DEARNLEY-MEIER REPORTING SERVICE, Inc.
PHONE CH 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 8, 1961

EXAMINER HEARING

IN THE MATTER OF:

Application of Phillips Petroleum Company for an automatic custody transfer system. Applicant, in the above-styled cause, seeks permission to install an automatic custody transfer system to handle the Corbin-Abo Pool production from all wells presently drilled or hereafter completed on the Eilliams Federal Lease comprising portions of Sections 33 and 34, Township 17 South, Range 33 East, Lea County, New Mexico. Case 2177

BEFORE:

Daniel S. Nutter,Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Case 2177.

MR. MORRIS: Application of Phillips Petroleum Company for an automatic custody transfer system.

MR. SPANN: Charles C. Spann, 904 Simms Building, Albuquerque, New Mexico I have with me Mr. Carl Jones, attorney from Midland, Texas, representing the applicant.

(Witness sworn.)

F. C. MORGAN

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

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DIRECT EXAMINATION

BY MR. JONES:

Q Will you state your name for the record, please?

A F. C. Morgan.

Q By whom are you employed?

A Phillips Petroleum Company.

Q In what capacity?

A Assistant District Superintendent, Hobbs Production District.

Q As such, areyou familiar with the subject matter of this application?

A Yes, sir, I am.

Q Have you previously testified and had your qualifications as a petroleum engineer accepted by this Commission?

A Yes, sir.

MR. JONES: Any questions about his qualifications?

MR. NUTTER: No, sir. Please proceed.

Q (By Mr. Jones) Mr. Morgan, what land does this application cover?

A We have Exhibit No. 1 showing the area covered in this application.

Q The application for the NE/4, E/2 of the NW/4 and SW/4 of NW/4 of Section 33 and the N/2 of Section 34, Township 17 South, Range 33 East; is that correct

A That's correct.

Q And you have prepared a plat of the area involved?

A Yes.

MR. JONES: We ask that be identified as Phillips Exhibit No. 1.

(Applicant's Exhibit No. 1 Marked for Identification.)

Q Is the land which is the subject of this application, is it not true that that land is covered by a single basic Federal lease?

A That is correct.

Q And it is known as Phillips Eilliams Federal Lease, is it not?

A The Eilliams Lease; we don't use the Federal.

Q How many proration units would this land consist of if all the units turned out to be productive?

A This lease would consist of fifteen 40-acre units.

Q This application does not involve an exception to Rule 309 as to the number of wells to be produced in a common tank battery?

A Yes, sir.

Q Simply the use of the automatic transfer custody system?

A Yes, sir.

Q How many wells are now located on the Eilliams Lease?

A We presently have three wells producing. Well 4 is drilling 6,300 feet. We have Well No. 5 shown as an approved location.

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Q Are these pumping or flowing wells?

A These are flowing wells.

Q Mr. Morgan, have you prepared a flow diagram of the proposed installation?

A Yes, sir, I have.

MR. JONES: We ask that be identified as Phillips Exhibit No. 2, please.

(Applicant's Exhibit No. 2 Marked for Identification.)

Q Will you go through the flow diagram and explain to the Examiner the nature of the proposed system?

A Yes, sir. I might explain, first, that all wells on the lease presently produce pipeline oil. Therefore, automatic custody transfer battery has been designed for these conditions. There are no treating facilities. There are two oil and gas separators, and three 500-barrel stock tanks. Pipes and equipment shown by the dashed lines will be installed initially. We have clean oil flowing from the separator into the surge tank. When the oil in the surge tank reaches the top level, Level 2, P-1, the transfer pump is started and meter tank starts filling. The transfer pump fills the meter tank to the weir and spills over and down into the drain-down line. The drain-down line which you see going to the surge line is sized to drain down at a rate less than the transfer rate, and that permits the oil level to rise outside the weir into Level 3. When Level 3 goes wet the transfer pump shuts down. It all comes to

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drain down from outside the weir, and when the oil level drops below Level 3, 5-1 opens to start the delivery cycle. Metered volume is, therefore, the volume between 5-1 and the weir. Level 3 must dry before Valve 1 opens. When the hole in the metering tank drains to Level 4 a time delay is actuated which closes Valve 1. This time delay insures the oil is below 5-1 before 5 closes. The closing of Valve 1 initiates another transfer cycle.

The sump tank is provided so that the pipeline pump, P-2, will not be stopped and started between dumps. The pipeline pump can be controlled by Level 5. All pumps are powered by electric motors.

The delivery of oil to the pipeline will be greater than the lease production. Therefore, the oil in the surge tank will drop until Level 1 is reached; delivery will be interrupted with the meter tank empty until Level 2 goes wet.

Fail-safe dump counter will be used to count the number of dumps sold, and will shut down the lease when the monthly allowable is produced. Temperature of each dump will be registered on a counter which will permit determination of the average temperature of the oil sold. Proportional samples will be stored in vapor-type vessels to provide composite gravity and per cent water information.

If malfunction occurs and no oil is sold, the surge tank overflows into the emergency overflow tank. When the oil level in the emergency overflow tank reaches Level 6 the lease shut-in valves will close in, thus shutting in the lease. We believe locating the shut-in valves at the header will be satisfactory because the field

lines will be tested to one and a half times the well pressure to place the LACT system in operation.

The equipment shown by dotted lines will be installed when and if producing oil does not meet pipeline specifications. In that event the monitor pump, P-3, will run continuously, pump oil through the surge tank, through the monitor seal and back through the surge tank. When the monitor registers bad oil the circulating pump, P-4 is started. The circulating pump pumps oil fromthe surge tank back through the treating facilities until the monitor registers good oil, the circulating pump is stopped, and transfer pump is allowed to restart as required.

Q What is the nature of the metering tank in this system?

A The metering tank is actually a 25-barrel vessel, internally plastic-coated with baked-on plastic.

Q To whom is the oil sold at the present time, Mr. Morgan?

A Texas-New Mexico Pipeline Company now serves the Eilliams Lease.

Q And has Texas-New Mexico Pipeline Company been apprised of this application and the nature of the proposed system?

A Yes, sir. We have thoroughly reviewed this installation with them and have Exhibit 3, a photostatic copy of a letter from Texas-New Mexico Pipeline Company stating their approval.

Q I note from the second paragraph of the letter from Texas-New Mexico Pipeline Company, one alteration was suggested in the proposed system. Has the system which you described been revised

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to meet that proposal?

A Yes, sir. Our system will incorporate their requirement.

MR. JONES: We ask this this letter be accepted as Phillips Exhibit 3.

(Applicant's Exhibit No. 3 Marked for Identification.)

Q This application is to transfer custody of oil from the Corbin-Abo Pool, is it not, just merely one single producing formation?

A Yes, sir, the Abo formation.

Q Has your company had experience with similar installation in other areas?

A Yes, sir. Actually we have thirty systems of the type we suggest here in operation. Eighteen of these are in Oklahoma, nine in Texas, and three in Utah. We have one such system proposed in Order R-1490, although the system was not actually installed because of lower production.

Q That was the Ranger Lake Pool?

A Yes, sir.

Q Approved by this Commission?

A Yes, sir.

Q Mr. Morgan, what economic benefits do you anticipate from this system as compared to production into and transfer from a conventional stock tank?

A Our primary purpose is to effect economy and improved operations on the lease. The production from the eight wells,

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which I feel will be the minimum 840 barrels a day, that would require seven 500-barrel tanks at a cost of about $18,000. This proposed LACT battery and two 500-barrel tanks, $17,700. Direct savings will result if eight or more wells are producing. We anticipate a gravity increase which will amount to an additional $300 a month. We also expect to improve the utilization of labor.

Q You mentioned a moment ago this was a single basic Federal lease. Has the United States Geological Survey been apprised of this application and the proposed system?

A Yes, sir. We have discussed it with U.S.G.S., and we have a photostatic copy of a letter stating their approval.

MR. JONES: I ask this letter be marked as Phillips Exhibit No. 4, please.

(Applicant's Exhibit No. 4 Marked for Identification.)

Q What provision do you make for testing of this installation?

A We presently have a test separator with adequate provisions to test.

Q Have the offset owners, lease owners, been notified of this application?

A Yes, sir, they have.

Q What provision do you intend to make forcalibration?

A I mentioned earlier, the inside of our metering tank is plastic-coated with baked-on plastic. The experience from thirty other installations indicate that incrustation will not form on the

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interior of our coated tanks, and these installations include one installation in the Texas area where we had oil with 4.50 degrees. We have periodically inspected all metering vessels and found no incrustation. We feel confident this proposed installation will record the same success. I might add further, 1490 covering the Ranger Lake unit did include a requirement that the system be checked for accuracy at least every six months. I consider that a reasonable requirement.

Q From your familiarity with this system, and from the experience your company has had with similar systems, is it your opinion this will be efficient and reliable and a safe means of transferring custody of the oil?

A Yes, sir. That would certainly be indicated on the basis of the other experience.

Q Is it your opinion the approval of this application is in the interests of conservation?

A I say it is because gravityincreases from .2 to .6 following an ACT installation because of more rapid transfer to the pipeline. Weathering is minimized, and there is less flashing of the vapors.

Q Is it your opinion that the correlative rights of all interested parties will be protected by this installation?

A Yes, sir.

MR. JONES: I believe that is all the questions we have.

MR. NUTTER: Any questions of the witness?

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BY MR. PAYNE:

Q How much additional storage capacity do you have?

A We have three 500-barrel stock tanks at the present time. Oulr intentions are, once this system is in and levelled out we intend only to retain two 500-barrel tanks on a permanent basis.

Q What do the wells make, total, now?

A 315 barrels a day production now.

Q You anticipate drilling a maximum of 15 wells on the lease?

A No, sir. I do not. I figure we will have a minimum of eight, but certainly something less than twelve. There has been a dry hole drilled to the north and west of our wells. I think that will limit our development to the north line.

Q What do you feel will be the maximum production per day when it is fully developed?

A 840 barrels is all we could reasonably predict at this time.

Q You would have emergency storage that would take care of production during the maximum unattended hours of your operation?

A I feel we will have a minimum of 30 hours storage provided at all times on this lease.

Q A pumper does visit this lease every day?

A No, sir. We swing weekends. The lease is unattended Sundays and Mondays.

Q Consecutively?

A Yes, sir. That is correct.

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Q You have 30 hours?

A We also have provisions made in a malfunction for the lease to be shut in.

Q You say you had tested, or would test, the flow lines?

A Yes, prior to placing the system we would at least test the flow line to one and a half times the meximum wellhead shut-in pressure.

REDIRECT EXAMINATION

BY MR. JONES:

Q Mr. Morgan, when would you like to start construction of this project if the necessary approval can be obtained?

A We would certainly like to start within thenext two weeks. We have one company rig running in the area on continuous development, and we will have our fourth well completed in the next ten days, two weeks. We would like to have it in operation shortly after that to save buying unnecessary stock tanks.

Q Were Exhibits 1 and 2 prepared by you or under your supervision?

A Yes, sir.

MR. JONES: I would like to offer Exhibits 1 through 4 into evidence.

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

BY MR. NUTTER:

Q Mr. Morgan, you mentioned 500-barrel tanks. The letter

from Texas-New Mexico is asking you to revise the fill line in the 1000-barrel tank. What tank is he talking about?

A I can only say he is actually aware of what we have on the lease, and I am sure that is a misprint.

Q I thought maybe running to another storage tank?

A No, sir. It is presently tied into the 500-barrel tanks, no change involved.

Q What does he actually want you to revise here; is he talking about the surge tank?

A Actually Texas-New Mexico Pipeline has a requirement. Phillips prefers bottom fills and they do not agree with bottom fills. In this instance they objected to our proposal to bottom-fill the surge tank. They would feel the crude was not weathered, might channel straight across the tank into the transfer pump. They wanted the oil by top fill or upcomer to give them the weathering. It was proposed to provide the upcomer.

Q How high up in the tank?

A Actually about four feet from the top of the tank.

Q In the event that the monitor, which may ultimately be installed here, detects bad oil, the monitor pump, P-3, turns on; is that correct?

A The monitor, any time the monitor detects bad oil the monitor pump is running continuously at all times. Anytime we see bad oil we immediately shut down the transfer pump, if it is in operation and start our circulating pump and, of course, the circu-

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lating pump runs continuously, circulates the oil back through the heater treater until the monitor sees good oil.

Q Does the transfer pump stay on at all times?

A The transfer pump only runs on signal. The monitor pump would run continuously.

Q How is the monitor going to get good oil back if the transfer pump isn't running?

A Sir, the circulating pump will run, will be circulating the oil out of the surge tank through the treating facilities; the monitor pump takes surges out of the surge tank.

Q Does the monitor pump have suction to pull oil from the transfer pump?

A Yes, sir.

MR. NUTTER: Any further questions?

BY MR. PORTER:

Q Mr. Morgan, you testified that the gravity would be increased from .2 to .6 degrees?

A Yes, sir.

Q Assuming that you got your ultimate production there of 840 barrels per day, how much would that amount to, moneywise, do you think, in a month's time?

A $300 a month would be the gravity benefits.

MR. NUTTER: Any further questions of Mr. Morgan: He may be excused. Do you have anything further, Mr. Jones?

MR. JONES: No, sir.

MR. NUTTER: Does anybody have anything they wish to offer in Case 2177?

Take the case under advisement. At this time we will take a 15-minute recess.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JUNE PAIGE, 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 14th day of February, 1961.

June Paige
Notary Public - Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2177, heard by me on 2/8, 1961.

....., Examiner
New Mexico Oil Conservation Commission

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I N D E X

E X H I B I T S

NUMBER	EXHIBIT	IDENTIFIED	OFFERED	ADMITTED
Ex.#1	Plat	3	11	11
Ex.#2	Flow Diagram	4	11	11
Ex.#3	Pipeline letter	7	11	11
Ex.#4	U.S.G.S. letter	8	11	11