TATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

28 November 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Chaveroo Operating Co., for five unorthodox oil well locations and a nonstandard proration unit, Roosevelt County, New Mexico.

CASE 8422

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

E X H I B I T S

MR. STOGNER: We'll call next Case Number 8422.

MR. TAYLOR: The application of Chaveroo Operating Company, Inc., for five unorthodox oil well locations and a nonstandard proration unit, Roosevelt County, New Mexico.

MR. KELLAHIN: If the Examiner please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant, and I have one witness to be sworn.

MR. STOGNER: Are there any other appearances in this case?

Being none, will the witness please stand and be sworn?

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, for convenience sake, on Exhibit Number One we've simply identified each of the five unorthodox well locations by a number. The number corresponds to the docket sheet, which, if you read from the top downward and number those, you'll get the right well name.

MR. STOGNER: Thank you, Mr. Kellahin.

WILLIAM J. GRAHAM,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Graham, for the record would you please state your name and occupation?

A William J. Graham. I'm an engineer and manager and president of Chaveroo Operating Company.

Q Mr. Graham, as an engineer have you previously testified before the Oil Conservation Division?

A Yes, sir.

Q And as an engineer have you prepared and compiled information and exhibits with regards to this application?

A Yes.

MR. KELLAHIN: We tender Mr. Graham as an expert engineer.

MR. STOGNER: Mr. Graham is so qualified.

Q For the record, Mr. Graham, would you please take what we've marked as Exhibit Number One and identify for us the five proposed unorthodox well locations.

A Okay, they are numbered one through five and the number one would be the Anderson State No. 10.

Number two would be the Muble Federal No. 9.

Number three would be the Tucker No. 5.

Number Four would be Tucker Hall No. 9.

And number five would be the KMS No. 6 well.

Q The Exhibit Number One has well locations other than the unorthodox locations indicated. What is the principal producing formation involved?

A The San Andres zone is the primary, principal production zone in this Empire Chaveroo Field.

Q For purposes of this application are you seeking an order that approves the unorthodox location for any of the oil zones from the surface to the base of the San Andres?

A Yes, sir.

Q But in this area the principal oil production is in this San Andres zone.

A The only known oil production at this time is the San Andres. There have been very weak shows potentially from the Queen and potentially from the Grayburg intervals.

Q Would you generally describe what is the reason you're seeking the five unorthodox locations?

A Well, the two primary reasons, one is that in taking the initial wells that were drilled back in '66, '65 and '66, we have asked Halliburton to take those

wells, or a sampling of those wells, and give us an effective or a propped link for the fracture treatments that were used in those wells.

Based on that data it appears on a circular drainage pattern, assuming a 100 percent effectiveness of the fracture, 18.6 acres could have been stimulated.

We question, because of the rates of fracture treatments and also the concentration of sand, that those fractures were not 100 percent effective. The amount of sand used then versus now to fracture the same type of zones is roughly one-third of that that we would use if a sand fracture was used at this time.

Also the rates with the number of holes that were perforated for most of these wells would not have performed a limited entry frac.

For instance, the CWS No. 2 Well, which is one that seized the entire interval, had approximately 36 holes and the frac rate in that casing of 5-1/2 inch size was 32 barrels per minute.

Today we would be approaching 40 barrels per minute and only 20 to 23 holes in 4-1/2 inch casing, and we do not believe these zones were properly fractured in those wells.

Q What do you propose to gain by drilling wells at the five unorthodox locations?

A Well, this would provide us with some wells that would survey this entire interval, top to bottom,

which we own in two section -- basically three or four sections.

We hope to gain approximately 30 to 35,000 barrels of oil per well. This is not only based on our analysis but based on an independent analysis of engineers in Houston, Patterson and Powers Group, which they evaluated approximately 15 different locations and based on that there was a total of approximately 519,000 barrels estimated to be recoverable, and that's an average per well. Some wells may do better than others and some may not.

Additionally, many of the wells in the sections that were drilled on 40 acres have not penetrated or either did not perforate all of the P-3 and the P-4 intervals in these wells and we hope to gain some additional drainage from that, as well as deepening some of the existing 40-acre wells to the P-3 and P-4.

Q Back in 1983, Mr. Graham, did you present to the Commission on behalf of a Mr. Joe E. Brown a similar application for San Andres infill oil wells?

A Yes, sir, we did, and that was granted and one interesting, very interesting point that we learned from that, on a 20-acre location, while fracing a well we had a pressure bomb in the offsetting corner well, which would have been No. 24 which we were fracing. We estimated bottom hole treating pressures at that time approximately 2000 psi. The measured pressure in the offset well was approximately 500 psi, and never changed during the entire

fracing operations, either during or shortly thereafter for almost a 24-hour period of time.

So we have concluded, and that was oriented, we thought, in the most optimum way to detect pressure.

Also in the correlations with the 20-acre spacing wells that have been drilled over there, while the basic zones can be correlated, but inidividual sand stringers or individual porosity stringers cannot be correlated even on some 20-acre spacing wells.

So we feel there's a substantial amount of oil in this field that cannot be recovered if it remains on 40-acre spacing.

Q Let's turn at this time, Mr. Graham, to the subsequent exhibits. It would be Two, Three, Four, Five and Six --

A All right.

Q -- and have you identify each of those.

A Okay. Exhibit Number Two is for the Anderson State No. 10 Well. On the map I believe it is marked as the No. 1.

Q All right, sir.

A Exhibit Number Three is for the Humble Federal No. 9, and I believe on the map it is marked as No. 2.

Exhibit Number Four is for the Tucker No. 5 Well, which on the map is labeled as No. 3.

Exhibit Number Five is the Tucker Hall No. 9 Well, which on the map is labeled No. 4.

And the Exhibit Number Six is KMS Well No. 6, labeled as No. 5 on the map.

Q Let me now show you Exhibit Number Seven, which is the log that we have submitted to the Examiner. Would you identify that for us?

A The log submitted is the CWS No. 2 Well, located in the southeast of the southwest quarter of Section 36, Township 7, Range 32 East.

You will note on that log that it covers the entire interval from what we correlate as the pi section, which occurs at about 4033 feet through the total productive interval we consider to be down to approximately 4500 feet.

You will note the perforations that were utilized in that well.

Many of the wells in this area, and they may be denoted in blue on the next exhibit, did not penetrate the zones below approximately 4300 feet in the CWS Well No. 2, or either were not perforated in those intervals with more than one or two perforations.

Our intent is to drill these wells, log them with a current log suite where we can better determine lithology, porosity, and water saturations. Most of the wells in this old area have been drilled only with a neutron density -- neutron gamma ray log, and it's very difficult to

correlate precisely the productive intervals, but we believe most of that interval that is represented in CWS Well is productive over this entire section where we want to drill these additional wells.

Q Let me direct your attention now to Exhibit Number Eight, which you've referred to earlier, and have you identify that for us.

A That's this one here?

Q Yes, sir.

A That particular exhibit shows the underlying numbers as the cumulative production numbers through September of 1983, which came off the Oil and Gas Commission reports.

The number -- the well noted in blue are wells that have not seen the entire productive interval as represented in the CWS No. 2 Well. Those are wells that either stopped short.

We cannot, from examining the records and past well records, determine why that happened unless it was due to some lost returns.

Based on the log analysis on offset areas and in the field we can find no reason to stop drilling at that location, and so we believe there is additional oil there that has never been drained, even from the deeper zones within this area.

Q And now --

A The other numbers that are reflected on

that are the plus numbers are a marker which we have mapped on and you can see generally the trending up toward the Tucker acreage to the northwest as being higher. This is one of the higher parts of the field as you contour through this interval.

Q If you'll turn to Exhibit Nine, now, Mr. Graham, and identify that for us.

A Okay. Exhibit Number Nine was actually the pressures and what we were doing in Well No. 24. It reflects up at the top Well No. 23. That's incorrect. It was actually Well No. 24; was performed by Dresser-Titan, which was a foam acid job, and the -- you can see from the tubing pressures, and we were estimating bottom hole treating pressures to be approximately 2000 pounds.

The second part of that, where you have tabulated pressures that were occurring on a well in question, is No. 5, which was an observation well, and it's marked where we began the frac and where we terminated the frac, and the pressure that we picked up is also reflected in a chart showing the stabilization of the pressure in the offset well and there's also been noted on there the time of the frac while that well was being observed with a bottom hole pressure bomb.

We got absolutely no response, and the plat that's attached to it locates No. 24 and No. 5 on that particular lease and location.

Q From the pressure information in the Far-

rell Federal No. 24 Well can you conclude that you're not gtting adequate drainage based upon that pressure information from wells spaced on 40-acre spacing?

A We believe very strongly that we're not. There has been some pressure influence, you know, influence from the other wells but we are definitely not draining these other locations from these 40-acre locations based on what we could see in results.

We actually think we had pressures approaching 800 to 1000 pounds in some of the 20-acre locations, which is substantially higher than what we've experienced in the old wells.

Q In your opinion is it necessary to have a second well on these 40-acre proration units to recover oil that will not otherwise be recovered by the existing wells now located on those 40-acre tracts?

A Yes, sir.

Q This in effect, then, would be an infill program to recover the additional oil that is not expected to be recovered in the San Andres zone by the current wells.

A That's correct.

Q Let me ask you this with regards to the allocation of production, the wells are located close to the center of the quarte quarter section lines. How do you propose to allocate the production among the owners of the adjoining 40-acre tracts?

A Where there's any discrepancy in the own-

ership of either the working interest, override or royalty interest, we would allocate that on the basis of well test production, which we think will be fair and equitable in all cases in here.

These wells, once they're reasonably stabilized, pretty well do the same thing every month. They don't fluctate a great deal.

MR. KELLAHIN: Mr. Examiner, we have -- are in the process of completing contractural arrangements with the working interest and overriding royalty owners so that it's not necessary to have the Commission approve nonstandard proration units.

I have been advised by Mr. Stamets that we may dismiss that portion of our application that requests the approval of nonstandard proration units and that seeking approval of the five unorthodox well locations is all the action that is required by us before the Commission.

MR. STOGNER: Thank you, Mr. Kellahin, the record will so note.

MR. KELLAHIN: Mr. Examiner, at this time we move the introduction of Mr. Graham's Exhibits One through Nine.

MR. STOGNER: Exhibits One through Nine will be admitted into evidence, and I have no questions of this witness.

Are there any other questions

of Mr. Graham?

MR. KELLAHIN: No, sir.

MR. STOGNER: If not, he may be excused.

Mr. Kellahin, do you have anything further in Case Number 8422?

MR. KELLAHIN: No, sir, not in this one.

Anybody else have anything further in Case Number 8422?

If not, the case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8422, heard by me on November 28 1984.

Michael E. Stogner, Examiner
Oil Conservation Division