

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

January 15, 1969

REGULAR HEARING

IN THE MATTER OF:)

Application of V. S. Welch)
for an exception to Order)
No. R-3221, as amended,)
Eddy County, New Mexico.)

Case No. 4024

BEFORE: A. L. Porter, Jr., Secretary-Director
Alex J. Armijo, Land Commissioner
Governor David F. Cargo, Chairman
George Hatch, Counsel

TRANSCRIPT OF HEARING

MR. HATCH: Case 4024, Application of V. S. Welch for an exception to Order No. R-3221, as amended, Eddy County, New Mexico.

MR. JENNINGS: I am James T. Jennings of Jennings & Copple of Roswell, on behalf of the applicant, V. S. Welch, and I will have one witness, Mr. Keohane.

(Witness sworn.)

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

B. M. KEOHANE

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

DIRECT EXAMINATION

BY MR. JENNINGS:

Q Would you state your name and occupation, please?

A B. M. Keohane, independent producer.

Q Mr. Keohane, how long have you been engaged in the oil business?

A 51 years.

Q Where have you generally operated?

A In New Mexico, in Eddy County.

Q Have you ever operated in what is known as the Shugart Pool?

A I have.

Q Is that generally where all your operations are?

A It is.

Q When did you commence your operations in that area?

A I guess in 1942.

Q Are you familiar with the application that has been filed here by Mr. V. S. Welch?

A I am.

Q Will you just state generally the nature of this application?

A Well, this application is for an exception to the salt water disposal order R-3221. We have in that area the south half of the Township, 18-31. While this application is V. S. Welch, he is the operator of these wells in question, we have drilled with cable tools in the area 63 wells that Mr. Welch has, that I have been a partner in, and I have been interested in about twenty more that were all drilled with cable tools in this area.

Q To what depth?

A To various depths from--we have some production at 2,700 to as deep as 4,400.

Q Before you proceed, would you explain why you are here on behalf of Mr. Welch?

A Well, Mr. Welch is in the hospital in Artesia, and he is quite ill, and probably won't make it too long. Mr. Welch is 88 years old.

Q Is he the operator?

A He is the operator of the wells in question.

Q What are the wells in question?

A There are six wells in the northwest quarter, and the north half of the southwest quarter of Section 27, Township 18 South, Range 31 East, Eddy County, New Mexico.

Q Mr. Welch is the operator?

A Mr. Welch is the operator of these.

Q Who are the working interest owners?

A The working interest owners are Mr. Welch; Keohane, Inc., which is a family company of mine; the Iverson heirs; and S. J. Iverson; and the heirs of Colonel H. P. Saunders.

Q Mr. Keohane, when were these wells drilled?

A These wells were drilled within the past three years.

Q Do you have any production figures for the oil production for the wells for the most recent months?

A The wells are producing an average of about 200 barrels a day. The production for November was 6,510 barrels of oil. The production for December was 5,764 barrels of oil. But one well was off production 14 days in December. I believe our

production would hold about the same without this well being off production.

MR. PORTER: About 6,500 barrels a day?

THE WITNESS: A month.

Q Do you have the figures on the water production?

A The water production varies some, but not very much. I would say from 150 to 160 barrels per day.

Q Is that water production increasing or decreasing?

A No, it stays about the same in proportion to the oil. As the oil goes down, the water seems to go down.

Q Where is the water being disposed of now?

A We have three surface pits that are by the Well No. 1, and two of them are pits that we made, and the other pit is where the caliche was taken out to make the mat for our No. 1 well, which was the old Pan American No. 5 that had been drilled as a deeper test, and they own the oil rights below 4,500 feet from the surface on this 3,600 acres, and we own the rights down to 4,500 feet.

Q Do you have what has been marked as Applicant's Exhibit Number 1?

A Yes, I have a copy here.

Q Would you refer to that Exhibit Number 1. Before that, Mr. Keohane, are you generally familiar with the soil conditions,

the topography, and the area generally?

A Yes.

Q Have you spent much time in the area down through the years?

A Yes, I have.

Q Referring to what has been marked as Exhibit Number 1, would you point out to the Commission the location of any water wells that you might know of in the area?

A There is a water well in the southwest of the southeast of Section 12 for domestic purposes at the lease house for the Maxwell Oil Company lease. There is a small well in Section 35 that we drilled for domestic purposes at our lease house in the southwest quarter of 35. Those are the only two wells in the township, or the township to the south. They were both drilled by oil companies for domestic purposes.

Q Is the well in Section 35 currently in use?

A No, we moved our lease man back to Loco Hills.

Q What was the quantity of the water available?

A Well, it was very little, and not too potable, although it could be used for household use.

Q Mr. Keohane, in drilling wells about which you spoke earlier, was any fresh water or water of any type encountered?

A No, not until we reached the salt or below the salt.

Q Are there ranches in the area?

A Yes, what is the north end of the John Rusk ranch. It now belongs to the Warren Snyder estate.

Q Do you know where the ranches get their water?

A Before the potash companies brought water over from the caprock, the Southwest Potash Company and the Potash Company of America, they got their water from surface tanks only. There was no windmill water in the townships.

Q Where are they getting water now?

A The pipeline companies out of a courtesy, they give them the water. They made several waters along their pipelines, and they give the ranches water out of those two pipelines that are shown by the green line.

Q Do you know where the potash companies get the water?

A On top of the caprock, about 14 to 15 miles east, from this location.

Q Is all that land below the cap?

A This is all below the cap.

Q What is the general nature of the terrain there?

A Well, massive sand dunes.

Q Have any of the oil companies attempted to develop water in connection with the drilling operations?

A Well, Pan American did on their first well, but there

was no water in there, so they bought water. In fact, they hauled brine from the potash mine for drilling water, and they drilled with gas on the second well because of no water being available in the area without buying it.

Q Are these surface tanks that the ranches formerly used, are they still in use?

A Any time it rains, they catch water. But I don't think the cattle use them much. They have good water troughs, you see, about every two miles in there.

MR. PORTER: And that water comes off the caprock?

THE WITNESS: From the caprock off the pipelines.

Q Are you familiar with the general drainage in the area?

A Yes, the general drainage is to the southwest. And I have some surface elevations from our location, that red line running southwest from our location, it is 316 feet lower to the Culberson-Iverson dry hole in Section 11, 19 South, 30 which is in the exempted area for the potash area.

The drainage to the well down in Section 18 of 19-31, it is down dip 234 feet, the surface elevation.

I might point out that in all these years, no rancher has ever taken the trouble to prove up on a homestead, or anything else in those two townships, because of the lack of water is the reason, I presume. There is no patented land in either

township.

Q Referring to Exhibit 1, does that reflect the part of the area that has been previously exempted from Order R-3321-B?

A The part outlined in yellow in 19-30 southwest, about three miles southwest to the nearest part of it from this location that we are asking the exemption.

Q Mr. Keohane, do you still own any wells that you spoke of that you drilled in the area?

A No, we owned some. We sold to Atlantic for waterflood 22 wells immediately south of this area, where they are at present instituting a waterflood. And then to the west in Sections 29 and 30, and part of 28, we sold to the Shenandoa Oil Company 33 wells, which they are at present instituting a waterflood in the area.

Q Are you familiar with the results of any of this waterflood?

A The Atlantic has not achieved any results yet in the one they are attempting south of us. I believe that, if they inject more water, they might get better results, but they have not received any results. I get the report every month.

MR. PORTER: Do you know whether Shenandoa has had a response?

THE WITNESS: No, they haven't been going very long,

but they are putting quite large volumes in, and I expect them to get results before Atlantic does. In fact, they are injecting probably as much water per day as the Atlantic injection in a month. They are only running their pumps about two hours. They are having to buy the water, and I can see from the economical side of it that they are buying the water to inject.

Q Do you contemplate a waterflood project in the area?

A At a later date, we will instigate one ourselves, when we see some of the results of the Atlantic well to the south. But we are letting them do the pioneer work for us, because they have a little more money.

Q Do you know of any fresh water, either surface or other waters, in the vicinity that is available at this time?

A For livestock?

Q For livestock or any other purpose?

A No, I do not. I presume there is a little livestock water, but I don't know if they use it. It is a ranch house over in 18-32 in the southeast quarter of 7. There is a windmill there that makes enough for domestic water. That is Mrs. Lyman of the Virgil Lyman estate. They have a small ranch there.

Q How far is that?

A That is a little over four miles. But they also get

their livestock water from the pipeline.

Q In your opinion, will continued disposal of water in volumes you have mentioned into the pits contaminate any fresh water?

A No, because I don't believe--of course, there is none in there in the first place. In the second place, as I outlined here, the drainage is over 300 feet in four miles toward the potash area, which is all brine on the surface.

Q Would the continued disposal of water into the present pits be in the nature of conservation, and prevent waste, and prevent the expenditure of unnecessary funds?

A It surely would.

MR. JENNINGS: That is all.

MR. PORTER: Mr. Keohane, aside from the waterflood that you have mentioned, are there any disposal wells in this Shugart area?

THE WITNESS: No, there is not a disposal area.

MR. PORTER: Does anyone else have a question?

MR. JENNINGS: Mr. Keohane, was Exhibit Number 1 prepared by you?

THE WITNESS: Yes.

MR. JENNINGS: We offer Exhibit Number 1.

MR. PORTER: If there is no objection, Exhibit Number

1 will be admitted.

(Whereupon, Applicant's Exhibit Number 1, inclusive, was admitted in evidence.)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Keohane, the main body of the Shugart Pool would be west of this subject area in Sections 29, 30, 31, and 32, and also south in Section 34, and Sections 3, 4, and 5 of the township to the south, is that correct?

A That's correct.

Q When was the development of the main body of the Shugart Pool?

A The original Shugart Pool was the wells over there that we drilled in 34 and 35, and then we drilled these over to the west.

Q So the area that Atlantic has was the original area?

A That was the original Shugart Pool. Way back at one time, there were 48 square miles in the Shugart Pool, and then they called it the Shugart Pool, and then the North Shugart Pool at one time, and then they have made extensions. We have pays from several different formations. In fact, some production is from the Seven Rivers, the Yates, the Upper Queen and Lower Queen, and even some in the Grayburg area in our property down

to 4,500 feet.

Q When was the area in Sections 34 and 35 developed, the Atlantic area?

A In the early 40's.

Q Now, the area to the west, Mr. Keohane, in Sections 29 and 30, where Shenandoa is working on?

A That was only in the last three years.

Q That is recent production?

A Yes.

Q Did it decline quite rapidly?

A Quite rapidly. That is the reason we sold it to Shenandoa. It looked like it needed a waterflood.

Q This area where you are seeking this exception today was also drilled about three years ago, but it hasn't declined so rapidly, that is the difference?

A This hasn't declined so rapidly, and it was drilled later. These wells in the west half of 27, they were drilled after we had turned this in to Shenandoa, while we were dickering with that.

Q Well, it would appear just from a cursory inspection of your map that with the dry holes that are in Section 28, and also the dry hole that is south of your subject area, that this may be a separate little pool or separate little structure of

its own.

A Well, sandstone or pinchout. I don't think structure means much. I don't show it, maybe, on those plats, but right to the west in Section 28, Van finally got a farmout from Gulf, and he completed a well there in the southeast corner of the northeast of the northeast of 28, and made about a 200 barrel well, where they just drilled a dry hole with a rotary.

Q That would be in the same 40 that that Fullerton well is in?

A That's right. And he is now drilling the offset to it to the south.

Q Down where that Mask dry hole is?

A Between the Mask dry hole and the one Gulf drilled there. And he will get a well there with cable tools, because they were going to look at the Delaware. Gulf owns all the rights in Section 28. Pan American only owns below 4,500 in Section 27.

Q What is the average potential for these wells in Section 27?

A They were pretty good wells. I would say they would all make--Van always turns them in over a hundred. Some of them would make two hundred, and some of them would make two hundred fifty, and some of them one hundred, but they were all over one

hundred.

Q Now, the six wells together are making about two hundred?

A About two hundred a day.

Q So that would be approximately thirty or thirty-five barrels each, average?

A It was a peculiar situation. Van had some tax problems, and he wanted to drill some wells, and I said, well, you take them and drill them, and you get your money back in six per cent and then give them back to us, which he did. And they paid out about two years. He drilled them and got his money back at six per cent, and gave them back to us, which was a pretty good deal for all of us.

Q The reason I was asking the question of the original potential and what they have dropped off to, I was trying to get an estimate when they might be put on flood?

A Well, Van was a little worried over here in the Shenandoa. He wanted to sell that out, and he got these wells and started making quite a little water. He wanted to get rid of them. I said that is the only reason they are making oil, is because the water is washing them in there, we might have a waterflood instead of by injection. So I said, let's keep those wells, which we did, and they held up better than any. No

other wells we have in there have a water drive. I think there is a water drive in there. The others are gas solution. There is a little natural water in there. Where there might happen to be, there is bound to be some water drive.

See, to the south there in Section 4, the old Quillen well, we have a well there that has produced some 300,000 barrels of oil from 2,700 feet, and never produced a drop of water. But there is bound to be some water pushing it from some place. That is in Section 4.

Q 19-31?

A Yes.

Q And you have a water well you drilled in Section 35?

A That water well in 35 was for the lease house. We had a lease house down there, and kept a man down there all the time. I said, let's see if we can't get a little water well, and we went in there and got a little.

Q At what depth?

A It is about 380, I believe.

Q Do you know whether that is in the --

A Down in the Redbeds.

Q So that would be a Triassic?

A Triassic, I presume.

Q What is the capacity of that well?

A We have a little pumping unit on it with an electric motor. We have electricity there to pump those oil wells, and I would say that we have a little 65-barrel tank there, and I would say it would probably fill that tank in about two days for domestic water.

Q Two days to fill a 65 gallon tank?

A Yes, that is about what it would do. We have it up on a tower there for the lease use, for the lease house use, but we are not using it now. In fact, our man is staying up at Loco Hills.

Q That would make something over a barrel an hour?

A Probably. It is a little tiny pump we have on it. We could fill that tank in a couple of days.

Q 65 barrels in 48 hours?

A Yes, I believe we could fill it in two days, maybe three. I don't think we ever took a gauge on it to see. We never could make enough to furnish a cable tool rig, and they don't use much water. We don't use it now, we moved our man up to Loco Hills. When we sold those shallow wells to Atlantic, we retained our warehouse and our little lease house there, we retained those improvements on that property.

Q Atlantic doesn't have the right to use that well as a water source for its flood?

A No, there is not enough. They are buying their water from one of those water companies. And the Shenandoa is buying theirs from a water company.

Q Now, did you mention the quality of the water in that well?

A It is not too bad. It is hard water, but you can drink it.

Q It is not salty?

A No, it is gypsy, but you can drink it.

Q What is the relation of that well to the structure?

A That well is down dip. I believe it is about 50 or 60 feet. Right there by us, we have 3,661 on that Pan American No. 3 well, and it is down to 3,625, that is about the average elevation. Approximately all of the dip of the topography is south and west.

Q Do you have a surface elevation there anywhere in Sections 34 or 35?

A Yes, on the well No. 2 there, which is 40 diagonally south of where our little water well is, I have an elevation on the No. 2 that shows City Service there, of 3,625.

Q That is the well in Unit P of Section 34?

A Yes, the southeast southeast.

MR. NUTTER: I believe that is all.

MR. PORTER: Does anyone else have a question of the witness?

Mr. Keohane, what did you say had been your experience as far as encountering water was concerned? I believe you said that you had participated in the drilling of some 60 odd wells?

THE WITNESS: There are 83 in the south half of that township. We had the whole 7,200 acres there at one time. We still have, oh, probably half of that.

MR. PORTER: You didn't have any water problems when you drilled?

THE WITNESS: We never found any water. We would like to have found some for water wells.

MR. PORTER: Does anyone else have a question of Mr. Keohane? You may be excused. Does anyone else have anything to offer in this case? The Commission will take the case under advisement, and call Case 4026.

I N D E X

| <u>WITNESS</u> | | <u>PAGE</u> |
|------------------------------------|--|-------------|
| B. M. KEOHANE | | |
| Direct Examination by Mr. Jennings | | 2 |
| Cross Examination by Mr. Nutter | | 12 |

| <u>EXHIBITS</u> | <u>MARKED</u> | <u>OFFERED AND ADMITTED</u> |
|---------------------------------|---------------|---------------------------------|
| Applicant's Exhibit Number 1 | 2 | 12 |

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

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


COURT REPORTER