CASE 4073: Application of STANDARD OIL CO. OF TEXAS FOR DUAL COMPLETION & SALT WATER DISPOSAL.

- case number

4023

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 5, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Standard Oil Company of Texas for a dual completion and salt water disposal, Lea County, New Mexico.

Case No. 4073

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will call Case 4073.

MR. HATCH: Case 4073. Application of Standard Oil Company of Texas for a dual completion and salt water disposal, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the Applicant. I have one witness I would like to have sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibit A was marked for identification.)

JIM SLATER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A My name is Jim Slater.

Q By whom are you employed and in what position?

A I'm employed by Standard Oil Company of Texas.

Q What is your position?

A Proration engineer.

Q Where are you located?

A In Houston, Texas.

Q Have you ever testified before the Oil Conservation Commission of New Mexico?

A No, sir.

Q For the benefit of the Examiner, would you briefly outline your education and experience as an engineer?

A Yes, sir. I received a B. S. Degree in petroleum and natural gas engineering from Penn State University in 1963. I have been employed by Standard Oil Company of Texas for the past five and a half years in various engineering capacities, drilling, production, secondary recovery, reservoir and reserves, construction and proration. I'm a registered professional engineer in the State of Texas.

Q In connection with your work for Standard Oil Company of Texas, do you have anything to do with the Stateline-Ellenburger Pool in Lea County?

A Yes, sir.

Q Does that come directly under your supervision?

A Yes, sir.

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

MR. NUTTER: Yes, they are.

Q (By Mr. Kellahin) Briefly, what is proposed by Standard Oil Company of Texas in Case 4073?

A This morning we are requesting permission to dispose of salt water produced from the Stateline-Ellenburger Pool down the 8-5/8 by 5-1/2-inch casing annulus in Standard Continental State No. 1 Well, and also we are asking for permission to dually complete this well as an oil producer from the Stateline-Ellenburger Pool as a disposal well, as I just described.

Q Is the well presently producing from the Stateline-Ellenburger Pool?

A Yes, sir.

Q Directing your attention to what has been marked as Applicant's Exhibit A, a 12-page exhibit, and with reference to what has been marked as Exhibit 1 of Exhibit A, would you identify that exhibit?

A Okay. Exhibit 1 is a plat of the Stateline-Ellenburger Pool and surrounding area. On this plat I have marked proposed injection well, which is Standard's Continental State No. 1, with a red circle around it.

Q Your other oil wells shown on the exhibit, are those all Stateline-Ellenburger wells?

A Yes, sir, there are three wells on the Texas side of the pool and eleven on the New Mexico side. They are all oil producers from the Stateline-Ellenburger Pool.

Q Is there any oil or gas production from any other formation within a two-mile radius of this injection well?

A Not to my knowledge.

Q Referring to what has been marked as Exhibit 2, would you identify that exhibit?

A Exhibit 2 is a completed copy of Form C-108, which is an application to dispose of salt water by injection into a porous formation. This form is actually a duplicate copy of a form which Standard submitted on February 11th, 1969, when we asked for administrative approval to use Continental State No. 1 for salt water disposal service.

I would like to read a little bit of the pertinent information from this form. The proposed injection interval is from 4105 feet to 8980 feet, and this injection would be through casing, casing annulus between 5-1/2-inch oil string and 8-5/8-inch intermediate string. Of course, the injection would be into an open hole interval. The approximate amount of water which we would handle in this well is 11 barrels a day, based on recent tests.

Q Is that water produced from your Stateline-Ellenburger wells in the vicinity of this proposed disposal well?

A Yes, that water would be produced from Standard's

three wells on the New Mexico side of the Stateline Pools, and those wells would be the State 32 No. 1, State 32 No. 2 and Continental State No. 1.

Q Do you anticipate there will be any increase in the amount of water?

A No.

Q I note in your application you state a minimum of ten barrels and a maximum of 100. Do you want that much latitude?

A We put the maximum of 100 in there just for safety's sake. We don't expect any dramatic increases in water production. In fact, it's very stable at the present time.

Q Do you anticipate that you will have to put pressure on the injection zone?

A Yes, sir. As a matter of fact, since this form was completed we have run some injectivity tests on this interval which we're proposing and if you will note under the approximate pressure I have got 500 pounds in there and I would like to correct that, injectivity tests indicate that at rates up to one barrel a minute the pressure will be 1200 pounds, the pump pressure. I'm going to correct this copy of this exhibit right here.

MR. NUTTER: Change the 500 to a 1200?

THE WITNESS: 500 to a 1200.

A This is a very recent test. This water is produced salt water and the water will be treated with a corrosion inhibitor before it is injected. We've listed toward the bottom of the form the surface owner, actually the surface lessee, and four operators who are located within one-half mile of the proposed injection well.

Q (By Mr. Kellahin) Actually, your water production is so low you could almost qualify it for continued use of the surface pit, could you not?

A It's very close, it's just a little over the limit.

Q Just a little over the limit?

A Right. I believe that seems to be most of the pertinent information.

THE WITNESS: Does the Examiner have any questions on Exhibit 2?

MR. NUTTER: Yes, if you've only got 11 barrels a day, why do you inject at one barrel a minute?

THE WITNESS: This is just an injectivity test which we ran to see what pressure would be required.

MR. NUTTER: You probably won't need this kind of pressure, you won't be putting it in that fast?

THE WITNESS: Well, actually even at lower rates the

pressure was close to 1200 pounds. It seems to be the required pressure to inject any. Up to rates of one barrel a minute and faster, it remains at 1200 pounds.

MR. NUTTER: That's surface pressure, right?

THE WITNESS: Right.

MR. NUTTER: So you are putting a pretty good-sized hydrostatic pressure on that casing down there then, aren't you?

THE WITNESS: I haven't calculated what it would be. It doesn't seem to me that it is excessive.

MR. NUTTER: I hope not.

Q (By Mr. Kellahin) Now, referring to Exhibit 3 of Exhibit A, would you identify that exhibit?

A Exhibit 3 is a duplicate copy of the letter which we submitted to the New Mexico Oil Conservation Commission along with Exhibit 2 on February 11th, 1969. Examiner is probably familiar with this letter. I don't see any need to read it for the record. It merely outlines the proposed method of salt water disposal and requests approval of the application.

Q And Exhibit 4 of Exhibit A, would you identify that exhibit?

A Exhibit 4 is a copy of a letter to the surface owners and to offset operators within a half mile of the proposed

disposal well and this also is a duplicate of what was submitted February 11, this is one of the requirements when you ask for administrative approval. I don't see any need to read it either.

Q Referring to Exhibit 5 of Exhibit A, would you discuss that exhibit?

A Exhibit 5 is a completed copy of Form C-107, which is an application for multiple completion.

Q Referring to Exhibit 6 then, would you discuss this proposed multiple completion --

A Okay.

Q -- as proposed by the Applicant here?

A Exhibit 6 is a diagrammatic sketch showing the proposed method of completion. Exhibit 6 shows in some detail the completion which we're proposing. The production from this well is from the Stateline-Ellenburger Pool, perforation is 12,086 to 12,140. We have a Model D Baker production packer set at 11,992, and the 5-1/2-inch oil string. Now, the oil is produced from this zone through a Kobe-type hydraulic pump. The power oil to this pump goes down the 2-7/8-inch OD tubing, and the power oil mixed with the produced oil is produced up the 2-7/8 OD tubing in the 5-1/2-inch casing annulus.

Of the proposed injection zone, we would inject water

down between the 5-1/2-inch and 8-5/8-inch casing, and this water would be into an interval, would be injected into an interval from 4105 to 8980 feet through the open hole section. 5-1/2-inch casing is set at 12,161 feet, and it is cemented with 800 sacks of cement. The top of the cement was determined from a cement bond log to be at 8980 feet.

The 8-5/8-inch intermediate string of casing was set at 4105 feet. It was cemented with 800 sacks, the top of the cement is at 900 feet based on a calculation. Of course, 11-3/8-inch surface casing was set at 409 feet and cement was circulated back to surface.

Q Does the surface string cemented to the surface fully protect any fresh water zones found in this area?

A Yes, sir, it protects the Ogallala, the base of which is found at 110 feet here although the Ogallala is unsaturated at this particular point.

Q There is no water?

A Right.

Q How about the Triassic, or do you know?

A I'm not sure. I don't believe there's any useable fresh water in the Triassic.

Q In any event, that zone is fully covered by cement too, is it not?

A Yes.

Q Are all producing zones fully protected in this well bore?

A Yes, sir.

Q As I understand, you are proposing to inject through the open hole and exposed in the bore are the Queen, San Andres, Glorieta, Tubb and Drinkard and Mississippian formations?

A That is correct.

Q Will all those take water, do you think?

A Probably not. I have some notes where we think the water will go throughout this interval. We expect the majority of the water will go into the San Andres at interval from 4860 to 5050 feet.

Q Is there any oil production or gas production from any of those zones in the vicinity of this well?

A Yes. Not in the immediate vicinity, but I have tried to locate the nearest production, oil and gas production from any of these zones included in the injection interval and going through these, the Queen is oil-productive in the West Dollarhide, which is five to six miles southwest of the location. There is oil production in the San Andres about twenty miles north on the Eunice structure. There's no evidence

of any production in the area in the Glorieta. The Blinebry is productive in the Teague-Blinebry Field, which is five to six miles west. The Drinkard is productive in the West Dollarhide Field, which is five to six miles southwest. And it's also productive in the Teague-Drinkard, which is five to six miles west. As far as the immediate vicinity, it looks like five to six miles is the nearest that any of these zones are productive.

Q In your opinion, will the injection of water in the volumes that you are proposing to inject cause any damage to this formation?

A No, sir.

Q Will it affect anyone's rights in the zones in which you are injecting?

A I don't see how it could.

Q In referring to what has been marked as Exhibit Number 7, would you discuss that exhibit?

A Exhibit 7 is a scratcher and centralizer detail, in the instructions for Form C-107, it was part of the requirements. I didn't try to put this on Exhibit 6 because it was getting pretty full in detail, so I just had this tabulated separately.

Briefly, it just shows we have used what I considered adequate centralizers and scratchers throughout and above the

pay zone and -- let me restate that -- adequate centralizers for each string of casing.

Q Now, would you please identify Exhibit 8 of Exhibit A?

A Exhibit 8 is a copy of an electric log.

Q What information has been marked on that log?

A On Exhibit 8 I have marked the producing perforation from the Stateline-Ellenburger Pool in this well, incidentally it's Continental Stateline No. 1, and also I have marked the top and base of the proposed injection zone and the tops of the formations which are encountered throughout the injection interval.

Just going through the log, I have marked 4105 as the top of the interval to be open for injection. And the producing perforations are marked down at the bottom of the log. Are there any questions on this exhibit?

MR. NUTTER: Yes, sir. You mentioned the top and bottom of the interval in the San Andres awhile ago that should be taking water?

THE WITNESS: Yes, sir.

MR. NUTTER: Would you repeat that interval so I can mark it on the log?

THE WITNESS: 4860 to 5050. Also there are a couple of other streaks where it would be possible, we think possibly

some of the water could go. 4860 to 5050, which I mentioned, is where we think the majority of the water would go. There's a fairly good porosity streak 5440 to 5470 which could conceivably take some water, and also 5710 to 5732.

Q (By Mr. Kellahin) Now, referring to what has been marked as Exhibit 9, would you identify that exhibit?

A Exhibit 9 is a tabulation of production from Standard Oil Company of Texas leases, Stateline-Ellenburger Pool, which are located in Lea County. This is the three wells that I mentioned earlier, which Standard operates. About the only thing I would like to call your attention to on this is the recent water production which shows a fairly stable rate of approximately 11 barrels per day. Cumulative water has not been a great deal, 8,228 barrels have been produced through January 1st, 1969, along with 905,595 barrels of oil.

Q Now, have you presented that same information in the form of a graph?

A Yes, sir. Exhibit 10 is merely the same information in graphic form. Here again it shows a relatively stable amount of water production. I think the graph shows it a little better.

Q Are all those wells on a Kobe pump?

A I believe that's correct. Yes, sir.

Q Then you would not anticipate any further increase in water production?

A That is correct.

Q And what would you estimate the remaining life of this pool to be?

A Based on the production decline it looks like the remaining life of the pool would be approximately two years.

Q Now, referring to what has been marked as Exhibit Number 11, would you identify that exhibit?

A Exhibit Number 11 is current production rate from all wells in the Stateline-Ellenburger Field. This lists every producer.

Q Both in Texas and New Mexico?

A Right. Let me give you the total. In Texas the total rates, approximately 72 barrels of oil per day and 13 barrels of water per day.

Q What is being done with the water in Texas?

A In Texas we have a permit to continue using an open pit for water disposal.

Q Then the New Mexico production, did you want to comment on that?

A Yes, the total oil rate from the New Mexico wells, 1250 barrels of oil per day, 37 barrels of water per day.

The totals, combined totals for the Stateline-Ellenburger Field, 1322 barrels of oil per day, 50 barrels of water per day.

Q What's the spacing in this pool, is it 80-acre spacing?

A That's correct.

Q You have 80 acres dedicated to each well?

A Yes.

Q Taking the pool as a hole, it's not producing more than one barrel per 40-acre tract then, is it, for the pool as a whole?

A Let me see, that's correct.

Q It produces considerably less than that. Referring to what has been marked as Exhibit 12, would you identify that exhibit?

A Exhibit 12 is a water analysis which was run on a sample of produced water taken from the Continental State Battery and sampling date is February 2nd of 1969. It shows the chloride content of the produced water to be 124,000 parts per million.

Q As I understand, prior to injection of this water into your disposal well, it will be treated with an inhibitor?

A Yes, sir, that is correct.

Q In your opinion, will that adequately protect the

casing, both the outside casing and the producing string from corrosion?

A Yes, sir.

Q In your opinion, will this open hole zone take the volumes of water that you propose to inject without any difficulty?

A Would you restate the question?

Q In your opinion, will the open hole zone take the water you propose to inject without any difficulty?

A Yes, sir.

Q You are talking about a pressure of about 1250 pounds?

A About 1200 pounds.

Q Is the casing in good condition?

A Yes, sir.

Q Is this a fairly recent well?

A Yes, sir, this well was completed in 1965.

Q And the casing, in your opinion, will be adequate to sustain this pressure?

A I believe so. I would like to add something else at this point.

THE WITNESS: Mr. Examiner, you mentioned excess of pressures on the back side of the casing. Actually, I would like to point out that the 5-1/2-inch casing of the oil

string remains full of fluid at all times. Therefore, the differential will not be a whole lot more than 1200 pounds at any depth.

Q The differential between the two, the inside and the outside and the outside of the pipe, is this what you are saying, --

A Yes.

Q -- would be merely the pressure that you are putting on at the surface?

A Well, that plus a little bit for the difference in hydrostatic. As long as the oil string remains full, there will not be a great deal of difference.

MR. NUTTER: You are pumping up the casing here?

THE WITNESS: Yes, sir.

Q (By Mr. Kellahin) Was Exhibit A, consisting of 12 exhibits, 1 through 12 inclusive, prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibit A.

MR. NUTTER: Applicant's Exhibit A will be admitted in evidence.

(Whereupon, Applicant's Exhibit A was offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on Direct Examination.

MR. NUTTER: Are there any further questions of Mr. Slater? He may be excused.

(Witness excused.)

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

MR. KELLAHIN: I have nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4073? We will take the case under advisement.

I N D E X

STATE OF NEW MEXICO)
: SS
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 10th day of March, 1969.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1971.

I do hereby certify that the foregoing is
a [illegible] of the proceedings in
the [illegible] hearing of Case No. 4073
heard by me on 2/5, 1969.

[illegible], 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

March 12, 1969

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

Re: Case No. 4073
Order No. R-3703
Applicant:
Standard Oil Company of Texas

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

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. 4073
Order No. R-3703

APPLICATION OF STANDARD OIL COMPANY
OF TEXAS FOR A DUAL COMPLETION AND
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 March 5, 1969, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 12th day of March, 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, Standard Oil Company of Texas, seeks authority to complete its Continental State Well No. 1, located in Unit B of Section 5, Township 24 South, Range 38 East, NMPM, Stateline-Ellenburger Pool, Lea County, New Mexico, as a dual completion to produce oil from the Stateline-Ellenburger Pool through the casing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the Queen, San Andres, Glorieta, Tubb, Drinkard, and Mississippian formations in the open-hole interval from approximately 4105 feet to 8980 feet.

(3) That the produced salt water should be continuously treated prior to injection to prevent casing corrosion and coupon corrosion tests should be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(4) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Standard Oil Company of Texas, is hereby authorized to complete its Continental State Well No. 1, located in Unit B of Section 5, Township 24 South, Range 38 East, NMPM, Stateline-Ellenburger Pool, Lea County, New Mexico, as a dual completion to produce oil from the Stateline-Ellenburger Pool through the casing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the Queen, San Andres, Glorieta, Tubb, Drinkard, and Mississippian formations in the open-hole interval from approximately 4105 feet to 8980 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission;

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(2) 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

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. 3872
Order No. R-3531

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR A DUAL COMPLE-
TION AND 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 October 9, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of October, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Union Oil Company of California, seeks authority to complete its Federal "A" Well No. 1, located in Unit P of Section 12, Township 15 South, Range 34 East, NMPM, Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the San Andres, Glorieta, Yeso, and Tubb formations in the open-hole interval from approximately 4620 feet to 7350 feet.

(3) That the produced salt water should be continuously treated prior to injection to prevent casing corrosion and coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(4) That the casing-tubing annulus should be filled with an inert fluid and that a pressure gauge should be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(5) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Union Oil Company of California, is hereby authorized to complete its Federal "A" Well No. 1, located in Unit P of Section 12, Township 15 South, Range 34 East, NMPM, Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the San Andres, Glorieta, Yeso, and Tubb formations in the open-hole interval from approximately 4620 feet to 7350 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission; that the casing-tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

S E A L

esr/

Docket No. 7-69

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 5, 1969

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

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

CASE 4071: Application of T. C. Sivley for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete his Federal Silver Well No. 4 located in the SW/4 SE/4 of Section 28, Township 20 South, Range 34 East, Lynch Yates-Seven Rivers Pool, in such a manner as to permit production of oil from the Yates-Seven Rivers formations and the disposal of produced salt water into the Lower Seven Rivers formation.

CASE 4072: Application of Pennzoil United, Inc., for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Mobil "12" Federal Well No. 1 located in Unit B of Section 12, Township 23 South, Range 26 East, Eddy County, New Mexico, in such a manner as to permit the production of gas from an undesignated Atoka gas pool and gas from an undesignated Morrow gas pool through parallel strings of tubing.

CASE 4073: Application of Standard Oil Company of Texas for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Continental State Well No. 1 located in Unit B of Section 5, Township 24 South, Range 38 East, Stateline-Ellenburger Pool, Lea County, New Mexico, in such a manner as to permit production of oil from the Ellenburger formation through tubing and the disposal of produced salt water into the Queen, San Andres, Glorieta, Tubb, Drinkard, and Mississippian formation through the casing-casing annulus in the open-hole interval from 4105 feet to 8980 feet.

CASE 4067: (Continued from the February 26, 1969 Examiner Hearing)

Application of Benson-Montin-Greer Drilling Corporation for special pool rules, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the La Plata-Gallup Pool, San Juan County, New Mexico, including a provision for 160-acre spacing and proration units. Applicant further requests that said special rules provide that the unit allowable for a 160-acre unit in said pool be allocated on the basis of four times the normal unit allowable for Northwest New Mexico, and that no credit be given for depth factors. Applicant further requests that said special rules be limited in their application to the exterior boundaries of the La Plata-Mancos Unit Area.

CASE 4074: Application of Benson-Montin-Greer Drilling Corporation for a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Gallup formation in its La Plata Mancos Unit Well No. 1 located in Unit P of Section 31, Township 32 North, Range 13 West, and by the injection of gas into said Gallup formation in its La Plata Mancos Unit Well No. 4 located in Unit N of said Section 31, La Plata-Gallup Pool, San Juan County, New Mexico. Applicant, further seeks the promulgation of special rules governing the operation of said project.

CASE 4075: Application of Benson-Montin-Greer Drilling Corporation for amendment of the La Plata Mancos Unit Agreement, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks to amend the form of the La Plata Mancos Unit Agreement, San Juan County, New Mexico, with respect to Sections 11 and 12 of said unit agreement, to permit inclusion in the participating area of any and all lands necessary for unit operations.

CASE 4076: Application of American Trading and Production Corporation for the creation of a new pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow gas pool for its Southeast Lea Unit Well No. 2 located in Unit L of Section 25, Township 20 South, Range 35 East, Lea County, New Mexico.

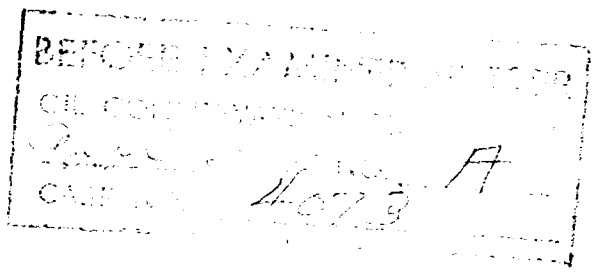
CASE 4065: Application of Humble Oil & Refining Company for the creation of a new oil pool, assignment of discovery allowable, and the promulgation of pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to have its New Mexico State "S" Water Source Well No. 4 (CP-427), located at an unorthodox oil well location 650 feet from the West line and 175 feet from the South line of Section 2, Township 22 South, Range 37 East, Lea County, New Mexico, reclassified as an oil well for the production of oil from the San Andres formation. Applicant further seeks the creation of a new San Andres oil pool for said well and the assignment of an oil discovery allowable of approximately 21,190 barrels to said well. Applicant further seeks the promulgation of special rules for said pool, including a provision for 80-acre proration units.

CASE 4066: (Continued from the February 26, 1969 Examiner Hearing)

Application of Humble Oil & Refining Company for the consolidation of two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of two existing non-standard 320-acre gas proration units into one standard 640-acre unit comprising all of Section 26, Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be dedicated to its New Mexico State "G" Wells Nos. 2 and 4 located in Units P and G, respectively, of said Section 26. Applicant further seeks authority to produce the allowable assigned to said unit from either of said wells in proportion.

CASE 4073
NMOCC MARCH 5, 1969
STANDARD OIL COMPANY OF TEXAS,
A DIVISION OF CHEVRON OIL COMPANY

APPLICATION FOR DUAL COMPLETION
AND SALT WATER DISPOSAL
STATELINE-ELLENBURGER POOL
LEA COUNTY, NEW MEXICO



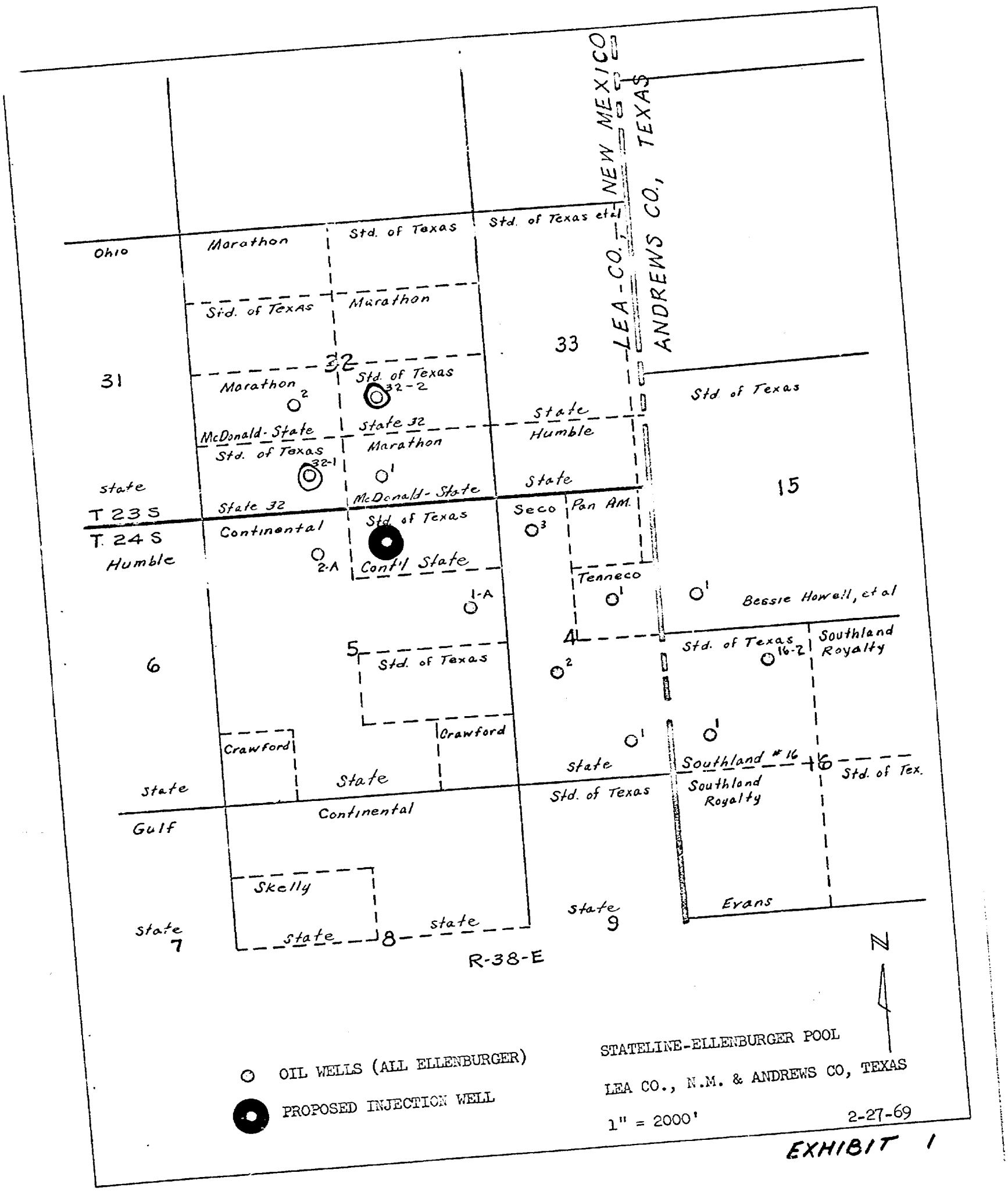

NEW MEXICO
LEA CO.
ANDREWS CO., TEXAS
Ohio
Marathon
Std. of Texas
Std. of Texas et al
Std. of Texas
Marathon
33
32
31
Marathon
Std. of Texas
32-2
Std of Texas
McDonald-State
Std. of Texas
32-1
State 32
Marathon
State
Humble
State
T 23 S
T. 24 S
Humble
State 32
Continental
McDonald-State
Std. of Texas
State
Seco
Pan AM.
15
2-A
Cont'l State
Tenneco
1-A
Bessie Howell, et al
5
4
6
Std. of Texas
Std. of Texas
16-2
Southland Royalty
Crawford
Crawford
State
State
State
Std. of Texas
Southland #16
Std. of Tex.
Southland Royalty
Gulf
Continental
Skelly
Evans
State
7
state
8
state
State
9
R-38-E
N
OIL WELLS (ALL ELLENBURGER)
PROPOSED INJECTION WELL
STATELINE-ELLENBURGER POOL
LEA CO., N.M. & ANDREWS CO, TEXAS
1" = 2000'
2-27-69

EXHIBIT 1

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR: Standard Oil Company of Texas Division of Chevron Oil Company		ADDRESS: P. O. Box 1249, Houston, Texas 77001	
LEASE NAME: Continental-State	WELL NO.: 1	FIELD: Stateline Ellenburger	COUNTY: Lea

LOCATION: UNIT LETTER B ; WELL IS LOCATED 1980 FEET FROM THE East LINE AND 860 FEET FROM THE North LINE, SECTION 5 TOWNSHIP 24S RANGE 38E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	11 3/4"	409	Circulated To Surface	Surface	Visual
INTERMEDIATE	8 5/8"	4105	800	900	Calculated
LONG STRING	5 1/2"	12161	800	8980	CBL
TUBING	2 7/8"	12054	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Model D Packer @ 11,992		

NAME OF PROPOSED INJECTION FORMATION: Queen, San Andres, Glorieta, Tubb, Drinkard, Mississippian	TOP OF FORMATION: 4105	BOTTOM OF FORMATION: 8980

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Annulus ($5\frac{1}{2}$" x 8-5/8")	PERFORATIONS OR OPEN HOLE? Open Hole	PROPOSED INTERVAL(S) OF INJECTION: 4105 - 8980

IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Producer	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? --

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: No known fresh water at this location*	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA: None	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA: None Known

ANTICIPATED DAILY INJECTION VOLUME (BBLS.) MINIMUM: 10	MAXIMUM: 100	OPEN OR CLOSED TYPE SYSTEM: Open	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Pressure	APPROX. PRESSURE (PSI): 500 1200

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: Yes	NATURAL WATER IN DISPOSAL ZONE: Yes	ARE WATER ANALYSES ATTACHED? Yes No

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

Lessee - R. M. Evans Estate, First National Bank, Midland, Texas

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Tenneco Oil Company, P. O. Box 1031, Midland, Texas 79701

Seco Production Company, 616 Vaughn Bldg., Midland, Texas 79701

Marathon Oil Company, Midland National Bank Bldg., Midland, Texas 79701

Continental Oil Company, P. O. Box 431, Midland, Texas 79701

HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER: Yes	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL: Yes	THE NEW MEXICO STATE ENGINEER: Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	PLAT OF AREA: Yes	ELECTRICAL LOG: Yes	DIAGRAMMATIC SKETCH OF WELL: Yes

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

J A Slater (Signature) J. A. Slater — Proration Engineer (Title) — February 11, 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.

*Ogallala unsaturated at this location; possible Triassic water @ 100-400' two miles southeast.

EXHIBIT 2

STANDARD OIL COMPANY OF TEXAS
A DIVISION OF CHEVRON OIL COMPANY
P. O. BOX 1249 HOUSTON TEXAS 77001

MICF

February 11, 1969

Application to Dispose of Salt Water
By Injection Into A Porous Formation
Stateline (Ellenburger) Pool Area
Lea County, New Mexico

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

Attention: Mr. A. L. Porter, Jr.
Secretary-Director

Gentlemen:

Attached is the application of Standard Oil Company of Texas for administrative approval to dispose of produced salt water into an interval which is non-productive of hydrocarbons. The proposed injection application, if approved, would permit disposal of salt water produced from Standard's three wells in the Stateline (Ellenburger) Pool which are located on the New Mexico side of the field by injection down the 8-5/8" x 5-1/2" annulus in the Continental State No. 1 Well. The injection interval is between 4105' and 8980' and includes the following formations: Queen, San Andres, Glorieta, Tubb, Drinkard and Mississippian. The salt water is produced along with oil from the Ellenburger zone at a depth of approximately 12,100'.

Water analyses indicate the produced water contains approximately 166,000 ppm of total solids. Water volumes to be injected are currently on the order of 11 barrels per day. We have indicated a maximum volume of 100 barrels per day, even though we doubt that maximum will ever be reached.

You will recall that we have an application pending for exception to the no-pit order to permit us to continue disposing of this water in an existing unlined surface pit. This subsurface disposal application is submitted to assure that a disposal method will be available should the surface pit application be denied.

In support of this application we have included the following attachments:

EXHIBIT 3

1. Completed Form C-108 in triplicate.

2. Plat showing proposed injection well and location of all other wells within a two mile radius, showing formation from which they produce.

3. Electric log of the proposed injection well.

4. Diagrammatic sketch of the proposed injection well showing pertinent information.

5. Copy of letter to offset operators and the surface owner notifying them of this application.

We have mailed a copy of this application complete with all attachments to the State Engineer in Santa Fe.

Yours very truly,

Paul Hull, jas

Paul Hull
Supervising Proration Engineer

JAS:mkf

Attachments

cc: State Engineer
Capitol Building
Santa Fe, New Mexico 87501

bcc: Mr. J. R. Graham
Mr. T. D. Cramer
Mr. D. C. Helm, Hobbs

STANDARD OIL COMPANY OF TEXAS
A DIVISION OF CHEVRON OIL COMPANY
P. O. BOX 1249 HOUSTON TEXAS 77001

February 11, 1969

R. M. Evans Estate
First National Bank
Midland, Texas

Marathon Oil Company
Midland National Bank Bldg.
Midland, Texas 79701

Tenneco Oil Company
P. O. Box 1031
Midland, Texas 79701

Continental Oil Company
P. O. Box 431
Midland, Texas 79701

Seco Production Company
616 Vaughn Building
Midland, Texas 79701

Gentlemen:

Standard Oil Company of Texas is making application this date to the New Mexico Oil and Gas Conservation Commission for permission to dispose of produced water by injection down the annulus of its Continental State Well No. 1. The produced salt water to be disposed of in this manner will be from Standard's three wells located on the New Mexico side of the Stateline (Ellenburger) Pool which produces from an approximate depth of 12,100'. The proposed injection interval is from a depth of 4105' to 8980'.

Attached you will find a completed copy of the application (Form C-108), a copy of an area plat showing the proposed injection well and surrounding wells, and a diagrammatic sketch of the proposed injection well. According to Commission regulations, as an offset operator or a surface owner, you have a period of fifteen days in which you may protest this application if you should have any objections.

Yours very truly,

C. N. Segnar
Chief Engineer

JAS:mkf
Attachments

cc: New Mexico Oil & Gas Conservation Commission
Capitol Building, Santa Fe, New Mexico 87501

State Engineer
Capitol Building, Santa Fe, New Mexico 87501

bcc: Mr. J. R. Graham
Mr. T. D. Cramer
Mr. D. C. Helm, Hobbs

EXHIBIT 4

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
APPLICATION FOR MULTIPLE COMPLETION

Form C-107
5-1-61

Operator: Standard Oil Company of Texas A Division of Chevron Oil Company		County: Lea	Date: March 5, 1969
Address: P. O. Box 1249, Houston, Texas 77001		Lease: Continental State	Well No.: 1
Location of Well	Unit: B	Section: 5	Township: 24S / Range: 38E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES _____ NO X

2. If answer is yes, identify one such instance: Order No. _____ ; Operator Lease, and Well No.: _____

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation			
b. Top and Bottom of Pay Section (Perforations)	Injected Interval for Water Disposal Down Annulus 4105-8980'		12,036 - 12,140'
c. Type of production (Oil or Gas)	Non-Productive		Oil
d. Method of Production (Flowing or Artificial Lift)	Injection by Pump Pressure		Hydraulic Pump

4. The following are attached. (Please check YES or NO)

Yes	No	
X		a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.
X		b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
	X	c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*
X		d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

Continental Oil Company, P. O. Box 431, Midland, Texas 79701

Seco Production Company, 616 Vaughn Building, Midland, Texas 79701

Marathon Oil Company, Midland National Building, Midland, Texas 79701

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES _____ NO X . If answer is yes, give date of such notification _____ .

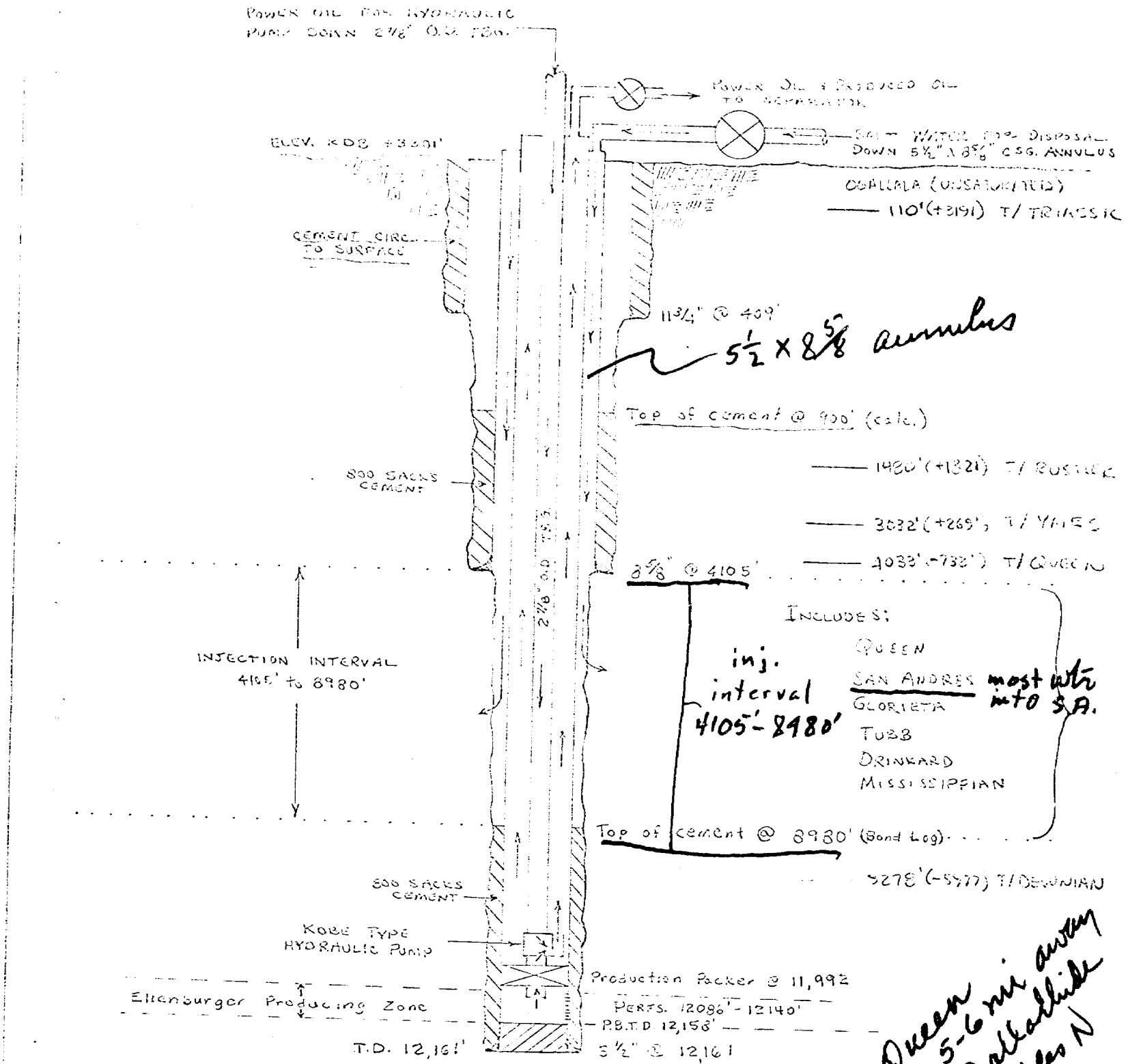
CERTIFICATE: I, the undersigned, state that I am the Proration Engineer of the Standard Oil Co. of Texas, Division of Chevron Oil Co. (Company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

J. A. Slater
Signature J. A. Slater, P. E.

*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

EXHIBIT 5

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard proration unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.



DIAGRAMMATIC SKETCH

CONTINENTAL STATE NO. 1
STATELINE ELLENBURGER FIELD
LEA COUNTY, NEW MEXICO

EXHIBIT 6

STANDARD OIL COMPANY OF TEXAS
CONTINENTAL STATE WELL NO. 1

SCRATCHER & CENTRALIZER DETAIL

Surface Casing

11-3/4" O.D. Casing Set at 409'.
Cement was circulated to surface - no centralizers.

Intermediate Casing

8-5/8" O.D. Casing set at 4105'.
Attached 2 centralizers to shoe joint and 1/joint next 4 joints.
Cemented with 800 sacks. Top of cement calculated at 900'.

Oil String

5-1/2" O.D. Casing set at 12,161'.
Attached 1 centralizer per joint first 12 joints and 1 centralizer every other joint next 84 joints (9000'-12,161'). Casing over interval 11809-12159 was sandblasted. Used 5 Halliburton cement baskets on 500' centers from 9500' to 12000'. Used 3 reciprocating type scratchers/joint (10800' - 12161') and 2/joint (9000' - 10800').

EXHIBIT 7

STATELINE ELLENBURGER POOL
PRODUCTION FROM STANDARD OIL COMPANY OF TEXAS LEASES
LEA COUNTY, NEW MEXICO

	Daily Average Oil Production Barrels/Day	Daily Average Water Production Barrels/Day
1965		
July	173	0
August	361	0
September	331	0
October	308	0
November	450	0
December	626	0
1966		
January	570	1
February	712	0
March	1003	0
April	941	0
May	953	0
June	900	0
July	878	0
August	798	0
September	877	9
October	887	12
November	916	9
December	929	6
1967		
January	905	8
February	842	8
March	902	8
April	873	6
May	837	8
June	754	8
July	774	8
August	837	8
September	831	9
October	809	8
November	809	8
December	788	9
1968		
January	792	8
February	725	8
March	682	8
April	527	11
May	628	11
June	512	11
July	536	11
August	498	12
September	497	11
October	485	15
November	485	11
December	476	10
1969		
January	411	12

CUMULATIVE PRODUCTION TOTALS, JAN. 1, 1969: 905,595 Bbls Oil
8,228 Bbls Water

EXHIBIT 9

5 YEARS BY MONTHS
X 100 DIVISIONS
KEUFFEL & ESSER CO.
46 3653

EXHIBIT 10

STANDARD OIL COMPANY OF TEXAS
STATELINE ELLENBURGER POOL
LEA COUNTY NEW MEXICO

OIL PRODUCTION

WATER PRODUCTION

DAILY AVERAGE OIL PRODUCTION, BARRELS

DAILY AVERAGE WATER PRODUCTION, BARRELS

100
90
80
70
60
50
40
30
20
10
0

Jan. Feb. Mar. Apr. May June July Aug. Sept Oct. Nov Dec

19 65 | 19 66 | 19 67 | 19 68 | 19 69

CURRENT PRODUCTION RATES
STATELINE ELLENBURGER FIELD
DECEMBER 1968

Well	Oil Rate (BPD)	Water Rate (BPD)	GOR (CFPB)
TEXAS			
Standard - Howell No. 1	SHUT IN		
Standard - Southland Royalty 16 No. 1	37	13	190
Standard - Southland Royalty 16 No. 2	35	0	221
TOTAL TEXAS	72	13	
NEW MEXICO			
Continental - State A No. 1	233	0	240
Continental - State A No. 2	208	0	236
Marathon - McDonald State No. 1	22	0	867
Marathon - McDonald State No. 2	136	0	504
Seco - Crawford State No. 1	54	6	136
Seco - Crawford State No. 2	41	2	136
Seco - Crawford State No. 3	25	13	136
Standard - Continental State No. 1	210	3	166
Standard - State 32 No. 1	70	3	397
Standard - State 32 No. 2	196	4	242
Tenneco - State No. 1	55	6	236
TOTAL NEW MEXICO	1,250	37	
COMBINED FIELD TOTALS	1,322	50	

22

EXHIBIT 11

TELEPHONE: HOBBS 393-6215

KE-TONE®

UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Standard Oil Company of Texas

Field

Lease Continental State Bty. Sampling Date 2/2/69

Type of Sample Produced Water

WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	798.40	16,000
Magnesium (Mg++)	232.08	2822
Sodium (Na+) (Cal.)	2477.02	56,947
Iron		34
Bicarbonate (HCO_3)	2.10	128
Carbonate (CO_3 --)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO_4 --)	8.60	413
Chioride (Cl-)	3496.80	124,000
6.5 ph c @ 68 °F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO_3	1030.48	51,524
Carbonate Hardness as $CaCO_3$ (temporary)	2.10	105
Non-Carbonate Hardness as $CaCO_3$ (permanent)	1028.38	51,419
Alkalinity as $CaCO_3$	2.10	105
Specific Gravity c 68° F	1.135	

* mg/l = milligrams per Liter

* me/l = milliequivalents per Liter

Makes Water Work

EXHIBIT 12

STANDARD OIL COMPANY OF TEXAS

A DIVISION OF CHEVRON OIL COMPANY

P. O. BOX 1249 HOUSTON TEXAS 77001

FEB 13 1969

Case 4073

February 11, 1969

Application to Dispose of Salt Water
By Injection Into A Porous Formation
Stateline (Ellenburger) Pool Area
Lea County, New Mexico

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

Attention: Mr. A. L. Porter, Jr.
Secretary-Director

Gentlemen:

Attached is the application of Standard Oil Company of Texas for administrative approval to dispose of produced salt water into an interval which is non-productive of hydrocarbons. The proposed injection application, if approved, would permit disposal of salt water produced from Standard's three wells in the Stateline (Ellenburger) Pool which are located on the New Mexico side of the field by injection down the 8-5/8" x 5-1/2" annulus in the Continental State No. 1 Well. The injection interval is between 4105' and 8980' and includes the following formations: Queen, San Andres, Glorieta, Tubb, Drinkard and Mississippian. The salt water is produced along with oil from the Ellenburger zone at a depth of approximately 12,100'.

Water analyses indicate the produced water contains approximately 166,000 ppm of total solids. Water volumes to be injected are currently on the order of 11 barrels per day. We have indicated a maximum volume of 100 barrels per day, even though we doubt that maximum will ever be reached.

You will recall that we have an application pending for exception to the no-pit order to permit us to continue disposing of this water in an existing unlined surface pit. This subsurface disposal application is submitted to assure that a disposal method will be available should the surface pit application be denied.

In support of this application we have included the following attachments:

DOCKET MAILED

Date 2-20-69

1. Completed Form C-103 in triplicate.

2. Plat showing proposed injection well and location of all other wells within a two mile radius, showing formation from which they produce.

3. Electric log of the proposed injection well.

4. Diagrammatic sketch of the proposed injection well showing pertinent information.

5. Copy of letter to offset operators and the surface owner notifying them of this application.

We have mailed a copy of this application complete with all attachments to the State Engineer in Santa Fe.

Yours very truly,

Paul Hull/jas

Paul Hull
Supervising Proration Engineer

JAS:mkf

Attachments

cc: State Engineer
Capitol Building
Santa Fe, New Mexico 87501

Case 4073

Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

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

OPERATOR: Standard Oil Company of Texas Division of Chevron Oil Company		ADDRESS: P. O. Box 1249, Houston, Texas 77001	
LEASE NAME: Continental-State	WELL NO.: 1	FIELD: Stateline Ellenburger	COUNTY: Lea

LOCATION: UNIT LETTER B; WELL IS LOCATED 1980 FEET FROM THE East LINE AND 860 FEET FROM THE North LINE, SECTION 5 TOWNSHIP 24S RANGE 38E NMPM.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	11 3/4"	409	Circulated To Surface	Surface	Visual
INTERMEDIATE	8 5/8"	4105	800	900	Calculated
LONG STRING	5 1/2"	12161	800	8980	CBL
TUBING	2 7/8"	12054	NAME, MODEL AND DEPTH OF TUBING PACKER: Baker Model D Packer @ 11,992		

NAME OF PROPOSED INJECTION FORMATION: Queen, San Andres, Glorieta, Tubb, Drinkard, Mississippian	TOP OF FORMATION: 4105	BOTTOM OF FORMATION: 8980

IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Annulus (5½" x 8-5/8")	PERFORATIONS OR OPEN HOLE? Open Hole	PROPOSED INTERVAL(S) OF INJECTION: 4105 - 8980

IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Producer	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? --

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: No known fresh water at this location*	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA: None	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA: None Known

ANTICIPATED DAILY INJECTION VOLUME (BBLS.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	10	100	Open	Pressure	500

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	ARE WATER ANALYSES ATTACHED?
	Yes	Yes	~~XXX~~ No

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)

Lessee - R. M. Evans Estate, First National Bank, Midland, Texas

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (½) MILE OF THIS INJECTION WELL

Tenneco Oil Company, P. O. Box 1031, Midland, Texas 79701

Seco Production Company, 616 Vaughn Bldg., Midland, Texas 79701

Marathon Oil Company, Midland National Bank Bldg., Midland, Texas 79701

Continental Oil Company, P. O. Box 431, Midland, Texas 79701

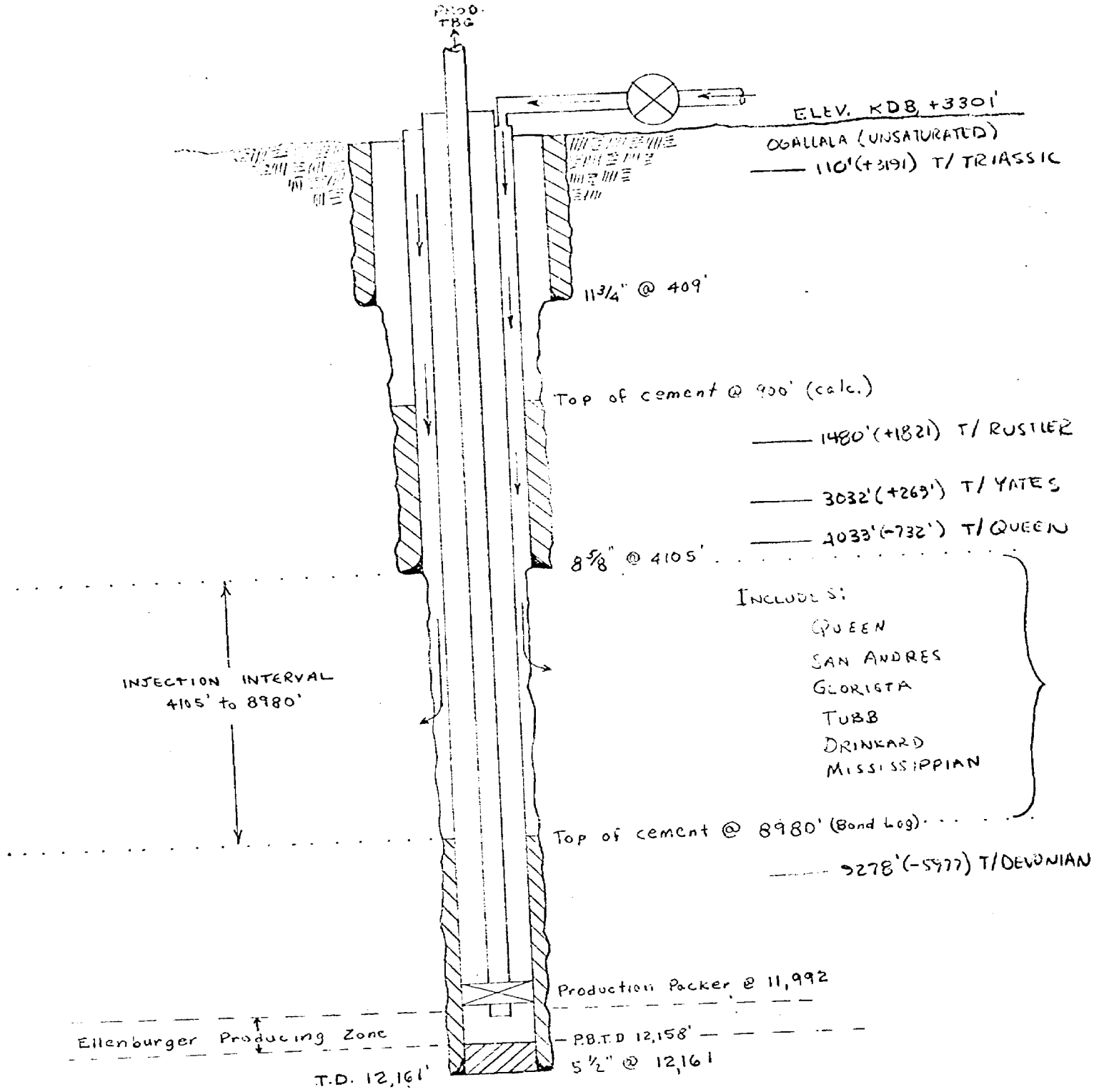
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	THE NEW MEXICO STATE ENGINEER
	Yes	Yes	Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)	**PLAT OF AREA**	**ELECTRICAL LOG**	**DIAGRAMMATIC SKETCH OF WELL**
	Yes	Yes	Yes

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

J. A. Slater (Signature)	Proration Engineer (Title)	February 11, 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.

*Ogallala unsaturated at this location; possible Triassic water @ 100-400' two miles southeast.



DIAGRAMMATIC SKETCH

CONTINENTAL STATE NO. 1
STATELINE ELLENBURGER FIELD
LEA COUNTY, NEW MEXICO

Case 4073

STANDARD OIL COMPANY OF TEXAS

A DIVISION OF CHEVRON OIL COMPANY

P. O. BOX 1249 HOUSTON TEXAS 77001

February 11, 1969

Case 4073

R. M. Evans Estate
First National Bank
Midland, Texas

Marathon Oil Company
Midland National Bank Bldg.
Midland, Texas 79701

Tenneco Oil Company
P. O. Box 1031
Midland, Texas 79701

Continental Oil Company
P. O. Box 431
Midland, Texas 79701

Seco Production Company
616 Vaughn Building
Midland, Texas 79701

Gentlemen:

Standard Oil Company of Texas is making application this date to the New Mexico Oil and Gas Conservation Commission for permission to dispose of produced water by injection down the annulus of its Continental State Well No. 1. The produced salt water to be disposed of in this manner will be from Standard's three wells located on the New Mexico side of the Stateline (Ellenburger) Pool which produces from an approximate depth of 12,100'. The proposed injection interval is from a depth of 4105' to 8980'.

Attached you will find a completed copy of the application (Form C-108), a copy of an area plat showing the proposed injection well and surrounding wells, and a diagrammatic sketch of the proposed injection well. According to Commission regulations, as an offset operator or a surface owner, you have a period of fifteen days in which you may protest this application if you should have any objections.

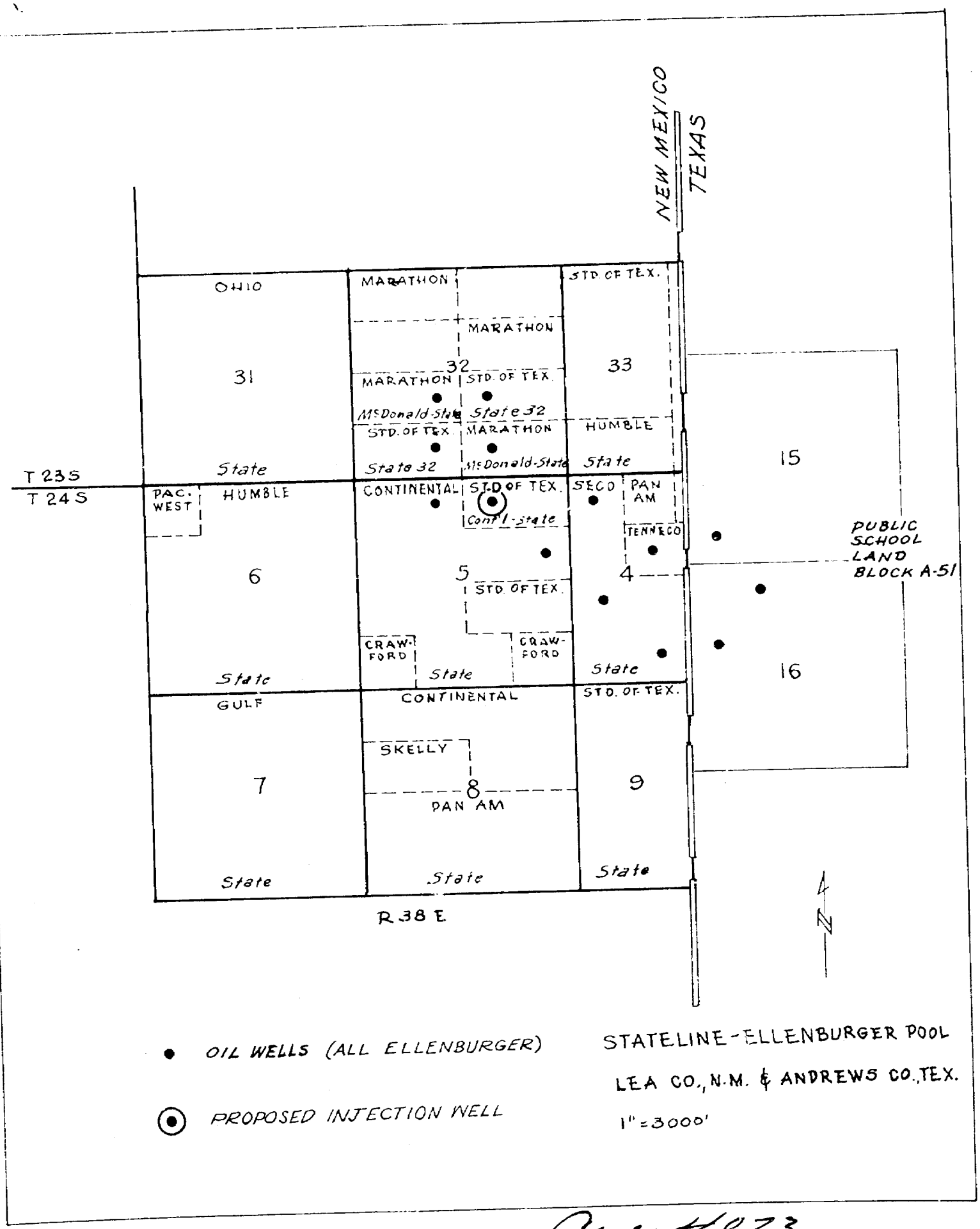
Yours very truly,

C. N. Segnar
Chief Engineer

JAS:mkf
Attachments

cc: New Mexico Oil & Gas Conservation Commission
Capitol Building, Santa Fe, New Mexico 87501

State Engineer
Capitol Building, Santa Fe, New Mexico 87501


NEW MEXICO
TEXAS
OHIO
MARATHON
STD. OF TEX.
MARATHON
31
32
33
MARATHON
STD. OF TEX.
McDonald-State
State 32
STD. OF TEX.
MARATHON
HUMBLE
State
State 32
McDonald-State
State
T 23S
T 24S
PAC. WEST
HUMBLE
CONTINENTAL
STD OF TEX.
Cont'l-state
SECO
PAN AM
TENNECO
15
PUBLIC SCHOOL LAND BLOCK A-51
6
5
4
STD. OF TEX.
CRAW-FORD
CRAW-FORD
State
State
State
16
GULF
CONTINENTAL
STD. OF TEX.
SKELLY
7
8
9
PAN AM
State
State
State
R 38 E
N
OIL WELLS (ALL ELLENBURGER)
PROPOSED INJECTION WELL
STATELINE-ELLENBURGER POOL
LEA CO., N.M. & ANDREWS CO., TEX.
1" = 3000'

Case 4073

DRAFT

GMH/esr
3-7-69

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. 4073

Order No. R- 3703

APPLICATION OF STANDARD OIL COMPANY
OF TEXAS FOR A DUAL COMPLETION AND
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 March 5, 1969, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of March, 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, Standard Oil Company of Texas, seeks authority to complete its Continental State Well No. 1, located in Unit B of Section 5, Township 24 South, Range 38 East, NMPM, Stateline-Ellenburger Pool, Lea County, New Mexico, as a dual completion to produce oil from the Stateline-Ellenburger Pool through casing ~~inch tubing~~ and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the Queen, San Andres, Glorieta, Tubb, Drinkard, and Mississippian formations in the open-hole interval from approximately 4105 feet to 8980 feet.

(3) That the produced salt water should be continuously treated prior to injection to prevent casing corrosion and coupon corrosion tests should be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(4) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Standard Oil Company of Texas, is hereby authorized to complete its Continental State Well No. 1, located in Unit B of Section 5, Township 24 South, Range 38 East, NMPM, Stateline-Ellenburger Pool, Lea County, New Mexico, as a dual completion to produce oil from the Stateline-Ellenburger Pool through casing ~~inch tubing~~ and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the Queen, San Andres, Glorieta, Tubb, Drinkard, and Mississippian formations in the open-hole interval from approximately 4105 feet to 8980 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission;

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(2) 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.