

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
May 24, 1961

EXAMINER HEARING

IN THE MATTER OF:

CASE 2293

TRANSCRIPT OF HEARING



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IN THE MATTER OF: :

CASE 2293 Application of Great Western Drilling Com- :
pany for approval of the Grain Queen Unit :
Agreement, for permission to institute a :
waterflood project therein, for special :
rules governing said waterflood project :
including a provision for special allow- :
ables, and for permission to commingle the :
production from all leases in said unit, :
Lea County, New Mexico. Applicant, in the :
above-styled cause, seeks approval of the :
Grain Queen Unit Agreement, which unit em- :
braces 200 acres of State and fee lands in :
Township 13 South, Range 32 East, Lea Coun- :
ty, New Mexico, described as follows: :

Section 5: SE/4 NW/4, NE/4 SW/4 and :
the S/2 SW/4 :

Section 8: NE/4 NW/4 :

Applicant further seeks permission to in- :
stitute a waterflood project in said Grain :
Queen Unit Area and seeks the promulgation :
of special rules governing said project :
including a provision for special allow- :
ables. Applicant further seeks permission :
to commingle the unitized substances pro- :
duced from all leases in said Grain Queen :
Unit Area without separate measurement in :
tanks on each individual lease. :

BEFORE:

Elvis A. Utz, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S



MR. UTZ: We'll call Case No. 2293.

MR. MORRIS: Application of Great Western Drilling Company for approval of the Grain Queen Unit Agreement, for permission to institute a waterflood project therein, for special rules governing said waterflood project including a provision for special allowables, and for permission to commingle the production from all leases in said unit, Lea County, New Mexico.

MR. BRATTON: We have two witnesses and ask that they be sworn.

(Witnesses sworn.)

MR. UTZ: Are there other appearances in this case?

You may proceed.

SAM SNODDY,

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Will you state your name, address and occupation?

A Sam Snoddy, Great Western Drilling Company, 509 North Lorraine, Midland, Texas.

Q How long have you been employed by Great Western?

A Eight years.

Q Are you familiar with the matters contained in Application, in Case 2293 and the area covered in that application?

A Yes, sir.

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Q Are you familiar with the proposed unit agreement?

A Yes, sir.

MR. BRATTON: We ask that the unit agreement be marked Exhibit 1.

(Whereupon, Applicant's Exhibit 1 marked for identification.)

Q (By Mr. Bratton) What is the area covered by the proposed unit agreement?

A Approximately 200 acres. The legal description is the south half of southwest quarter, the northwest quarter of the southwest quarter, and the southeast quarter of the northwest quarter of Section 5. Then in Section 8 is the northeast quarter of the norththwest quarter, Township 13 South, Range 32 East.

Q What is the royalty ownership of this acreage, Mr. Snoddy?

A 160 acres is owned by the State and 40 acres is owned by an individual.

Q There is a proposed secondary recovery unit?

A Yes, sir.

Q Who is designated as the unit operator?

A Great Western Drilling.

Q Is this unit agreement similar to those that have previously been approved by the state land office for secondary recovery purposes?

A Yes, sir.



Q Have you submitted this unit agreement to the State Land Office for approval?

A We have submitted it for approval and oral approval has been granted.

Q What is the commitment of the other working interests and royalty interests?

A We have a letter from the other working interests owner which is Grayridge, and they have approved the unit agreement and as soon as it is submitted to them, they will execute it. As far as royalty owners are concerned, we have none other than the state. I believe Grayridge has contacted Mr. Sam Williams who is royalty owner under this tract.

Q And you anticipate the commitment of that royalty interest?

A Yes, sir.

Q So that you will have a hundred percent working and royalty interest commitment?

A That is correct.

Q So that actually your unit will be a one hundred percent unit and will be effective upon the approval and approval by the land commission?

A Yes, sir.

Q When will the unit agreement be effective?

A Under Section 23 of the unit agreement it provides that it will become effective at 7:00 A.M. on the first day of the month

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following approval and also with the filing in Lea County of a copy of unit agreement.

Q So, when would you hope to have the unit agreement become effective?

A By June 1. Probably July 1 would be the effective date.

Q Is there anything else you care to state to the Examiner at this time in connection with the land matters in the unit agreement?

A I don't believe so.

MR. BRATTON: We have no further questions of this witness.

MR. UTZ: Are there any other questions of the witness?

The witness may be excused.

(Witness excused.)

JOHN HAMPTON,

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Will you state your name, by whom you are employed, and in what capacity?

A John Hampton, Great Western Drilling Company, Chief Production Engineer.

Q Have you previously testified before this Commission as an expert witness?

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A Yes, sir.

Q Are you familiar with the matters contained in this application and with the area in the Grain Queen Unit?

A Yes, sir, I am.

Q Referring to Exhibit 2 which is the large plat of the entire area, would you explain what it shows?

A Exhibit 2 is a plat of the portion of the Grain Queen Unit field. I believe it shows only the northern portion of the field. We show on this map several waterflood units which are now in operation and these are outlined in various lines. In addition, we have shown on this map all of the wells to the best of my knowledge which are injection wells at the present time. We have outlined on this plat the proposed unit area in yellow. In addition, we have circled the two proposed injection wells in red.

Q This shows that the proposed Grain Queen Unit is on the eastern fringe of the north Caprock Queen Unit No. 1?

A That's correct.

Q Which is a secondary recovery unit which has been in operation for some time?

A Yes, sir.

Q Is there anything further you care to point out in connection with this plat?

A I believe that that is all I have about this plat.

Q Referring now to Exhibit 3, which is a small contour map, Mr. Hampton, would you explain what it is.



A Exhibit 3 is a portion of the same map showing essentially the same data except in a smaller area. We have outlined the proposed unit in yellow and have also contoured the top of the pay zone on this map. The only thing significant I can point out about this contour is that it does show the Queen formation dipping slightly to the east in the area.

Q Now, turn then to Exhibit No. 4 and for purposes of identification, 4 consists of how many sheets?

A I believe there are fourteen.

Q Let's break them down.

A There are four curves on injections wells which offset the proposed unit.

Q There are the curves on the north Caprock Queen unit No. 1, Wells 5, 4, 12, 6, 16, and 8, is that correct?

A That is correct; yes, sir.

Q Will you explain what those reflect?

A I attempted to show a couple of things on these curves. These curves are shown in blue. The curve is the monthly injection rate and on the same curve are the cumulative water injections. The cumulative water injection scale is to the right hand side of the page and the monthly injection is to the left hand side of the page and then across the bottom of the page we have shown the time. I might point out the injection rates on each of the wells: 5-4 in the north Caprock Queen unit is presently injecting approximately 9,000 barrels a month; well 5-12 is inject-



ing approximately 4,300 a month; 6-16, approximately 3,100 barrels a month; and 8-4 is injecting approximately 3,200 a month.

Q These are the wells immediately offsetting the proposed 200-acre unit?

A Yes, sir. These are all of the injection wells offsetting the proposed units with the exception of well No. 8-6 in the north Caprock Queen No. 1. This well has a total, I believe, of about 200 barrels of water injected into it. They have some type of mechanical trouble and the well is not being injected into at the present time. I anticipate that it will be in the near future.

Q Your proposed injection pattern would fit right into the pattern of the Caprock Queen unit?

A Yes. It's been established by the north Caprock Unit No. 1.

Q Is there anything else you'd care to comment on concerning the offset injections?

A I believe that's all that's significant about those curves.

Q Turning your attention to Exhibit No. 5, which consists of five sheets pertaining to the producing wells offsetting the proposed unit. Those producing wells being north Caprock Queen 5-3, 5-5, 6-9, 7-1 and 8-5.

A On these curves we are once again trying to show several things about the wells. On the left hand side of the curves are the rate; across the bottom we have shown once again time; and then



~~we have shown cumulative oil and depicted by X's we have shown~~
cumulative water and we have shown the monthly rate of production
or oil with a red line and the monthly rate of production of water
with a blue line.

Q What do these reflect as to the monthly production?

A They reflect on Well No. 5-3, that at the present time,
it is producing -- in March it produced approximately 660 barrels
of oil, approximately 9,900 barrels of water. Well 5-5 produced
approximately 1,750 barrels oil, and about 9,000 barrels of water.
Well No. 6-9 has produced -- was producing during March, approxi-
mately 2,700 barrels oil, -- you will notice here in March of '61
there is a green dot and that is the cumulative water that this
well produced throughout the life of the well and it's merely a
matter of a couple of barrels a month. It does not produce water
flood water at this time to my knowledge.

Then, 7-1 during the month of March produced approximately
1,625 barrels oil; Well No. 8-5 produced about 750 barrels oil.

Q Is there anything else you care to point out in connection
with these graphs?

A No, sir. I believe that's all that's significant at this
time.

Q Turning your attention to Exhibit No. 6, which consists
of five sheets being the cumulative oil monthly production on the
five wells in the proposed unit.

A That series of curves are the producing well curves on



the wells to be included in the proposed unit. I might point out here that four of the wells were drilled in late '59 and one of the wells was completed in July of '60, some time after the injection of water into the north Caprock Queen unit no. 1.

The first curve is the Great Western Drilling state No. 4. We show the montly rate of this well. I might point out that it produced almost 1,200 barrels in March according to this curve which was making up for some allowable it did not make in December. Then in X's, we have shown cumulative production to be approximately 20,000 barrels of oil. On Great Western's No. 2, it also made about 1,200 barrels of oil in March and its cumulative is about 19,500 barrels oil. Our Great Western Stakes No. 3, it also produced about 1,200 barrels in March and the cumulative is about 15,200 barrels oil. On Great Western Stakes No. 4, it produced about 1,250 barrels oil in March and the cumulative is about 16,200 barrels oil; in the Grayridge-Vickers Stake 1-8 well, it produced about 850 barrels in March and the cumulative is about 51,000 barrels oil.

Q Now, in connection with the application for the waterflood project, have you complied with the rules insofar as submitting information to the state engineer?

A Yes, sir. We have notified the state engineer of this application and we also served him an analysis of the water we propose to use or this waterflood operation.

Q Is that marked Exhibit 7?

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A Yes, sir.

Q Actually, Mr. Hampton, is this water to be obtained from the same water supply furnishing the north Caprock unit?

A The north Caprock unit will furnish water for this injection project. It is the identical water that they are using. It is their water analysis, by the way.

Q Do you have any logs about the proposed injection wells, Mr. Hampton?

A No, sir. None of these wells have been logged.

Q Do you have cores if the Commission should be interested in them?

A Yes, sir. All of the five wells in the unit, in the proposed unit area, were cored and if the Commission would like, I have a core analysis available from all of these wells.

Q That can be furnished to the Commission upon its request?

A Yes, sir.

Q What is your casing program?

A The wells had casing set into the beds and cement circulated for the surface string of casing. They were all set at 300 feet of casing. Then, the production string of casing was set at the top of the Queen pay's formation in four of the wells and all of the Great Western wells were cemented with 100 sacks of cement and the Grayridge was cemented with 300 sacks of cement around the production casing.

Q What is your proposed injection program?



A We believe that it will be absolutely essential to balance injection rates with the north Caprock Queen unit no. 1 for the protection of correlative rights and for the efficient operations of the waterflood so we would propose to balance the injection rates with the north Caprock Queen unit no. 1. Probably we would propose to inject water to fill up a little bit faster than they are, to balance the injection rates with that unit at all times.

Q Now, in connection with the waterflood unit, what are you requesting, Mr. Hampton? You are requesting approval of the waterflood project?

A Yes. And for permission to inject water into the no. 4 well and we are requesting the Commission to consider our allowables for the producing wells in the proposed unit area.

Q You are requesting special allowables for the producing wells in the unit area under the provisions of 701 in order to protect the correlative rights in the area?

A That is correct.

Q Now, will you explain to the Commission why you feel this is essential?

A Well, we feel that it is essential that we should balance injection rates and if we balance injection rates we feel that we probably will have producing rates much the same as the north Caprock Queen unit No. 1, which by the way, enjoys capacity allowable on their producing wells.

Q Actually, as the map reflects, this is in the nature of



an extension of the north Caprock Queen unit no. 1, is it not?

A I would consider it so, yes, that it would be the same, essentially the same. It just so happens they weren't drilled until after this unit was completed. At the time the unit was completed, it had no provisions for taking in non-producing acreage. It excluded non-producing acreage, undeveloped acreage.

Q What in your opinion would be the result if you were not allowed the same treatment as the north Caprock Queen unit no. 1 is allowed?

A There is, of course, a possibility that we could get out of balance and get it moving to the north Caprock Queen unit. There is also the possibility that we could -- that oil could be bypassed by us by the injection of water.

Q Could oil be pushed past you to the east?

A It is possible to a certain extent to the east, sir.

Q Is there anything else you care to say in connection with the special allowable requested for this project?

A No, sir.

Q Now, Mr. Hampton, you are also asking commingling of the production from the three producing wells?

A Yes, sir; that is correct.

Q And once the agreement is signed by all parties for all purposes, the entire area will be one lease, is that correct?

A That is correct. We can see no problem with the commingling.

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Q If for some reason the royalty owner of the forty-acre tract should not join you, you could not commingle, could you?

A No, sir; we could not.

MR. UTZ: He hasn't joined, up to now?

MR. BRATTON: If the Examiner please, he has not, but Grayridge has contacted him and they assured us they will join. We have not had any direct contact with him. Our tract is the state tract.

Q (By Mr. Bratton) Is there anything further you care to point out in connection with any portion of this application, Mr. Hampton?

A I believe not.

Q Were Exhibits 2 through 7 prepared by you or under your supervision?

A Exhibits 2 through 6 were prepared by me and 7 is an analysis of water which was prepared by the Treat-Rite Water Laboratories.

MR. BRATTON: We offer in evidence Applicant's Exhibits 1 through 7.

MR. UTZ: Without objection, Exhibits 1 through 7 will be entered into the record.

MR. BRATTON: We have no further direct examination.

MR. UTZ: Are there any other questions of the witness?

MR. MORRIS: Yes, sir.

MR. MORRIS:

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Q Was any consideration given to including any of the Gulf acreage immediately to the east?

A If you will notice, there is a well in the northwest quarter of the southeast quarter of the same section, Section 5. It's labeled 5-1. That is a well which was recently drilled by Grayridge, and essentially -- well, it had no pay formation in it; therefore, we don't feel there is any pay formation in the Gulf acreage.

Q Referring to Exhibit 3, it would appear that possibly the extreme northwest corner of the Gulf acreage might be productive, would it not?

A I don't see that that exhibit shows that, no, sir.

Q All the wells that you have in your proposed unit are offset either directly or diagonally by injection wells outside of the unit, is that correct?

A To the west, north, and south.

Q Well, each well within the unit is offset directly or diagonally?

A That's correct; yes, sir.

Q For that reason, if for no other, you feel that would justify capacity allowable for your producing wells, is that correct?

A I'm afraid I don't understand your question.

Q In other words, each one of the producing wells is offset directly by injection wells outside of the unit within the north Caprock Queen unit no. 2?

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A Yes, sir.

Q Mr. Hampton, would you consider this -- let me ask you this: Are you going to start your operations up here before the flood to the west of you gets to your property or is it already -- are you already experiencing response from that flood into your wells at the present time?

A In my opinion, we are experiencing responses from that flood now.

Q So there would be no question of delaying before you would start your own operations?

A No, sir.

Q Do you consider that the flood that you are proposing is an expansion of the flood that is going on at the present time to the west of you?

A It could be considered that way, yes, sir.

Q It doesn't make any difference whether we call this a buffer zone or an explanation of your flood or special allowables for you to protect correlative rights under Rule 701, does it?

A No, sir.

MR. MORRIS: I have no further questions; thank you.

MR. UTZ: Any other questions of the witness?

MR. BRATTON: I have one further question relating to the acreage to the east.

REDIRECT EXAMINATION

BY MR. BRATTON:

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Q Actually, based on your Grayridge hole, do you believe the porosity dies out pretty close to the east boundary of your acreage?

A We think it does, and there are some wells on the eastern edge of the unit which are indicated on here as dry holes and they have all penetrated a zone where the porosity was either filled or in which sand was not present. We think it was relatively close to the east edge of the unit.

Q So that the Commission would not have to worry about this unit expanding to the east and the well being drilled there which would not be offset by these capacity injection wells which Mr. Morris was referring to?

A In our opinion, this represents the eastern development that the Commission will see.

Q And as Mr. Morris pointed out, this is in effect expansion of the north Caprock Queen unit no. 1?

A Yes.

Q And every producing well that have will be or is now offset by injection wells?

A Yes, sir.

Q And in your opinion there is no doubt but what you are receiving response to the effects of the north Caprock Queen flood?

A In my opinion, we are, very definitely, right now.

MR. UTZ: You don't believe your Grayridge 5-1 showed any permeability or porosity in the Queen pay?

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A It does not; no, sir.

MR. UTZ: Are there any other questions of the witness?

The witness may be excused.

(Witness excused.)

Are there any other statements in this case?

MR. MORRIS: The Commission has received a letter from the office of the State Engineer offering no objection to the approval of this application.

MR. UTZ: Are there any other statements?

The case will be taken under advisement.

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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, THOMAS F. HORNE, Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in machine shorthand and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

Thomas F. Horne

 NOTARY PUBLIC

My Commission expires:

May 4, 1965

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of case No. 2293 heard by me on May 24, 1961.

Thomas F. Horne, Examiner
 New Mexico Oil Conservation Commission

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