed to inject in the interval from 4,946 feet to 5,040 feet. Have you changed your plans in connection with that?

A Well, we have. We originally proposed to inject in both the 5 and the 7 Sand, but upon close examination of the core analysis, we determined that the injection in the 5 Sand would contribute nothing to our waterflood, and it's probably too tight to take in any water, and so, we propose now to inject only the No. 5 zone through presently existing perforations from 4,946 to 4,963.

Q Now, that would fall within the injection interval which was advertised, is that correct?

A That's correct.

Q Were Exhibits 1 thru 4 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: I offer in evidence Exhibits 1 through 4, inclusive, in evidence.

MR. UTZ: Without objection, Exhibits 1 through 4 will entered in the record in this case.

(Thereupon, Applicant's Exhibits 1 through 4 were admitted in evidence.)

MR. KELLAHIN: That completes our direct examination.

CROSS EXAMINATION

BY MR. UTZ:

Q All of these injections will be into the Queen, right?

A Yes, sir.

Q And it will be salt water that you will be injecting here?

A Yes, sir.

MR. UTZ: Any questions of the witness?

You may be excused. Statements? The case will be taken under advisement.

I N D E XWITNESSPAGE

ALBERT METCALFE

Direct Examination by Mr. Kellahin

2

Cross Examination by Mr. Utz

9

EXHIBITSMARKEDADMITTED IN  
EVIDENCEApplicant's Exhibits  
1 through 4

2

9

STATE OF NEW MEXICO )  
 ) ss.  
 COUNTY OF BERNALILLO )

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

*Ca Fenley*

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Examiner hearing of Case No. 4642  
 heard by me on May 20 1969  
[Signature], Examiner  
 New Mexico Oil Conservation Commission



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

May 28, 1969

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

Re: Case No. 4142  
Order No. R-3772  
Applicant:  
Tamarack Petroleum Company

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X

Artesia OCC           

Aztec OCC           

Other State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE No. 4142  
Order No. R-3772

APPLICATION OF TAMARACK PETROLEUM  
COMPANY, INC., 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 May 21, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 28th day of May, 1969, 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, Tamarack Petroleum Company, Inc.,  
is the owner and operator of the Cabot 15 State Well No. 2,  
located in Unit P of Section 15, Township 19 South, Range 35  
East, NMPM, Pearl-Queen Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Queen formation, with  
injection into the perforated interval from approximately  
4946 feet to 4963 feet.

(4) That the injection should be accomplished through  
2 3/8-inch plastic-lined tubing installed in a packer set at  
approximately 4900 feet; that the casing-tubing annulus should  
be filled with an inert fluid; and that a pressure gauge should

-2-

CASE No. 4142

Order No. R-3772

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

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Tamarack Petroleum Company, Inc., is hereby authorized to utilize its Cabot 15 State Well No. 2, located in Unit P of Section 15, Township 19 South, Range 35 East, NMPM, Pearl-Queen Pool, Lea County, New Mexico, to dispose of produced salt water into the Queen formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4900 feet, with injection into the perforated interval from approximately 4946 feet to 4963 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 at the surface in order to determine leakage in the casing, tubing, or packer.

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

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

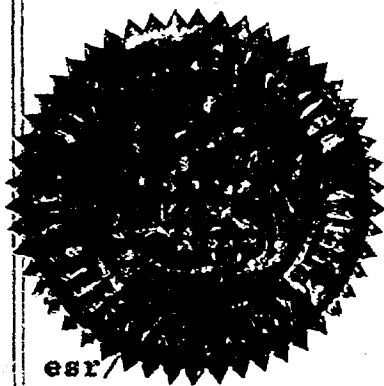
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
ALEX J. ARMIJO, Member

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



esr/

4142

Heard 5-21-69

Rec. 5-23-69.

Grant Demarack permission  
to convert this Cabot 15' ht #2  
P- 15-195-35E. to a S.W.D. well.  
Injection shall be into Pearl  
Green Bay 4946-63 thru.  
perforations a packer set at  
approx + 4800' + thru tube  
internally plastic coated  
tubing - 2 3/8". Annulus to be  
filled w/ inert fluid w/ pressure  
gauge.

Shirley J. J.

Docket No. 15-69

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 21, 1969

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3405: (Reopened) (Continued from the May 7, 1969 Examiner Hearing)

In the matter of Case No. 3405 being reopened pursuant to the provisions of Order No. R-3081, which order established 640-acre spacing for the North Indian Hills-Morrow Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should or should not be developed on 320-acre spacing units.

CASE 4131: Application of Gulf Oil Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Jalmat and South Eunice oil pools, Lea County, New Mexico, in the wellbores of six wells located as follows:

TOWNSHIP 21 SOUTH, RANGE 36 EAST

Arnott Ramsay (NCT-D) Well No. 6 - Unit K - Section 33  
Arnott Ramsay (NCT-D) Well No. 7 - Unit M - Section 33  
Arnott Ramsay (NCT-D) Well No. 8 - Unit N - Section 33  
Arnott Ramsay (NCT-D) Well No. 9 - Unit L - Section 33  
J. F. Janda (NCT-B) Well No. 4 - Unit O - Section 32

TOWNSHIP 22 SOUTH, RANGE 36 EAST

J. F. Janda (NCT-F) Well No. 8 - Unit C - Section 4

CASE 4132: Application of Pan American Petroleum Corporation for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, after January 1, 1969. Said exception would be for three wells located in Unit D, E, and P of Section 27, Township 18 South, Range 31 East, Shugart Field, Eddy County, New Mexico. Applicant seeks authority to continue to dispose of salt water produced in two unlined surface pits located in the E/2 of said Section 27.

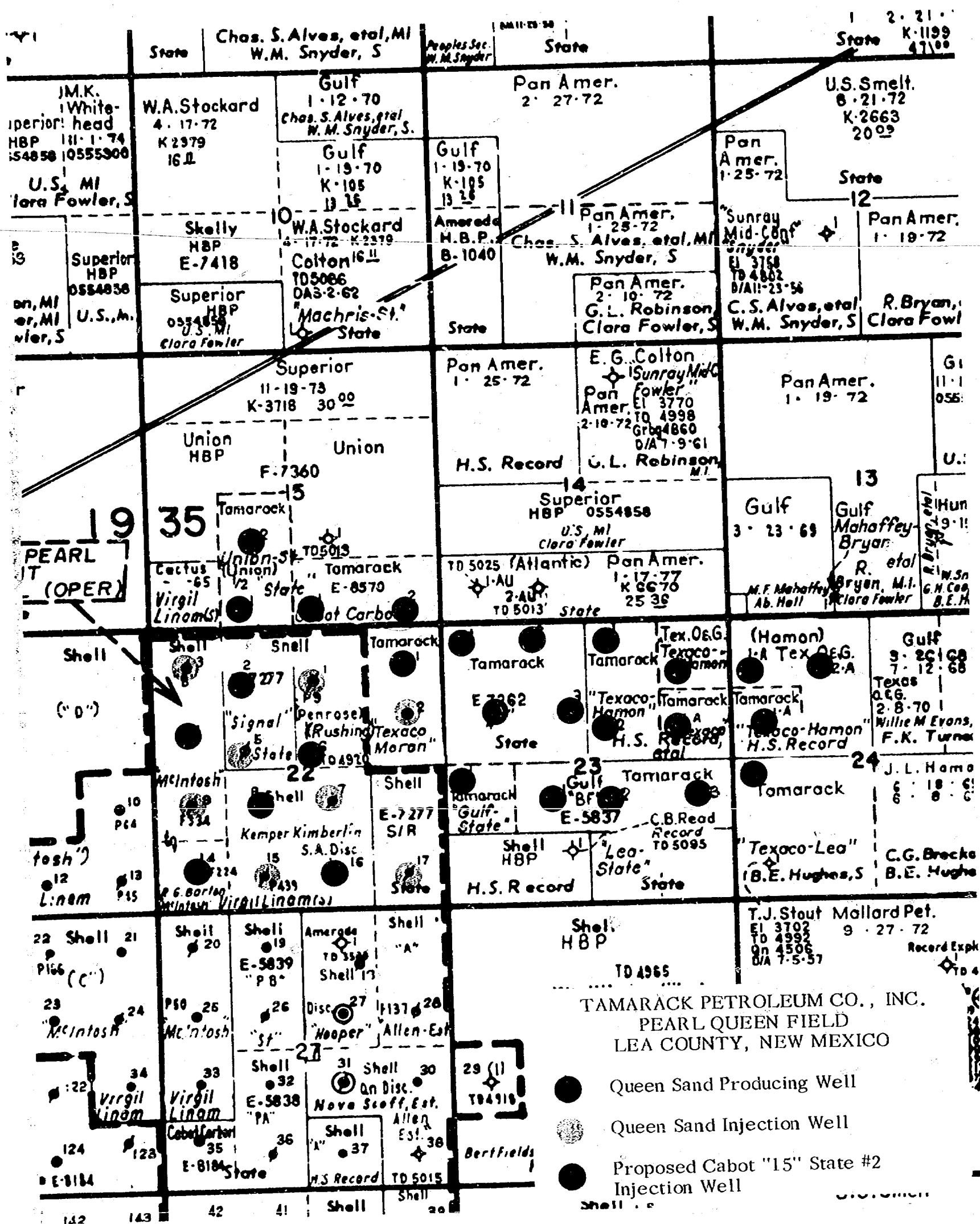
- CASE 4133: Application of Skelly Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Dollarhide Drinkard Unit Area comprising 3,533.52 acres, more or less, of Fee, Federal, and State lands in Townships 24 and 25 South, Range 38 East, Lea County, New Mexico.
- CASE 4134: Application of Skelly Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its West Dollarhide Drinkard Unit Area by the injection of water into the Tubb-Drinkard formation through 43 wells located in Townships 24 and 25 South, Range 38 East, Dollarhide Tubb-Drinkard Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.
- CASE 4135: Application of Roy E. Kimsey, Jr. for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil or gas or both, on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, after January 1, 1969. Said exception would be for the P. R. Bass-Federal Well No. 1 located in Unit F of Section 3, Township 16 South, Range 30 East, West Henshaw Pool, Eddy County, New Mexico. Applicant seeks authority to continue to dispose of produced salt water in an unlined surface pit located near said well.
- CASE 4136: Application of Mallard Petroleum, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates formation in the interval from 3606 feet to 3627 feet in its Milner Federal Well No. 4 located in Unit C of Section 35, Township 20 South, Range 34 East, Lynch Pool, Lea County, New Mexico.
- CASE 4137: Application of Atlantic Richfield Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the East Shugart Unit Area comprising 1359.40 acres, more or less, of Federal and State lands in Townships 18 and 19 South, Range 31 East, Eddy County, New Mexico.

- CASE 4138: Application of Atlantic Richfield Company for a waterflood project and unorthodox injection well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Yates-Seven Rivers-Queen formations through 11 wells in Townships 18 and 19 South, Range 31 East, Shugart Pool, Eddy County, New Mexico. Applicant further seeks an exception to permit the drilling of one of said wells at an unorthodox location 100 feet from the South line and 990 feet from the West line of Section 35, Township 18 South, Range 31 East.
- CASE 4139: Application of Allied Chemical Corporation for a unit agreement, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Milnesand (San Andres) Unit Area comprising 5370.18 acres, more or less, of Federal and Fee lands in Township 8 South, Ranges 34 and 35 East, Roosevelt County, New Mexico.
- CASE 4140: Application of Allied Chemical Corporation for a waterflood project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Milnesand (San Andres) Unit Area by the injection of water into the San Andres formation through 33 wells located in Township 8 South, Ranges 34 and 35 East, Milnesand-San Andres Pool, Roosevelt County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.
- CASE 4141: Application of McCasland Disposal System for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers formation in the intervals from approximately 3756 feet to 3851 feet and from approximately 3918 feet to 3939 feet, respectively, in the Getty Oil Company J. H. Day Wells Nos. 1 and 2, both located in the NW/4 of Section 8, Township 22 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.
- CASE 4142: Application of Tamarack Petroleum Corporation, Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water by injection into the Queen formation in the interval from 4946 feet to 5040 feet in its Cabot 15 State Well No. 2 located in Unit P of Section 15, Township 19 South, Range 35 East, Pearl-Queen Pool, Lea County, New Mexico.

CASE 4143: Application of Amerada Petroleum Corporation for downhole commingling and special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Eumont Gas Pool and the Skaggs-Grayburg Pool in the wellbore of its Fred Turner, Jr., "A" Well No. 2, the Eumont completion of which is presently classified as a gas completion, located in Unit K of Section 18, Township 20 South, Range 38 East, Lea County, New Mexico. Applicant, further seeks the establishment of a special gas-oil ratio limitation for the subject well.

(Continued from the May 7, 1969 Examiner Hearing)

CASE 4121: Application of Roger C. Hanks for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Bar U-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre spacing and proration units and the assignment of 80-acre allowables.



# BEFORE EXAMINER UTZ

## OIL CONSERVATION COMMISSION

NEW MEXICO OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

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

CASE NO. 4142

Form C-108  
Revised 1-1-65

OPERATOR <b>Tamarack Petroleum Company, Inc.</b>		ADDRESS <b>910 Building of the Southwest, Midland, Texas</b>	
LEASE NAME <b>Cabot "15" State</b>	WELL NO. <b>2</b>	FIELD <b>Pearl Queen</b>	COUNTY <b>Lea</b>
LOCATION UNIT LETTER <b>P</b> ; WELL IS LOCATED <b>330</b> FEET FROM THE <b>South</b> LINE AND <b>660</b> FEET FROM THE <b>East</b> LINE. SECTION <b>15</b> TOWNSHIP <b>19S</b> RANGE <b>35E</b> NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	<b>8-5/8</b>	<b>165</b>	<b>125</b>
INTERMEDIATE	<b>None</b>		
LONG STRING	<b>4-1/2</b>	<b>5040</b>	<b>150</b>
TUBING	<b>(proposed) 2-3/8</b>	<b>4900</b>	<b>Baker Model AD</b>
NAME OF PROPOSED INJECTION FORMATION <b>Queen Sand</b>		TOP OF FORMATION <b>4527</b>	BOTTOM OF FORMATION <b>5040</b>
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? <b>Tubing</b>		PERFORATIONS OR OPEN HOLES? <b>Perforations</b>	PROPOSED INTERVAL(S) OF INJECTION <b>4946-63'</b>
IS THIS A NEW WELL DRILLED FOR DISPOSAL? <b>No</b>	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? <b>Production</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			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA <b>120</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>None</b>
ANTICIPATED DAILY INJECTION VOLUME (BBLS.) <b>250</b>	MINIMUM <b>350</b>	MAXIMUM <b>Closed</b>	IS INJECTION TO BE BY GRAVITY OR PRESSURE? <b>Pressure</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 -- <b>Yes</b>		WATER TO BE DISPOSED OF <b>Yes</b>	NATURAL WATER IN DISPOSAL ZONE <b>Yes</b>
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) <b>New Mexico Baptist Childrens Home, Portales, New Mexico</b>		LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL <b>Shell Oil Company, Box 1509, Midland, Texas 79701</b>	
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		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)		THE NEW MEXICO STATE ENGINEER	
<b>Yes</b>		<b>No</b>	
PLAT OF AREA		DIAGRAMMATIC SKETCH OF WELL	
<b>Yes</b>		<b>Yes</b>	

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

*[Signature]*  
(Signature)

**Vice President**  
(Title)

**May 20, 1969**  
(Date)

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

**Abstract.**

## Notes

000000

**U.S. Senate**

TEL 3000

62

1352

65

12.500

3.165

4. *Chlorophyll a* and *Chlorophyll b* contents were determined by spectrophotometry using the method of Lichtenthaler and Whistler (1987).

741,000

6. 125

14,400

730

## References

22

•

0.370

345

333

693

44

Not Determined

© 2004 Blackwell Publishing Ltd

...

[illegible]

10-11-64

Calculated Resistivity = .040 at 60°F.

Page 12, October 30, 1964.

1. 1990年12月25日，在俄罗斯莫斯科市，俄罗斯总统叶利钦在克里姆林宫正式宣布，俄罗斯联邦正式退出苏联，成为独立国家。

Date: 11-10-50  
 To: Mr. Albert Matheis  
 From: Mr. George E. Green, Jr.

11-10-50

11-10-50

Subject: Mr. Albert Matheis  
 Location: McAllen, Texas

Field

11-10-50

Barro-Moran #1

Well Head

0.3

11-10-50

63

Barro-Moran #1

Barro-Moran #1

63

Barro-Moran #1	57,500	2,323	Barro-Moran #1	121,000	3,490
Barro-Moran #1	11,400	570	Barro-Moran #1	93	2
Barro-Moran #1	5,100	420	Barro-Moran #1	1,250	75
Barro-Moran #1	Not Determined	Barro-Moran #1	Barro-Moran #1	Barro-Moran #1	Barro-Moran #1

Barro-Moran #1

Calculated Resistivity - .05% at 61°F.

George E. Green, Jr.

cc: Montgomery - Cable Section

Albert Matheis  
 Albert Matheis  
 Albert Matheis

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 250 million to 450 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

### Abstract: Self-Organizing Networks

0 20 40 60 80 100

62

2000

65

3611. 1994

**CASE STUDY**

76.000 3.255

## Notes

350,000

400

24,400	720
--------	-----

• **Prevalence:** 10-15% of the population

394

2

6.450 930

530

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

300

19

Not Determined

## References

6

[illegible]

1995

100

1998

55

•

\* Collected Locusts -- 6.42 on 62<sup>nd</sup>

Walter H. Gross, Jr.

100-443887-100-443888

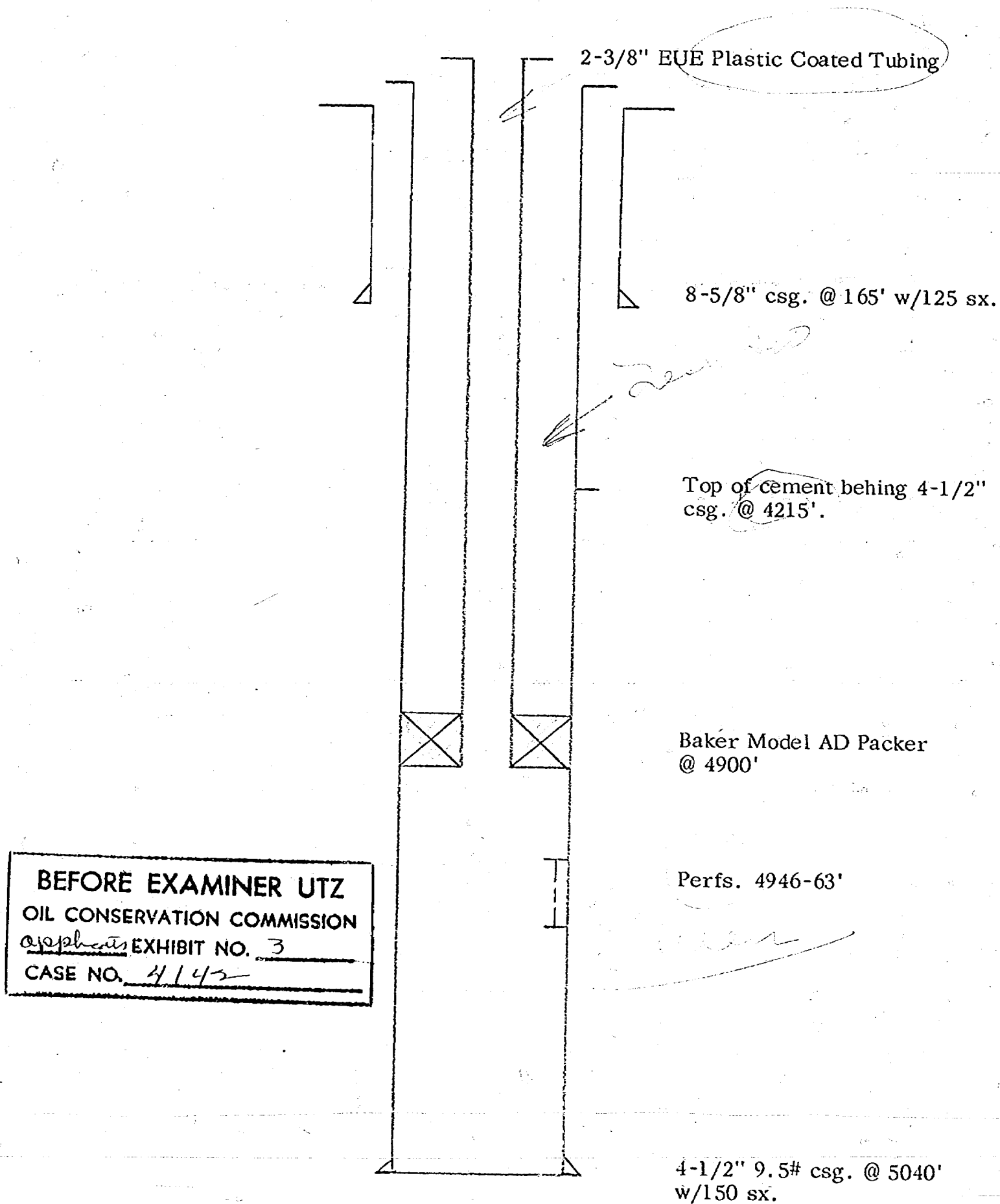
the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 30 million, and the number of people 75 years of age or older is projected to increase from 10 million to 15 million (U.S. Census Bureau, 1997).

1. *Journal of the American Medical Association*, 1997; 277: 1033-1036.

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

TAMARACK PETROLEUM COMPANY, INC.

Cabot "15" State No. 2  
Proposed Injection Well



DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE No. 4142

Order No. R- 3722

*gmh*  
COMPANY,

*CHW*  
*ADP*  
APPLICATION OF TAMARACK PETROLEUM  
CORPORATION, INC., 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 May 21, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this        day of May, 1969, 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, Tamarack Petroleum <sup>Company,</sup> Corporation, Inc.,  
is the owner and operator of the Cabot 15 State Well No. 2,  
located in Unit P of Section 15, Township 19 South, Range  
35 East, NMPM, Pearl-Queen Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Queen  
formation, with injection into the perforated interval  
from approximately 4946 feet to 4963 ~~5040~~ feet.

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

approximately 4900 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus ~~or the annulus left open~~ at the surface in order to determine leakage in the casing, tubing, or packer.

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Tamarack Petroleum <sup>Company</sup> Corporation, Inc., is hereby authorized to utilize its Cabot 15 State Well No. 2, located in Unit P of Section 15, Township 19 South, Range 35 East, NMPM, Pearl-Queen Pool, Lea County, New Mexico, to dispose of produced salt water into the Queen formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4900 feet, with injection into the perforated interval from approximately 4946 feet to 5040<sup>4963</sup> feet;

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

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

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

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