BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
NOVEMBER 30, 1960

IN THE MATTER OF:

CASE 2132 Application of Humble Oil & Refining Company for permission to commingle the production from several pools. Applicant, in the above-styled cause, seeks permission to commingle the production from the following pools underlying the State "V" Lease consisting of the SW/4, W/2 SE/4, and NE/4 SE/4 of Section 10, Township 21 South, Range 37 East, Lea County, New Mexico: Blinebry Oil Pool, Brunson Pool, Drinkard Pool, Hare Pool, Tubb Oil Pool, Wantz Abo Pool, Blinebry Gas Pool and Tubb Gas Pool, with allocation to the various pools being based on monthly well tests except that separate metering and separation facilities would be used for oil well and gas well completions.

BEFORE:

Daniel S. Nutter, 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. NUTTER: We will call now Case 2132.

MR. MORRIS: Case 2132. Application of Humble Oil & Refining Company for permission to commingle the production from several pools.

MR. BRATTON: Howard Bratton, appearing on behalf of the applicant.

(Witness sworn)

LEE N. PERRY,

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

DIRECT EXAMINATION

BY MR. BRATTON:

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

A I am Lee Perry. I work for Humble Oil as senior engineer.

Q Have you previously testified before this Commission as an expert witness, Mr. Perry?

A Yes, sir, I have, sir.

Q Are you familiar with the area in question and the request in Case No. 2132?

A Yes, sir, I am.

Q What is the purpose of that request?

A We wish to produce the twelve wells on numbers into a common tank battery. This lease is 280 acres, the south half of Section 10, Township 21 South, Range 37 East, Lea County, New Mexico. This is just north of Eunice. There are ten non-top allowable oil wells producing from six zones which would be metered together with a production directed by well test. Production from a dual gas well would be metered also with complete metering facilities provided. The production from those eight prorated pools would be commingled into common tankage.

Q What pools are involved, Mr. Perry?

A They are: (1) Blinebry Oil Well; (2) Brunson Oil Wells; (3) Drinkard Pool; (4) Hare Oil Wells; Tubb Oil Pool, and Wantz Abo Oil Well, and the two duals are Blinebry-Tubb Gas Wells

Q Did you prepare a plat of this lease, Mr. Perry?

A Yes, sir.

Q "NM" on Exhibit No. 1 in the upper right-hand side?

A I didn't notice that.

Q Is the ownership of production common?

A Yes, sir. State of New Mexico is the sole royalty owner, and, by the way, we have a letter dated November the 14th, 1960 from the Commissioner of Public Lands approving our proposed commingling procedure.

Q Do you have a copy of that letter with you?

A Yes, sir, I do.

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

Q Mr. Perry, referring to what has been marked as Exhibit No. 1, what does it show?

A It shows the existing facilities on the New Mexico State "V" Lease. Down in the lower left-hand corner, actually over to the left side there, also shows the location of the wells and batteries on the lease and the offset operators in the upper right-hand corner. I have used a color legend to the existing facilities on the existing batteries. They will net, there are actually seven batteries containing nine 500-barrel tanks. Two flow treaters are

shown, but in time there is no doubt that the others will have to be installed. We feel they eventually will be needed to deplete the lease with the existing facilities.

Q What are the producing characteristics of the wells, Mr. Perry?

A The oil wells are non-top allowable with total production in October of 145 barrels of oil per day, and there is a definite trend of declining production. This is an average of 15 barrels per day per well with some wells making as low as -- here was 4 barrels, actually 2 barrels on the two Hare Wells, have production at present. Dual gas well characteristics, 34 barrels of 52 condensate for total lease production of 179 barrels.

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

Q Refer to Exhibit No. 2, Mr. Perry. Is that a schematic diagram of your proposed facility?

A Yes, sir. Exhibit No. 2 shows piping and equipment that will be used in -- we propose to use in the commingling of this production. There is a legend over in the lower left-hand corner, you might notice, to make things a little easier to follow. At the bottom header for the two gas wells on the left and the ten oil wells on the right. The pattern of the combined oil production is shown in red, passing first through a three-phase separator, then through the meter and sampler, and then to the tanks or through the treater, as required. The pattern of the condensate from the gas

wells is shown in green as follows: a similar sequence of equipment. In orange is shown a route for production on well tests. The test will be routed by the proper zone meter, as I have shown here, so the two zones meters at all time show less production.

MR. NUTTER: Three phases on the gas header?

A Yes, sir.

Q Do you run the production from the gas wells on this lease through two-stage separation?

A Yes, sir.

Q Actually, one phase missing, is that right?

A Yes, sir. It's on back down the line. Those are high pressure separators and are near the wells.

Q Referring to your test facilities --

A The test facilities include water and gas meter besides the dump type oil meter. Using these facilities, the oil meters would be meters as a small percentage of water with the oil that amounts which was as the three-phase separator. This would normally be in the form of emulsion. In tests that we have run on these on this set-up, this has amounted to 1.2 to 2.8 percent of the total metered fluid. Meter reading would be corrected by the sampler shakeout. Result on oil production or condensate production would be allowed to the wells on the basis of monthly well tests which we propose to take. We are doing this. As I said, these wells are all pretty far down the line on depletion. We are taking -- those monthly tests are for our own use anyway.

Q What equipment are you using and propose to use, Mr. Perry?

A Let me add one thing before we get away from this point. I would like to make one statement here. In case that down the line we do some working over, or, say, any one of these wells does become a top allowable well, we would certainly feel that that zone or that well should be metered separately and correlated to get your desire and agreeable to putting that extra meter in. Now, the facilities, we intend to use a conventional one-barrel plastic coated dump type meter. I think those have been presented, well accepted as zone meters in New Mexico. A proportional sampler from National Tank Company, Hi Bond, or Simmons Company, Inc., along with a conventional gas or phase meter and commercial water meter would be employed.

Q Have you had experience with this type of equipment, Mr. Perry?

A Yes, sir, for the past six months we have had a three-phase meter and sampler of a type we propose to use in operation on Brunson production on the State "V" Lease, that is, Wells 3 and 6.

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

This Exhibit 3 is a resume of the results of our testing for the past four months. We have compared the metering and sampler results there against tank gauging and variation of eighteen-hundredths

of one percent for the past four months. That's five barrels out of 28. As you see, the first two months we spent juggling this thing around trying to be sure that the meter itself and the sampler were getting good results, satisfied ourselves to see that before we put the production through. It's on this resume. There on Exhibit 3, if you will notice the water percentage, we have varied the water percentage from, in the meter fluid, from about 1.2 percent to 63 percent and have found no predictable variation in the meter and sampler accuracies. We feel on the basis of these tests that the meter and sampler accuracies have been fully established. The difference between the meter and gauge volume for weekly periods is always less than 2 percent. Now, this test was conducted on a pool or on production about 18 to 24 barrels of oil per day, and I think probably that statistically our accuracies should be increased or percentage accuracies should be increased by the increased volume of production it would be put through.

Q You are satisfied with the accuracies that your variation would not exceed 2 percent?

A I am more than satisfied, I am very pleasantly surprised myself.

Q Will this installation serve the interests of recoveries and protect correlative rights, in your opinion, Mr. Perry?

A Very definitely. As we said, this is practically a completed area down there, and we stand to be able to salvage about six thousand dollars worth of equipment that is on -- not on the

new price, but on the second-hand price. In addition, with the continued depletion of the lease we would have to install four additional treaters which would cost us about sixteen thousand dollars to handle the water production as the completion continues. There will also be a considerable reduction in pumper's labor for this lease due to the reduced number of tanks to be gauged and the complete testing facilities they have provided. The price for the commingled crude could be slightly higher than the total of the separate prices. It totals around five dollars a week, so they are just approximately the same. Where we have here leases making, oh, say, like the Brunson, 20 barrels going into 500 barrels, it takes quite a while to fill that tank up. The operator can certainly afford to produce a lease of this depleted type, to a lower limit production with the economics provided in these, in a commingling set-up of this type, I don't know. I certainly would hate to be pinned down just how much, it's bound to be a certain additional recovery in something like that. For that reason, we feel our request is in the interest of economy and prvents waste.

Q Were Exhibits 1 through 3 prepared by you, Mr. Perry?

A Yes, sir.

MR. BRATTON: We would like to offer Exhibits 1 through 3 and also Exhibit 4, which is a letter from the Public Land Commissioner.

MR. NUTTER: Humble's Exhibits 1 through 4 will be entered in evidence.

(Whereupon, Humble's Exhibits Nos. 1 through 4 were received in evidence.)

MR. BRATTON: We have nothing further to offer.

MR. NUTTER: Any questions?

CROSS-EXAMINATION

BY MR. PAYNE:

Q Mr. Perry, what is the commingled value of the hydrocarbons as compared to the value on there in separate tanks?

A Approximately five dollars a day, more for the commingled products.

Q It will be more?

A Yes, sir.

Q Now, are you going to separately meter the production from each of the gas wells, or is that one meter?

A One meter for the two gas wells.

Q How do you know how much to attribute to the Tubb and Blinebry in this case?

A We will take monthly tests and allegate it back.

Q Do these gas wells generally make their allowable?

A In general, yes, sir. They have done probably better than most of the others.

Q So that actually you need an exception to Rule 403, that gas wells be separately metered, the production from each gas well?

A I guess I do, Mr. Payne. I didn't realize it.

MR. NUTTER: Are you going to measure the gas separately?

A Oh, yes, the gas will be measured separately. The condensate will be put together, this is condensate only.

MR. PAYNE: I see.

A I beg your pardon.

Q (By Mr. Payne) You will meter the dry gas separately?

A Yes, the condensate will be commingled, the gas will be metered separately. I beg your pardon.

Q I notice on your Exhibit No. 1 you have a burning pit up in the corner. You get a permit from the District Office in Hobbs before using that?

A I don't know how long it's been since we burned on that.

Q Mr. Perry, Exhibit 1 shows the installation as it is presently.

A Yes.

Q Then Exhibit 2, what you are planning to install?

A That's right.

Q Is it possible for the oil production to pass through the three-phase separator, through the meter and sampler and directly into the stock tanks if it should be stock tank quality oil?

A Yes, sir.

Q I presume that would be on the third line up, sir?

A Go right on up to the third line and just joining, right on up, and join the gas flow in the top line there. Go either way, actually. That's so that, we have that header arranged so it's completely flexible.

Q Is it manually operated?

A Yes, sir, manually.

Q Only the production pools, the red line and through the treater?

A Yes, sir. It would have to because actually the only wells we have right now that are making much water are the Brunson and the Hare.

Q Those are the two that are going through these treaters that are shown on Exhibit 1?

A Yes, sir.

Q What size treater will you install?

A 8 by 32. We've already got the one there.

Q You will use the same one you are using at the moment on the Brunson?

A Yes, sir.

Q Is it of adequate capacity to handle Brunson as well as the Hare?

A Adequate to handle everything after it's commingled. We will have to put everything through there.

Q These meters, the one for handling the fluids from the gas pools and the one for handling the oil from the oil pools are one-barrel dump meters?

A Yes, sir. You also have a meter for metering the fluids on the test leg of the thing.

Q Is that a one-barrel dump?

A Yes, sir.

Q What kind of meter is that for metering the water on the test?

A Just a commercial water meter. We have Pittsburgh. Pittsburgh makes them, I think. That is the kind we normally use. Just like a house water meter. We had very good results, we use quite a few of them, actually. We are using quite a few of them at present. We have good results. They have been dependable, seem to be pretty tough and aren't always broken, and we get just plenty good results with them.

Q In combining the data for Exhibit No. 3, you ran a series of tests from June through October of this year --

A Yes, sir.

Q -- in which you passed the production through a meter and then on into the tanks and gauge the tanks, correct?

A Yes, sir.

Q What type of meter were you using here?

A Exactly what we'll be using -- what we are proposing to use.

Q One-barrel dump meter?

A I intend to use the hole between, I didn't intend to move it, leave it right where it is sitting in the position there in the set-up where we propose.

Q Three 500-barrel tanks, that's going to provide adequate storage?

A That would be 179 barrels per day now and decline.

Q So you have adequate storage for several days' production?

A Plus one tank that would be left for test most of the time. It would be testing quite often there.

Q None of these oil wells are capable of making top allowable in the pool in which it is completed, is that correct?

A That's not the one I said is non-top allowable, it's penalized due to GOR.

Q Its allowable as assigned to it is less than top allowable for Drinkard Pool?

A Here again, in November it was assigned full allowable. On the 20th of October we sent in GOR tests showing GOR over 6800. Well, six thousand is the permissible GOR. So in December it will have a GOR allowable of 40 barrels.

Q Is this penalized allowable?

A Yes, sir.

Q What has been the trend as far as the GOR on this well is concerned? It's going up?

A It's been steadily going up.

Q You anticipate that this well will be assigned top allowable?

A I can't foresee. When a well does get top allowable and we find out what we need to do to get our producer equipment in line with your desires. If we are always looking for ways to in-

crease or take and looking for ways to work these wells over. Right now we don't foresee any. If they come up, we've already thought that one out.

MR. NUTTER: Any further questions of Mr. Perry? You may be excused.

(Witness excused)

MR.NUTTER: Do you have anything further for Case 2132, Mr. Bratton?

MR. BRATTON: No, sir.

MR. NUTTER: Does anyone have any more for Case 2132? We will take the case under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, LLEWELYN NELSON, 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.

WITNESS my Hand and Seal this, the 12 day of Dec., 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Llewelyn Nelson
NOTARY PUBLIC

My Commission expires:

June 14, 1964

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2132, heard by me on 11/30, 1960.

..... Examiner
New Mexico Oil Conservation Commission