BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1770

TRANSCRIPT OF HEARING

SEPTEMBER 30, 1959

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IN THE MATTER OF:

CASE 1770 Application of Pan American Petroleum Corporation for approval of a lease automatic custody transfer system. Applicant, in the above-styled cause, seeks an order authorizing the automatic custody transfer of oil produced from its Lois Wengerd Lease in Sections 23 and 24, Township 12 South, Range 37 East, Gladiola-Devonian Pool, Lea County, New Mexico.

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: Take Case 1770.

MR. PAYNE: Case 1770. Application of Pan American Petroleum Corporation for approval of a lease automatic custody transfer system.

MR. NEWMAN: Kirk Newman of Atwood & Malone, Roswell, New Mexico, and Guy Buell, a member of the Texas Bar of Fort Worth, Texas, representing the applicant.

MR. BUELL: We have one witness, Mr. Examiner, Mr. Green.

(Witness sworn)

ALBERT H. GREEN,

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

follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Green, will you state your complete name, by whom you are employed and in what capacity, and in what location, please, sir?

A Albert H. Green, employed by Pan American Petroleum Corporation as petroleum engineer in the Lovington District office.

Q Does that office have supervision of Pan American around the Gladiola Pool?

A Yes, sir.

Q What is your educational background, Mr. Green, with respect to petroleum engineering?

A Graduated in 1950 from Texas A & M College with a B. S. degree in mechanical engineering.

Q What have you done since graduation, Mr. Green?

A Since that time I have been employed by Pan American Petroleum and its affiliated companies in the equipment work, in plant refinery and producing operations.

Q With respect to the LACT installation which we are proposing here today, did you participate in the design and the selection of the equipment for this unit?

A Yes, sir.

MR. BUELL: Any questions, Mr. Examiner?

MR. NUTTER: No, sir. Proceed.

Q I direct your attention to what has been marked as Pan American's Exhibit No. 1, Mr. Green. What does that show?

A That is a plat of the Gladiola Pool, and the area shown enclosed by the red line represents that lease on which we propose to install the LACT unit.

Q And that is Pan American's Lois Wengerd lease, is that correct?

A That is correct.

Q Would you describe that, please, for the record?

A That lease is composed of the SE/4, eastern half of the NE/4 of Section 23, the NE/4 -- excuse me -- the NW/4 and the SE/4, and the eastern half of the SW/4, and NE/4 of Section 24, Township 12 South, Range 37 East.

Q Is this a multi-pay area, Mr. Green?

A Yes, sir, it is.

Q What other formation produces other than the Devonian?

A Wolfcamp.

Q How have you distinguished the Devonian wells on the Wengerd lease to show that they are different from the Wolfcamp completions?

A They are designated on the map by a blue dot encircled by a red line.

Q And the Wolfcamp completions is just the normal blue well symbol, is that right?

A Yes, sir.

Q Now, there is a portion of the Lois Wengerd lease that is not developed on the Devonian at this time, is that correct?

A That is correct.

Q And in all probability, the productive limits of the pool will not extend to cover the entire lease, --

A That is correct.

Q -- but still we are asking at this time approval on a lease basis so in the event production does step up it will be covered by this one application and order, is that correct?

A Yes, sir, that is correct.

Q How many Devonian wells are currently completed in and producing from the Devonian on this subject lease?

A Six Devonian wells.

Q Are they all flowing?

A No, sir. Two are pumping hydraulically, four are flowing.

Q What are the present lease facilities?

A At present, the lease is equipped with six one thousand barrel tanks plus the normal amount of treating equipment.

Q Since this is all one basic lease, there is no question of authority for commingling, is that right?

A That's my understanding.

Q Where will the approximate location of the proposed LACT installation be located? Have you designated that in any way on this Exhibit?

A Yes, sir, I have. That's shown on the SE/4 of the SE/4 of Section 24 by a red rectangle.

Q Is that also the approximate location of the present battery facility?

A Yes, sir, that's correct.

Q MR. BUELL: May I call the Examiner's attention now to what has been marked as our Exhibit 2. That is a brochure outlining in complete detail the proposed installation and the various equipment which will be installed. Also there are three -- or two attachments to the Exhibit, Exhibit 2. Attachment 1 is a plat reflecting that portion of the Wengerd lease where current production is obtained from the Devonian. Attachment 2 is a schematic flow diagram of our porposed installation. And attachment 3 is a letter from the gathering company -- the pipe line gathering company, signifying their complete approval of our proposed installation.

MR. NUTTER: Before you go any further, Mr. Buell, I would like to ask one question to clarify this. I note that the application we received from Pan American was for approval to docket a case to approve an LACT unit on the Lois Wengerd lease, Gladiola Field. However, this case was advertized for LACT on the --

Q (By Mr Buell) Does your proposed LACT include the Devonian or Wolf --

MR. NUTTER:--On the Gladiola-Devonian, according to

the notice of hearing.

MR. BUELL: I should have made that clear at the outset.

MR. NUTTER: We restricted the advertisement to the Devonian formation, but if the Devonian is what we are talking about, that's fine.

MR. BUELL: In the interest of time, we won't read verbatim from the brochure or cover it completely in our testimony, but we would like to give you the more pertinent phases of the information, material contained in the brochure.

Q (By Mr. Buell) At the outset, Mr. Green, let me ask you this. In your opinion, as an engineer, does an LACT installation serve both the prevention of physical waste as well as economical waste?

A Yes, sir, it does.

Q Would you briefly outline in what manner it so serves conservation?

A In the manner of elimination of physical waste, an LACT unit will conserve a portion of those light hydrocarbon vapors which normally escape in the atmosphere with conventional lease facilities. In addition to that, an LACT will provide a savings in manpower both to the producers as well as to the pipe line gatherer. From an economic standpoint, an LACT system requires

less capital investment than does conventional lease storage facilities, which would be capable of handling the equivalent volume of produced crude.

Q Let me ask you this, Mr. Green. Speaking generally and broadly, do LACT measuring instruments fall in any general category?

A Yes, sir, two categories.

Q What are they?

A One is the dump type or volume measuring type, and the other is the positive displacement metering type.

Q Which of these two broad types is Pan American proposing to install on the subject lease?

A Pan American proposes to install the positive displacement metering type.

Q Has the New Mexico Oil Conservation Commission approved a similar type installation in other pools in New Mexico?

A Yes, sir, the Commission has approved numerous other positive displacement metering units. More recently, one in the South Vacuum Unit in Lea County, which was authorized by Commission Order R-1327, one in the Caprock Queen Pool, Chaves County, authorized by Commission Order No. R-1326, and a third one in the Artesia Field of Eddy County, which was authorized by Order No. 1346.

Q Mr. Green, I wish now,for the purpose of the record, you would briefly outline just how the LACT will be installed and

how it would work on this subject lease?

A In the interest of simplifying the description of the LACT operation, I would like to refer to the Attachment No. 2 of the subject Exhibit.

Q Of Exhibit 2?

A Yes, sir, and describe the operation of the LACT by following the schematic drawing, as shown.

Q All right, go ahead, Mr. Green.

A Production from the six Devonian wells on the Lois Wengerd Lease will enter the tank battery, pass through the treating system, and from there the treated oil will flow into the bottom section of the 750-barrel power oil tank. The power oil tank serves to supplement the hydraulic pumping system, which is used to produce two of these Devonian wells. After filling the power oil tank, the treated oil will overflow through an automatic valve, designated (C) on the Attachment, and pass into the pipeline surge tank. When the oil in the surge tank reaches the high working level float switch, Item (G), the pipeline pump shown as Item (I) will automatically be started. From the pump (I) the oil will pass a high pressure shutdown switch (J), and flow through a pipeline sampler, Item (K), the gas eliminator, Item (L), the strainer, Item (M), and through the positive displacement meter shown as Item (N). After being metered, the oil will pass through a back pressure valve, Item (O), and flow on to the pipeline. The back pressure valve will be set at approximately 5 pounds per square inch to

assure that a positive head is held across the P.D. meter and to prevent flow when the pipeline pump is not operating. The meter prover tank identified as Item (P) is located downstream of the back pressure valve. When sufficient oil has been delivered to the pipeline to lower the fluid level in the surge tank to the low working level float switch (H), the pipeline pump is automatically stopped. When lease production again fills the surge tank up to the high working level float switch (G), the automatic custody transfer cycle is ready to commence again.

In order to assure the delivery of merchantable oil to the pipeline at all times, all oil is sampled and automatically checked for BS&W content before it passes from the power oil tank into the pipeline surge tank. Referring again to the flow diagram, we can see this is accomplished as follows:

Upon entering the bottom section of the power oil tank the treated oil rises upward towards the point of overflow into the pipeline surge tank. At point (A) in its upward movement a side-stream of the incoming oil is continuously withdrawn by the BS&W monitor feed pump, Item (A), and circulated past the BS&W monitor prove shown as Item (B). If the BS&W content of the oil exceeds approximately 1%, the BS&W monitor (B) will cause the overflow or shutin valve, Item (C), to close and the re-cycle valve, Item (D), to open, both automatically. Unmerchantable oil in the bottom of the power oil tank then will gravity flow into the re-run tank. When the oil level in the re-run tank reaches float switch (F) the

re-cycle pumps (E) is automatically started, returning the unmerchantable oil to the treating system. When the BS&W content of the treated oil returns to a satisfactory range as determined by the BS&W monitor, the re-cycling valve, Item (D), will close and the overflow or shut-in valve (C) will open automatically. The re-cycle pump (E) will continue to recirculate oil from the re-run tank until the oil level in the re-run tank drops below the float switch (F). The re-cycle pump is then stopped automatically.

Q All right, Mr. Green, what is your opinion with respect to the reliability and accuracy of such an LACT installation as Pan American is proposing here?

A Metering equipment has been shown by past experience to be very reliable insofar as accuracy is concerned. Actual tests of this type meter have shown that the meter is more accurate than is hand gauge, which is normally employed in lease operations.

Q All right, sir. Now, you testified that this installation, if approved by the Commission and installed by Pan American, will serve conservation in that it will prevent physical waste as well as economical waste, what is your opinion from the standpoint of the protection of the correlative rights of all the parties of interest?

A Due to the reliability of the equipment which we propose to install, all parties will be protected.

Q All right, sir. Now, Mr. Green, I notice in your

brochure you have set out the brand name of the meter that we propose to install here, but you are asking for an order approving the LACT unit and not a specific type meter, are you not?

A That is correct.

Q You just mentioned that in your brochure so that you could give the Commission complete and detailed information?

A That is correct.

MR. BUELL: May I offer Pan American's Exhibits 1 and 2, Mr. Examiner, and that's all we have at this time.

MR. NUTTER: Pan American's Exhibits 1 and 2 will be entered in evidence. Does anyone have any questions of the witness?

CROSS EXAMINATION

BY MR. PAYNE:

Q Do you run into any corrosion problems in the Gladiola?

A No, sir, none of appreciable extent. With the existing lease equipment, we haven't had a corrosion problem that is of any extent, and we don't anticipate any with this installation.

Q So you don't propose to use corrosion resistant type P.D. meters?

A Not to the extent that we would equip the meter with stainless materials or other materials of that nature, no, sir.

MR. BUELL: Is this a sweet crude?

A Yes.

MR. PAYNE: Thank you.

QUESTIONS BY NUTTER:

Q Mr. Green, this valve at the bottom of the re-run tank, --

A Yes, sir.

Q -- is that normally opened?

A Yes, sir.

Q That's not an automatic valve, is it?

A No, sir.

Q It is normally opened so that the oil can be re-run when this -- I presume, when the float level reaches -- when the fluid level reaches (F) there, it reaches (E)?

A It will re-energize (E). As the fluid level raises the float, the switch will energize pump (E), and as the fluid level drops in that tank, the lowering to the float will, in turn, shut off the power to the recirculating pump.

Q Is there a monitor down here in all this LACT transfer group?

A No, sir, there is not. The monitor is a continuous monitoring type placed on the power all the time.

Q On your power oil tank?

A Yes, sir.

Q So you can monitor the oil that is being used to lift the two pump wells?

A Yes, sir, it can serve that purpose also.

Q Now, supposing that you have a surplus of oil, not only coming from the lease, but also being recirculated from the

re-run tank, and no oil is being transferred to the automatic custody transfer system. Is there a possibility of having so much oil that is not acceptable to the monitor that it will start building up and you'll fill up your surge tank and re-running tank?

A In anticipation of such a possibility, which is actually remote, we have two thousand barrels of storage there which is very nearly twice a normal day's production, and this lease is attended by a pumper, and we feel that there is sufficient storage provided and with the attendance of a pumper, that we do not anticipate any difficulty from such a situation.

Q What is the current allowable for the lease --

A The lease producing --

Q -- in the Devonian?

A At the time Devonian production to the -- this battery is in the neighborhood of 1300 barrels a day.

Q Now, are there any high level switches anywhere in this system that shut in the wells?

A No, sir, there is not, because we don't feel that that is necessary with the quantity of storage that we provided, and the fact that the lease is attended daily by a pumper.

Q How many hours a day is he on the lease, eight hours a day?

A Seven to eight hours a day, yes, sir.

MR. PAYNE: You have one day's storage capacity?

A No, sir, we have very nearly two days' storage capa-

city.

Q (By Mr. Nutter) Two thousand barrels capacity tank will take about thirteen days production?

A Two thousand barrels capacity tank will take about thirteen days production, that's right.

MR. PAYNE: You never have any trouble having your oil run?

A No, sir, and this -- since we've discussed this installation with the pipeline gatherer, we have their commitment for full cooperation in this installation.

Q (By Mr. Nutter) How are your wells tested here, Mr. Green?

A They are tested separately.

Q Upstream from this diagram here, you have normal test facilities?

A Yes, sir.

Q And you run the production into a test tank, or do you measure the oil by meters on the test system?

A It will be tested through the treater and gauged separately upstream at this point.

Q Will this system provide adequate facilities for testing the wells at least once a month?

A Yes, sir.

MR. NUTTER: Does anyone have any further questions of Mr. Green? He may be excused.

(Witness excused)

MR. NUTTER: Does anyone have anything further they wish to offer in Case No. 1770?

MR. BUELL: No, sir, that's all we have.

MR. NUTTER: We will take that case under advisement and take the next Case 1771.

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, J. A. Trujillo, Notary Public 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 Stenotype and reduced to typewritten transcript by me, 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 12th day of October, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1770, heard by me on 9-30, 1959.

Examiner
New Mexico Oil Conservation Commission