

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
January 27, 1960  
EXAMINER HEARING

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IN THE MATTER OF:

Application of Gulf Oil Corporation  
for authority to commingle the pro-  
duction from four separate leases and  
for approval of an automatic custody  
transfer system to handle said com-  
mingled production.

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) Case 1872  
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District Lawyer for Gulf Oil Corporation. Our witness in this case is Mr. Hoover.

(Witness sworn.)

JOHN HOOVER

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

DIRECT EXAMINATION

BY MR. KASTLER:

Q Will you please state your name, your place of residence and your position with Gulf Oil Corporation?

A John Hoover, Roswell, New Mexico, petroleum engineer.

Q Have you previously appeared and qualified as an expert witness and given testimony before the New Mexico Oil Conservation Commission?

A Yes, sir, I have.

Q Are you familiar with Gulf's application for approval of an automatic custody transfer system and requesting exception to Rule 339 leases Lea-State "AP", E/2 of Section 30; Lea-State "AQ", N/2 of Section 32; Lea-State "BG", N/2 of Section 33; and Lea-State "IH", W/2 SW/4 and W/2 SE/4 of Section 29, all in Township 19 South, Range 35 East, located in the Pearl-Queen Pool, New Mexico?

A Yes, sir.

MR. KASTLER: Are the witness's qualifications accept-

able?

MR. UTZ: Yes, sir.

MR. KASTLER: I would like to state that there is a slight error in our application. Sub paragraph B states there is no diversity of royalty ownership underlying the above-described leases. There is a diversity and we would like that section stricken, if it's all right.

MR. UTZ: Without objection, it will be stricken.

Q Mr. Hoover, have you prepared certain exhibits for presentation in this case here?

A Yes, sir.

Q I call your attention to a lease plat labeled Exhibit No. 1 in Case 1872. Will you please state what is shown on this Exhibit that is pertinent to this case?

A This lease plat shows the location of the Lea-State "AP", "IH", "BG" and "AQ" leases. These leases are outlined in red and the "AP" Lease is described as the East Half of Section 30, "IH" Lease, West Half, Southeast Quarter and West Half, Southwest Quarter of Section 29. "AQ" Lease, described as the North Half of Section 32. The "BG" Lease, described as the North Half of Section 33, all in Township 19 South, Range 35 East, Lea County, New Mexico.

Q Do you have coordinate numbers that identify these by State Lease numbers and, if so, would you give those numbers, please?

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A Yes, the Lea-State "AP" is Lease E-5883. The "IH" Lease is E-1587, the "BG" Lease is E-5841, the "AQ" Lease is E-5886.

Q Mr. Hoover, all of the wells shown on these four leases are the ones that are proposed to be commingled, is that correct?

A Yes, that's correct.

Q How many wells are there in all?

A At the present time there are fifteen wells which we have shown here. Let me clarify that two of them, No. 6 and 7-AQ have shown here. Let me clarify that two of them, No. 6 and 7-AQ are shown as not completed. No. 6 has been completed but not connected and No. 7 is drilling.

Q Will you please identify the State beneficiaries royalty owners on these leases?

A Yes, the Lea-State "AP", the Lea-State "AH" and the Lea-State "BG" leases have as the beneficial institution the State Penitentiary, but the Lea-State "AQ" lease has as its beneficial institution the common schools.

Q So there are, in substance, two beneficial royalty owners involved in this application, is that correct?

A Yes, sir, that is correct.

Q I now wish to call your attention to Exhibit 2 and ask you to explain what is shown there.

A This is, in effect, the same as Exhibit 1, showing the

leases except that it is a diagram of the proposed flow and test lines that we intend to install in this automatic custody transfer unit. The dotted green lines are the flow lines, the solid green lines are the production and test lines. We show here as our legend a circle there on the Lea-State "AQ" Lease, that being the proposed tank battery, and we show on the "AH" Lease and on the "BG" Lease a square, which is a header. We have the flow lines on the "IH" Lease and the "AP" Lease going into the header, located on the "IH" Lease, and from that header we show two solid green lines, one of those is a production line and one is a test line, and you will notice that goes down to the central battery.

Likewise on the "BG" Lease we also show the two lines coming from the header to the battery on the "AQ" Lease. We show the flow lines tying right into the proposed battery. However, there is a header right at the battery.

Q I now call your attention to Exhibit No. 3. Would you refer to this and identify it first and then outline the proposal of flow from the various leases?

A Yes. This is a diagram of the proposed test and production equipment. If you will notice, we have three heater treaters. We will have a production heater treater for the "IH", "AP" and "BG" Leases. We will have a production heater treater for the "AQ" Lease, and then we will have one common test heater treater where that we can produce any well on test through the

test heater treater and then that well will go back into the production line depending on whether it's the "AQ" Lease or the "IH", "AP" or "BG" Leases.

Q Will the oil be measured at the test facility?

A It will be measured at the test facility.

Q Will it again be measured after the production facility?

A Yes, after it goes through the test meter it ties back into the production line ahead of the "BS" and W monitor which is also ahead of the meter on the respective leases. The production will come in, for example, just taking the flow from the "AQ", it will come up through, as our legend shows, is a rectangle which we're calling a lease shutin valve, from there it goes to a production heater treater, out of the production heater treater it goes through a BS and W monitor, and then we show a "T" which is an automatic diverter valve and pump.

In the event the BS and W content exceeds the specification, it closes that valve, starts the pump around, recirculates it back through the heater treater until it does meet specification, then the valve opens and goes through the dump valve, dump meter to the surge tank.

Likewise on the production facilities for the "IH", "AP" and "BG" Leases, those tie into the production heater treater for that system. And by our two flow lines coming from each of the headers, or from the headers, we can direct any well through the

test facility. On the test facility we measure the oil, water and the gas.

MR. UTZ: As I gather, this "AG", "AQ" Lease will be measured separately from the other leases?

A Yes. That has the beneficial institution the common schools, so that is measured separately.

Q What facilities do you have for cleaning the tank bottom?

A There is a circulating pump which will circulate the bottoms back through the test heater treater and then back to the tank.

Q Are those various headers and valves involved in this application proposed, are they going to be manually operated or automatic or electrically?

A They are all manually operated with the exception we have a high and low level switch on the surge tank to start and stop the pump, and then we also have a high level safety switch in the event of a high level in the surge tank or also a high level switch in the heater treater, so that if we get a high level in the surge tank heater treaters it will close the lease shutin valves shown there as a rectangle. We will have shutin valves at the well which will close the wells in and we will also have safety switch to shut the pumping units down.

Q I now call your attention to Exhibit No. 4 labeled





production from State lands belonging to a single beneficiary institution for which he is trustee?

A Yes, they have.

Q Has he consented to the proposal contained in this application?

A Not as yet.

Q Does Gulf intend to measure the production from the penitentiary land separately from the production from the common schools land?

A Yes, sir.

Q Is the proposed installation capable of making a highly accurate measurement of production from each State land, in your opinion?

A In my opinion it is.

Q Have you made any calculation whether or not either beneficiary institution would lose anything by the granting of this application in the nature of lower gravity oil or oil having a lower value?

A Yes, sir.

Q What do your calculations show?

A We have taken the run tickets, that is the pipeline run tickets from the Lea-State "IH" and "AQ" Lease "BG" since the first of the year, and on these run tickets they indicate the tank gauges opening and closing, the observed gravity and the

temperature of the oil and from these figures we have arrived at gross barrels, net barrels and a corrected gravity. Then we have weighted this gravity on each of the leases. We find that the Lea-State "BG" Lease will have a weighted gravity of 36.9 degrees. On the Lea-State "AH" the weighted gravity will be 36.4, on the Lea-State "AQ" will be a weighted gravity of 36, and then we have weighted this gravity by combining the "BG" and the "IH" Leases, and this weighted gravity is 36.7 and then we have combined the "BG", "IH" and "AQ" Leases and the weighted gravity is 36.4.

Q Why didn't you take into account the Lea-State "AP" Lease?

A That is a new well and is not on production.

Q So you are unable to obtain a sample of the gravity from a pipeline taken?

A That is correct.

Q And your conclusion again was that there was no change which would effect the price of this oil after commingling?

A These gravities are all in the same price range, per barrel, price per barrel range.

Q Did you arrive at this by calculating the weighted average gravity from each lease and then combining the figures to determine the weighted average gravity for the four leases?

A For the three, we did not have the "AP".

Q Has the Commissioner of Public Lands been advised that

neither beneficiary would suffer from the loss of gravity if the proposed commingling were allowed?

A It is my understanding that he has been unofficially informed.

Q Informed this morning? A Yes.

MR. KASTLER: Off the record.

(Whereupon a discussion was held off the record.)

Q Will Gulf furnish a copy of the calculations to the Land Commissioner or to the Oil Commission if desired?

A Yes, if required.

MR. KASTLER: Do you desire to have a copy of these calculations?

MR. UTZ: I think if you send a copy to the Land Office it will be sufficient.

Q Mr. Hoover, does this application involve the commingling of production from separate pools?

A No, it does not, only the Pearl-Queen Pool.

Q Will the proposed automatic custody transfer installations have adequate facilities to permit the taking of all required tests?

A Yes, it will.

Q Is the granting of this application in the interest of conservation and will it protect correlative rights?

A Yes.

Q Were Exhibits 1, 2, 3 and 4 prepared by you or at your direction and under your supervision?

A Yes, they were.

MR. KASTLER: This concludes the questions on direct testimony.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hoover, will it be necessary for you to have an exception to Rule 309 for your "AQ" Lease? Will it not be metered on the lease?

A We'll have to have the exception of the Rule 309 for the 16 wells.

MR. KASTLER: It wouldn't be transported off that lease.

A Now by the exception to Rule 309.

Q You can't get any more than 8 wells on that lease, can you?

A You mean exception to Rule 309 strictly for the "AQ" Lease?

Q Yes.

A That's true, there would be no more than a maximum of wells on that lease, but for our application we would have to have the exception to 309 for the --

Q For your other four leases?

A Yes, sir.

Q Is this crude, sweet or sour crude?

A We have no evidence of any corrosion. I believe it's a sour crude price, but it is not a corrosive crude in our experience.

Q Intermediate?

A I would say it probably was. I do not have the figures on that, but we definitely have no evidence of corrosion problem.

Q I take it that you don't intend to use corrosive resistant meters or make any provisions for the protection of corrosion?

A No, sir, at this time, however I believe that this A. O. Smith meter is the same type of meter that is used on other batteries we have that are in the sour crude service.

MR. UTZ: Any other questions?

BY MR. PAYNE:

Q Do you have any paraffin problems?

A Yes, sir, slight amount. We plan to plastic-coat all of the new lines that we will put in and the ones that we rearrange and the lines that are already in there that will be utilized in place will only be plastic-coated as the trouble indicates that it should be done.

Q Do these wells make any salt water?

A They make some water.

Q You don't feel that it's corrosive enough to give you any problem in that regard?

A No, sir. It is not indicated at this time.

Q Are these pumping wells or flowing wells?

A Out of the 15 wells that we will have there, 11 are pumping, and 4 flowing. Now I'm taking into account that Well No. 6, which is completed but not on production, a pump went on the well and the 4 flowing wells have a flowing tubing pressure of 100 pounds and we anticipate that we will be on pump shortly.

Q You apparently don't feel that you need a low level safety switch?

A No, sir, we don't. We feel that the line pressures are very low and this is all new equipment, it's a new field, new development. We do not believe it will be justified.

Q Are your flow lines aboveground or below?

A Yes, sir, they would be aboveground except where road closing or other points dictate they would be buried.

Q It would be somewhat unusual, wouldn't it, for the wells in the same pool in such an immediate area to vary over about one degree in gravity?

A Yes, sir, it's in the neighborhood of one degree. For example, on the "BG" it varied from 36.3 to 37.4 and on the "IH" it had approximately the same variation and the "AQ" in the same range.





STATE OF NEW MEXICO )  
                                   : SS  
 COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 15<sup>th</sup> day of February, 1960.

*Ada Dearnley*  
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 Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1872, heard by me on Jan 27, 1960.  
*[Signature]*  
 \_\_\_\_\_, Examiner  
 New Mexico Oil Conservation Commission