

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
MAY 4, 1961

EXAMINER HEARING

PHONE CH 3-6691

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

IN THE MATTER OF: :

CASE 2269 Application of Great Western Drilling Company: :
for an oil-salt water dual completion. Ap- :
plicant, in the above-styled cause, seeks :
authorization to dually complete its Federal :
Oil Well No. 2, located in the SE/4 NW/4 of :
Section 3, Township 9 South, Range 37 East, :
Lea County, New Mexico, in such a manner as :
to permit the production of oil from the :
Bough C formation adjacent to the East Alli- :
son-Pennsylvanian Pool and the injection of :
salt water into the San Andres formation. :

BEFORE:

Daniel S. Mutter, 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. MUTTER: We will take next Case 2269.

MR. MORRIS: Case 2269. Application of Great Western
Drilling Company for an oil-salt water dual completion.

MR. CHRISTY: Sim Christy, Hervey, Dow & Hinkle for the
applicant, Great Western Drilling Company. We have one witness,
Mr. Examiner.

(Witness sworn)

MR. CHRISTY: I might state to the Examiner initially,



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CASE 2269 Application of Great Western Drilling Company: :
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plicant, in the above-styled cause, seeks :
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Section 8, Township 9 South, Range 37 East, :
Lea County, New Mexico, in such a manner as :
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(Witness sworn)

MR. CHRISTY: I might state to the Examiner initially,



that portions of this case will be similar to the Commission's Case 2208, and I brought the file in, Mr. Examiner; it's right there, turned the other way.

JOHN HAMPTON,

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address and occupation?

A John Hampton. Chief production engineer, Great Western Drilling Company, Midland, Texas.

Q Mr. Hampton, have you previously testified before this Commission as a geologist and engineer and had your qualifications accepted?

A Yes, sir, I have.

Q Are you familiar with what is sought in Case No. 2269 before this Commission?

A Yes, sir.

Q Are you familiar with the area and the wells within the area?

A Yes, sir.

MR. CHRISTY: Does the Commission have any questions concerning the qualifications of the witness?

MR. NUTTER: No, sir. Proceed.

Q (By Mr. Christy) Will you briefly tell us what you seek



in the application in this case?

A The applicant seeks to dually complete our Federal MM No. 2 Well located in the southeast quarter of the northwest quarter of Section 8, 9, 37, Lea County, New Mexico.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification)

Q I'll refer you to what has been marked as Exhibit 1, and ask you to please identify that Exhibit for us?

A Exhibit 1 is a plat of the area showing the sublease outlined in yellow. It also shows the No. 1 Federal MM Well, and the No. 2 Federal MM Well, which is now drilling.

Q The No. 1 Well you just spoke of was the subject of a prior hearing before this Commission in Case No. 2208, was it not?

A Yes, sir.

Q You say the No. 2 Well is drilling. Could you tell us a little about the drilling of it, where it is now, and what your casing program, if any, is so far?

A Yes, sir.

Q Would you like to refer to Exhibit 2?

A Yes, let's refer to Exhibit 2.

Q Would you please identify the Exhibit for us initially?

(Whereupon, Applicant's Exhibit No. 2 was marked for identification)

A Exhibit 2 is a schematic diagram of the proposed casing and cementing program for the Federal MM No. 2. The surface pipe

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has been set in this well. It was set at 257 feet, and cemented with 225 sacks of cement. The cement circulated. Yesterday the intermediate string of casing was set at 4290 feet, and cemented with 1700 sacks of cement, and approximately 175 sacks circulated to the surface. Then we propose to set the production string of casing through the pay zone at approximately 9750 feet, and cement with approximately 350 sacks of cement in order to bring the top of the cement back up to 5100 feet.

Q And you will bring the cement back up to that?

A Yes, we will. We will run a temperature survey to see that the cement is back up there, and if it is not, we will put some more cement in.

Q So, in your final installation, you will have about 4,000 feet of cement?

A I believe it's about 4,000.

Q From the bottom to the 5100 feet?

A About 4600 feet, something on that order.

Q I assume you don't yet have a log on this No. 2 Well. You do have a log on the No. 1 Well, do you not?

A Yes. It was submitted in the previous case.

Q In the Case 2208?

A Yes.

Q The drilling characteristics on the present well have been substantially the same as the No. 1 Well?

A Yes. It's running, as I understand, about 10 to 20 feet



high to the No. 1 Well.

Q Of course, you haven't had a chance yet to test the San Andres and other formations at higher elevation from your proposed Bough C zone. Will you make those tests?

A The formation will be evaluated when drilled and be tested, if necessary.

Q Do you expect to encounter anything in the sand?

A No, sir, we do not.

Q Proceeding, again with Exhibit 2, will you tell us a little bit more how you propose to dually complete this No. 2 Well in order to permit the injection of salt water, as indicated on Exhibit 2?

A Yes, sir. The production will be from the Bough C zone at approximately 9650 feet or so. Then the second part of the dual completion we propose to dispose of salt water down the annular space between the intermediate string of casing and the production string of casing, as depicted by red arrows on Exhibit No. 2.

Q Let me stop you right there, Mr. Hampton. You say salt water. Do you expect to encounter salt water in the Bough C in this well?

A If we continue running the 10 to 20 feet high that we are running now. We have a possibility of making a water from the completion on this well, but we would anticipate water production from it sooner or later.

Q Your proposed installation would not only be for that



water, but water in the No. 1 Well?

A That is correct.

Q How much water are you producing out of the No. 1 Well at the present time?

A I would say that well is averaging about 250, 60 barrels of water a day.

Q Now, if you would go on a little bit more about how the salt water is going to be injected; for example, is this a closed or open system?

A It will be a closed system, and the salt water will be injected down the annular space. Initially, I believe the water will not require pressure to be disposed of. Eventually, we might have to put some pressure on it to dispose of it. It's something we don't know.

Q Now, what kind of water is this with respect to its corrosive qualities? Do you have an analysis of that water?

A Yes, sir. I would refer to Exhibit No. 3 now.

(Whereupon, Applicant's Exhibit No. 3 was marked for identification)

Q Would you please identify that Exhibit for us?

A Exhibit No. 3 is an analysis of the produced water from the Federal NM No. 1, which I had made by Treatright Laboratories in Monahans. I think they are well recognized as experts in their field of water conditioning of various sorts. The analysis of this water does show it to be quite salty, although it's not a



saturated water, but close to being saturated. The letter of recommendation, as attached by the water laboratory, in summary, it is the conclusion of this laboratory that the comparatively moderate corrosiveness of this water, plus the presence of suspended oil and the artificial inclusion of a corrosion inhibitor should render the water safe for disposal through the casing annulus. I think that is, in effect, what the letter said. They do consider it a mildly corrosive water, and do not think that it would be extremely difficult on our casing.

(Whereupon, Applicant's Exhibits 4 and 5 were marked for identification)

Q Mr. Hampton, would you identify for us Exhibits 4 and 5, which, I believe, are the Commission forms for dual completion and salt water disposal?

A Exhibit No. 4 is the Commission's form for application for dual completion. We have shown all of the proper information, I believe. The disposal zone is the San Andres, and the producing zone is the Bough C. The Exhibit No. 5 is the Commission's form for application to dispose of salt water by injection into a porous formation not productive of oil or gas, and we have answered those questions. This casing program is the proposed casing program as, obviously, we have not set the production string yet.

Q On Exhibit 5, I believe, it also shows the names of the offset operator and the surface owner, is that correct?

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A Yes, it does.

Q Was the State Engineer given notice of this application, and furnished copies of these Exhibits?

A Yes, he was. He has approved this disposal.

Q This is Federal land, is it not?

A Yes, it is.

Q Have you proposed this installation to the United States Geological Survey, and, if so, have you received any indication from them as to whether or not they might approve it?

A Yes, we have proposed the disposal to the United States Geological Survey, and they have indicated they will approve the matter.

MR. CHRISTY: I might state to the Commissioner at this time, we talked to the U.S.G.S. yesterday, and they said that they would look with great favor upon it, and if you would like to call them, they will be glad to tell what they would like to do.

MR. NUTTER: Will they withdraw this letter?

MR. CHRISTY: Yes, sir. We talked to them. That's the reason we went to see them, because of the letter.

MR. NUTTER: I thought you might go see them.

Q (By Mr. Christy) What are the economics of drilling a disposal well or otherwise disposing of the salt water from the No. 1 and possibly the No. 2 Well?

A Well, at this time we still do not know exactly what we

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have in the way of an oil field operation out here. The No. 1 Well, it looks like now, will make 60 to 70 barrels of oil a day. The No. 2 Well is still a question mark. We cannot at this time justify the economics of drilling a new disposal well. We would anticipate that if the area does develop as we think possibly it might, that at a future date we would either want to drill a disposal well or return this produced water to the producing formation.

Q Or pressure up the Bough C?

A Yes, sir.

Q I notice a well noted in Exhibit 1, down in the southeast, southwest quarter, Section 9. Could you utilize that as a disposal well?

A I don't think it could be done practically, and I do not believe we have the lease on that Section either.

Q Are there any other wells around that you might use for a disposal well?

A Not to my knowledge.

Q What's been done with the salt water at the present time for the No. 1 Well?

A It's been disposed of in a surface pit.

Q Were Exhibits 1 through 5 prepared by you or under your direct supervision?

A Yes, sir, except for the water analysis, which was prepared by the laboratory, using their own methods.



MR. CHRISTY: Here is Exhibit C, which is my affidavit. I did mail to the operators and surface owner a copy of the application. I believe that's all the direct questions we have from this witness.

MR. NUTTER: Does anyone have any questions from Mr. Hampton?

MR. MORRIS: Yes.

MR. NUTTER: Mr. Morris.

CROSS-EXAMINATION

BY MR. MORRIS:

Q Inasmuch as the only communication that we have received thus far from U.S.G.S was a copy of the letter that I believe you received indicating that they would not go along with your application in this case, could you explain briefly, for the record, your understanding of the U.S.G.S.'s position on this at this time?

A The U.S.G.S, the supervisor told us yesterday that the reason he wrote the letter was that he did not quite understand what the application was all about, and he had not received a copy of the log on the No. 1 Well. After seeing the log on the No. 1 Well and answering a few more of his questions, and assuring him that we could bring the cement around the production casing back up to 5100 feet, he said he would approve this installation.

Q And you say he is furnishing us with a letter to that effect?

MR. CHRISTY: He said he would, and he said, in the mean-

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while, if you had any questions, please feel free to call him.
That was Mr. Tomlinson.

Q Inasmuch as we have a copy of the letter in our file,
I think it would be well if we had a copy superseding it.

MR. CHRISTY: We'll be sure that you get one, Mr. Morris.

MR. MORRIS: That's all I have.

BY MR. NUTTER:

Q Mr. Hampton, Treatright Water Laboratories feel that the
disposal of this water in the casing annulus won't present any
particular corrosive problem, provided the water is treated. Do
you plan to treat the water prior to disposal?

A Yes, sir. We will follow their recommendation on treat-
ing the water.

Q Will you have any way of determining whether corrosion
is occurring or not? Will you run coupons in the annulus?

A Yes, we could run coupons. It would be certainly indirect.
It would have to be right at the surface. It would give us some
indication, I believe.

Q Do you intend to install a packer in the well?

A Yes, sir. This well will be produced under a packer,
probably a Giberson hook-wall packer set at the bottom of the
tubing, wherever the tubing is set. We anticipate right now at
7000 feet with a Kobe type installation, which does require a packer.

Q You will be lifting this well with a Kobe pump, then?

A That's what we are contemplating right now.

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Q Where will your four-hole go? Will it go down the four and a half inch pipe?

A No, sir. It will go down the tubing.

Q You will have another string of tubing for the pure oil?

A Yes, sir.

Q So you will have two strings of tubing in this four and a half inch pipe?

A No, sir, that's not exactly right. Yes, sir, it is right.

Q Will there be any way in which you can fill the annulus outside the two strings of pipe and the four and a half inch pipe with any kind of a sweet oil or naptha or any kind of medium?

A Inside the production string?

Q Yes. In other words, in the annulus outside the producing tubing, but within the production pipe?

A Yes, sir, it could be done.

Q And pressure that up so that you'd be able to determine if any leak should result in the four and a half inch pipe as a result of the interval of salt water on the outside of the four and a half inch pipe?

A That could be done.

Q You say that the No. 1 Well is now making from 60 to 70 barrels per day?

A Of oil.

Q And from 250 to 260 barrels of water per day?

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A Yes, sir.

MR. NUTTER: Are there any further questions of Mr. Hampton?

MR. CHRISTY: I would like to ask one more question. I might state we would be perfectly happy to comply with that suggestion, if you would like to put it in the order, of putting the oil in the annulus and pressuring it up. We will be glad to do that.

REDIRECT EXAMINATION

BY MR. CHRISTY:

Q Mr. Hampton, I didn't ask you, I don't believe, perhaps I missed your testimony on it. In connection with the surface casing, have you got a joint of pipe in the red beds up there?

A Yes. The 220 feet, like I said, we set 257 feet of pipe, so one joint and a few feet into the red beds.

MR. CHRISTY: No further questions.

MR. NUTTER: Does anyone have anything further they wish to offer in this case?

MR. MORRIS: Mr. Examiner, we have communications previously referred to by Mr. Hampton, one from the State Engineer's office, signed by Mr. Frank Irby, approving the application; the other letter being from the U.S.G.S., signed by Mr. Edwin M. Tomison denying the request. And these letters should be in the case file and be in the record of this case.

MR. CHRISTY: We will obtain the other letter for you



from U.S.G.S.

MR. NUTTER: You wish to offer these Exhibits?

MR. CHRISTY: Yes, sir, we would like to offer Exhibits 1 to 5, inclusive. We would like to also offer in evidence the log on MN No. 1 Well in Case 2208, referred to in this hearing.

MR. NUTTER: That log will be incorporated in this case. The Exhibits, without objection, will be admitted.

(Whereupon, Applicant's Exhibits 1 through 5 and the log were received in evidence)

MR. NUTTER: Does anyone have anything further to offer?

We will take the case under advisement.

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