BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 8, 1959

EXAMINER HEARING

IN THE MATTER OF:

Case 1721

TRANSCRIPT OF HEARING

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IN THE MATTER OF:

Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced excess of top unit allowable. Applicant, in the above-styled cause, seeks an order authorizing installation of an automatic custody transfer system and for permission to commingle the Caprock-Queen Pool production from more than 16 wells located on separate leases within the confines of the North Central Caprock Queen Unit Area in Township 13 South, Ranges 31 and 32 East, Lea and Chaves Counties, New Mexico. Applicant further proposes the establishment of an administrative procedure whereby wells in said Unit Area may be permitted to produce in excess of top unit allowable for said Caprock-Queen Pool.

Case 1721

BEFORE:

Mr. Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Take next Case 1721.

MR. PAYNE: Case 1721. "Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission

to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced excess of top unit allowable."

MR. CHRISTY: Sim Christy of Hervey, Dow & Hinkle for the applicant, Great Western Drilling Company. We have one witness, Mr. Examiner, Mr. Hampton.

(Witness sworn.)

JOHN HAMPTON

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address and occupation?

A John Hampton, H-a-m-p-t-o-n, special project engineer, Great Western Drilling Company, 509 North Lorraine, Midland, Texas.

Q Mr. Hampton, have you previously testified before this regulatory body as a project engineer?

A Yes, I have.

Q Are you familiar with matter contained in application in the Case No. 1721 and what it seeks?

A Yes, sir, I am.

Q Are you familiar with the North Central Caprock Queen Unit Area in Lea and Chaves Counties and the wells and history

thereof?

A Yes, sir.

MR. CHRISTY: Does the Examiner have any questions concerning the qualification of the witness?

MR. NUTTER: Please proceed. No, sir.

Q Now, Mr. Hampton, will you tell us what the application seeks, and I believe there are three things sought by it?

A Yes, sir. We are seeking first, permission to produce more than 16 wells into a common tank battery; secondly, to install an automatic custody transfer system within the Unit Area; and thirdly, we are seeking administrative procedures to be set up whereby we might be allowed to produce a well in this unit at more than normal top State unit allowable for the Caprock Field.

Q By the transfer of allowables?

A Yes, sir.

Q From one well to the other within the Unit Area?

A That is correct.

Q Now, sir, I will refer you to what has been marked as Exhibit 1 and ask you if you will please identify and explain that exhibit.

A Exhibit 1 is a plat of a portion of Caprock-Queen Field. On this plat I have indicated North Central Caprock Queen Unit, the subject of this application, outlined in yellow.

Also I have shown the North Caprock Queen Unit No. 1 to the north, and the North Caprock Queen Unit No. 2 also to the north, and just for orientation purposes we have a bit of the field to the south.

Q All right now, sir. Excuse me.

A This plat also shows all of the producing wells within the three units, and outlined in red, to the best of my knowledge, are all of the injection wells in the three units, the wells that are presently on injection.

Q Yes, sir. Now, I will refer you to Exhibit 2 and ask you if you will please identify and explain that exhibit.

A Yes, sir, Exhibit 2 is a graph of the North Central Caprock Queen Unit showing oil production and water injection. The water injection is portrayed over on the left-hand side of the graph here with small circles connected by lines. That shows that we started water in the ground in March and how much water we put in the ground each month preceding, and at the bottom of the graph here is shown oil production from the Unit Area monthly by crosses which are connected with lines also.

Q Now, would you please give the Commission a brief resume of your operations in the North Central Caprock Queen Unit Area?

A Yes, sir. The North Central Caprock Queen Unit was effective the first of January, 1959. We immediately, of course,

started ordering materials and building our injection facilities. We completed the injection plant in the early part of March of 1959. We started injection of water into six wells on March the 9th, 1959. On the 21st of March we completed a seventh injection well. I mean by completing that we ran a liner into this well and properly cemented it so as to contain the injected water to the Queen formation. And that well was put on injection the 21st of March, and on May the 18th we put an eighth well on injection.

Q Now, I believe your initial order granting the water flood was for seven wells, provided administrative procedure for subsequent wells. Speaking of that eighth well, did you obtain administrative approval for that injection eighth well?

A Yes, we did.

Q Please continue.

A The area where we started our pilot water flood is in a relatively tight portion of the field, and our initial injection we injected water against about seven to eight hundred pounds of pressure. Of course, we were trying to maintain a pressure balance in this water flood network in order to create a uniform front and produce the most efficient sweep possible.

We have been successful to date in maintaining an equal pressure in the injection wells against this more or less equal pressure. The average daily injection rate in May was 344 barrels

of water per well, or an average of about 2750 barrels of water per day.

By way of explanation, I might say that this was just over half a barrel per acre foot per day, since the pay averages approximately seven to eight feet in the pilot area. Of course, as some of the data in the units up to the north and even as our data is beginning to show, as fill up in this reservoir occurs the injection rates tend to decrease and the injection rates are down now from May in our wells, and I believe as our program proceeds, probably the injection rates will, in these eight wells, will decrease even further.

Q Have you noticed yet a response to this injection of water in the pilot area?

A Yes, sir, we have. The first response we noted to injection of water in this area was around the early part of June in Well No. 18-3.

Q Would you locate that for us, please?

A Yes, sir, it is located in the Northeast Quarter of the Northwest Quarter of Section 18.

Q All right, sir.

A We moved the portable well tester then on to this well and on June 19th our production was up to 16 barrels of oil per day. On previous tests that well had been producing about nine to ten barrels of oil per day. We were definitely sure then

that we had a response to the injection of water when the production remained at about 16 to 17 barrels of oil per day for a week or more.

Then a test on the 15th of June showed that this Well No. 18-3 was making 37 barrels of oil per day. At this time we noted an increase in gas production in Well No. 18-5, so we moved the portable well tester down to that well.

Q That is in the Southwest of the Northwest of 18?

A That is correct, sir. And a test on the 17th of June showed that 18-5 was making 4.4 barrels of oil per day, and a test on the 18th shows 6.75. And then a test on the 19th showed 6.55 barrels of oil per day. Then a test on the 20th showed that 18-5 was making 17 barrels of oil per day. Our latest test that I happened to have available to me, our Well No. 18-3 is capable of making about 70 barrels of oil a day, and Well No. 18-5 is capable of about 20 barrels of oil a day.

And I might add here, on the 2nd of July, just in one day, our Well No. 13-1 came up from former history of about 2 barrels per day per well to 39 barrels on that day.

Q That 13-1 well is in the Northeast Northeast of Section 13?

A Correct, yes, sir. So we are definitely getting a response on this well 13-1. We've also noted an increase in gas production, possibly an increase in 18-11, although we do not

have a test on it, but we possibly have a little increase in oil production.

Q And 18-11 is in the Northeast Southwest of Section 18?

A Right. Yes, sir. We achieved these increases when we accomplished about 75% of theoretical fillup in the pilot area, and since all of these wells came up about the same time we feel that we have been very successful in establishing a balanced flood condition in this area.

We also feel that we have a very successful flood in operation, and we anticipate continued success as the flood is expanded to the west.

Q Now, in your application for allowable relief, you have mentioned a proposal of administrative approval on the matter. Could you give the Examiner your thoughts as to the method you feel the Commission should adopt on administrative approval?

A We would propose that the Commission set up a procedure whereby we would be allowed to produce a stimulated well at more than that State unit allowable for the Caprock-Queen Unit by administrative approval without further notice and hearing. We propose to do this by transferring allowable from the top State unit allowable, from injection wells and from wells on the west side of the unit, which are not being stimulated at the present time. In other words, we would produce stimulated wells at high rate in order to prevent bypassing of the oil in the

reservoir by the injected water. We think by keeping a pressure gradient into our producing wells that we will eventually recover more oil because we won't have water, not as likely to have a water break around the oil in the reservoir.

Now, we also feel that we should produce at a proper rate in order to maintain correlative rights with the two units to the north which are producing wells at capacity.

Q What procedure would you recommend to the Examiner be adopted by the Commission on this administrative approval without notice and hearing?

A Well, we feel that first we should present evidence to the Commission that a well has been stimulated by the flood, and by letter at the same time we should state the amount of our requested allowable transfer, including this, that a statement as to the new total allowable assigned to the unit. And we would also recommend that for ease in handling that this be delegated to the Commission district level.

Q Now, sir, I refer you to what has been marked Exhibit 3 and ask you if you will please identify and explain it. I might say, for the benefit of the Commission, we are not turning to the ACT portion.

A Exhibit 3 is a plat which shows only the North Central Caprock Queen Unit. The little solid blue circles on this plat represent all of the presently producing wells in the unit.

The lines running between them with small numbers on them represent the new lines as we would propose to centralize them.

As you can see from this exhibit, we propose to produce more than sixteen wells into a common tank battery. Now, we can see no problems in connection with this because the Commission is aware by their Order R-9311 this area was unitized, and consequently the ownership is common throughout.

Q That is working overriding and royalty is all common?

A Yes, sir. I would like to point out also that we have provided test facilities at several locations within the unit, we can go into more detail on that in the next exhibit. These test facilities will be at the point where you notice the flow lines all coming together into a central point. You will also notice beside each of these wells that there are a couple of numbers. The number at the top 17-3, 18-1, 18-3 and so forth are the numbers of the well within the unit boundaries. The other little number which is 2.06 and 1.96, 72.50 represent the average daily production of these wells. From our latest data that is available, I might point out there the eastern half of the unit that is from the, you see the tank battery located in the central portion. From there to the east the unit is capable of producing about 162.87 barrels of oil per day at the present time, and from the tank battery west the unit is capable of producing about 158.65 barrels of oil per day.

Since the area that we are primarily interested in where we are putting water in the ground is on the eastern side of the unit, we plan to start centralizing the flow line and start combining the facilities on the eastern side of the unit, and after we have the lines on the eastern side we will proceed at a more leisurely pace to install the facilities from the western side.

As you can also see on this exhibit, we are including all of the presently producing wells in our plan for centralizing the flow lines; part of these producers will be converted to injection wells at the proper time. The wells which have an even number such as 13-4, 14-2, 14-4 and so forth will eventually become injection wells.

The easternmost test station, that's the one further to the east where all the lines come together, will have seven producing wells going into it, and the remaining test stations will have four producing wells going into it, after we have converted all of the wells to injection wells that will be converted; so as you can see, we plan enough facilities so that each well can be tested at least once a week.

Q Now, as I understand you, on Exhibit 3, sir, you have not shown the present eight injection wells, but you have shown the other wells which some day will become injection wells?

A No, sir, we have not shown the present wells which are on production on this exhibit.

Q But you have included other wells which in the future will become injection wells?

A Yes, sir, right.

Q And they are injection wells?

A That's right.

Q I misspoke myself on the sixteen well question. Would you please identify and explain Exhibit 4 to the Commission?

A Exhibit 4 is a schematic diagram of the easternmost test station. All of the other test stations in the unit will be patterned after this one except that they will have fewer wells going into it eventually. You can follow the flow of the well on test by the red arrow which I put on this exhibit. I happened to choose Well No. 3 here. As you can see, the oil comes in from the well to this test station and flows up into the header, and by opening and closing the proper valves the oil from a particular well can be directed to and through the test separator. And after the oil goes through the test separator it goes back to the main flow line to the central tank battery. The separator will, of course, meter both oil and water and then return both to the main flow line.

Q Now, turning to that portion of your application concerning the ACT Section System, I wish you would identify and explain Exhibit 5 to the Commission.

A Yes, sir, Exhibit No. 5 is a schematic diagram of our

proposed central tank battery and our automatic custody transfer system.

As the Commission will notice, I have attempted to number or name all of the various components in this system, and attached to the back of Exhibit 5 is an explanation of the flow and the components to this system.

We might briefly run through the flow of a barrel of oil coming in. It comes in to the test separator which is numbered No. 1 on this diagram.

Q That is in your upper left-hand corner?

A Correct. Oil comes from the wells into this separator which is a two-phase separator and separates the oil and water from the gas. The gas passes through this line No. 1-A, which you will notice at the top of the separator, into the, through this line down to our steam generator, down to the, sort of the central portion of the diagram, and this steam generator is used for heating the water and heating treating water in this tank No. 3.

Of course, we are utilizing the gas that we can gather from the unit for running the steam generator. Item No. 1-B is a check valve or back pressure valve, I am sorry, 1-B, just down from the separator. This valve merely serves to hold five to ten pounds of pressure on the separator and allow enough pressure to build up in the separator to lift fluid through line 1-C and

into the upper portion of this boot at No. 2.

Now, this line 1-C merely serves as a flow line from the separator into the upper portion of the boot, No. 2, it flows into the upper portion of the boot here and the top eight feet of this boot merely serves as a gas expansion section and then allows gas to pass through out of the top and through line 2-A down to the steam generator where we are utilizing it to create steam.

2-B is a check valve which allows gas to flow out of the storage tanks and down to the steam generator and does not allow gas to flow the other way.

Down at the bottom of the boot you'll notice line No. 2-C. This is the flow line from the boot into the treating tank. Oil passes from this boot into the bottom portion of the treater tank which is labeled No. 3, below spreaders and heat exchangers, which are represented by line No. 3-A and serve to heat the water in the bottom portion of this treater tank.

The treater tank No. 3 also acts as a free water knockout, and the upper portion of the tank is available for additional storage space. Like I said, 3-A represents the heat exchangers, 3-B, which is merely the steam line and return to the steam generator, 3-D which is over to the left side of the treating tank is the interface control which controls the position of the interface between oil and water by opening and closing this valve

No. 3-F right out in front of the treater tank and allowing water to drain from this tank.

The bottom control at 3-D activates an alarm and notifies the pumper that the interface has fallen too low in the treater tank. 3-E then, it looks rather like 3-C on this diagram.

Q May I ask, you mean the number to the right of the three tank to be 3-E?

A Yes, sir.

Q It appears to be C.

A Yes, sir, it appears to be C on this diagram, but it is E and it is merely the flow line from the treating tank into our surge tank, which is No. 4. 3-F is an automatic valve which is normally opened and allows oil to flow from the treating tank into the surge tank. If this valve fails it fails open.

The line No. 3-G, which is the line up at the top of the treater tank, is a flow line to the surge tank for a high fluid level in the treating tank. 3-H is, as we covered before, an automatic valve which is activated by the interface control No. 3-D, and if this valve fails, it fails closed.

No. 4 now is our surge tank from which we normally run, will normally run oil to the pipeline. It's, the oil is run between the levels of the little nubs out to the right which represent various controls, 4-C and 4-D. We go down these emergency, or these controls that I show out to the right-hand

side of the surge tank No. 4-A. Up at the very top of the tank is an emergency shutin control. This control closes valve No. 5 which you see just ahead of the treater, and when this valve is closed, of course, pressure builds up in the flow lines and shuts in the producing wells.

MR. NUTTER: What happened to Well No. 5?

A It is just ahead of the separator.

MR. NUTTER: Oh, the separator.

Q (By Mr. Christy) I thought you said the treater.

A It is just ahead of the separator.

MR. NUTTER: I see it now.

A 4-B now, is a high level alarm control. When oil reaches the level of 4-B in this surge tank an alarm is activated and the alarm notifies the pumper that a high level has built up in the surge tank. Now, this control also closes valve No. 3-F and allows the treater tank to fill up to line 3-G and overflow through 3-G into the surge tank. This allows us to use the upper portion of the treater tank for additional storage.

4-C is the high working level control. This opens valve No. 7, which is also called the stop set valve down here in the ACT System.

Q That's the one that looks like a question mark?

A Yes, sir.

MR. NUTTER: All right, sir, that's a 7?

A That is a 7. It also, when it opens this valve No. 7, it activates the charge pump and the pipeline pump.

4-D is the low working level control. When the oil reaches this level of 4-D in the treating plant, in the surge tank, closes valve No. 7, it shuts down the charge pump and the pipeline pump and no more oil is run to the pipeline then.

Q That prevents unmarketable oil from going through to the pipeline?

A It prevents oil from going to the pipeline, yes, sir. 4-E is a low working, low level alarm which activates an alarm system and notifies the pumper that the fluid level has reached a low level in the working tank.

4-F is a low level shutin control. It shuts down the circulation pump No. 6 which is shown just behind the working tank. When the fluid reaches 4-E, then that circulating pump is shut down.

MR. NUTTER: What line is that valve No. 6 on? Where does that line go?

A It is out of the bottom of this surge tank. You see, it is shown by a dotted line, it is out of the bottom there.

MR. NUTTER: Oh, I see.

A I will explain why here just as we get to it. 4-G is merely a BS&W drawoff line. 4-H, which is up at the top and to the right of the surge tank, is a line to this overflow tank

No. 8. Now, back to this valve which shuts the lease in, No. 5. This is an automatic valve and it's closed by the high level shut-in control No. 4-A at the top of the working tank. This valve, when it is closed, builds up a pressure in the flow line, and when this pressure is built up in the lines the producing wells will be shut in by a pressure switch which cuts off on the power to the pump motor and requires manual restarting.

Now, No. 6 is a circulating pump which is activated by this monitor that you see at the bottom of surge tank. The circulating pump is activated by the monitor when a high BS&W cut is picked up by the monitor. The monitor turns it off when it detects good oil.

6-A is an automatic valve which is activiated by the BS&W monitor, both open and closed, and if this valve fails it fails closed.

No. 7 is like we discussed the stop set valve in the ACT System, which allows us to pass oil from the surge tank into our automatic custody transfer system. It is opened by the high working level No. 4-C in the surge tank. It is closed by the low working level control No. 4-D. It is also closed by the monitor if the monitor picks up bad oil, and if this valve fails it fails closed.

Now, pass then from the treating system in the storage facilities there into the automatic custody transfer system.

The system is opened by control No. 4-C which opens valve No. 7, starts the charge pump and the pipeline pump, thus starting merchantable oil through one or both of the skid mounted units. Oil passes through the charge pump then and into the deaerator.

This deaerator just serves to remove free air and gas that accidentally get into the system, and then oil passes through the deaerator and strainer and the function of the strainer is to trap any foreign objects that might accidentally get into the line, and the oil passes out of the strainer through positive displacement meters. They, by the way, I say PD meter on the ACT schematic diagram. That is positive displacement meter. These meters have counters on them which reads in "barrels", "tenths", and "hundredths" of barrels.

Each meter is equipped with a temperature compensator to correct all measurements to a base of 60 degrees fahrenheit. A lockout safety device on the meter, which requires manual reset, shuts down the ACT System in the event the counter stops functioning properly. The counter is equipped, the meter is equipped with a counter, and by inserting a ticket into the counter ticket printer at the beginning of a measurement period and printing the opening reading, the ticket is automatically locked in place and then cannot be removed without mutilation until you print the closing reading. Historical data shows that these meters are accurate to a greater degree than .1 of 1%.

I might point out that in order to prove these meters they must repeat a measurement within .05 of 1% to be acceptable. The oil passes from the positive displacement meter through the stop set valve.

This valve is closed by mechanical linkage to the meter when a predetermined amount of oil has passed the meter. The oil then passes into the vertical sample riser where a sample will be taken approximately out of every ten barrels of oil. This sampler will be driven by electrical impulses from the meter so that it takes a sample, a small sample for each ten barrels of oil which pass through the meter, and then the sample is stopped in a sealed sample container represented by a little circle with three little legs on it.

The oil then passes into the pipeline pump. You'll notice here that a pipeline pump is required to deliver oil to service pipeline company, but one is not required to deliver on it to Texas-New Mexico Pipeline Company. Oil then passes through this back pressure valve.

This valve merely serves to hold a back pressure on the system in order to keep the lines full to accurately gauge the oil. The oil then passes from the flow-rate control valve and into the pipeline.

The flow-rate control valve purpose is to regulate the flow at a predetermined rate to either or both pipeline companies.

You'll note out in the middle between these two skids we have permanently placed a prover tank. Now, the meters are proved by filling this prover tank behind the flow-rate control valve in order to prove under the same conditions under which we normally run oil.

I think about the only other part of the system that I have not explained is the monitor. This BS&W cut monitor operates on a dielectric constant principle and permits only merchantable oil to pass through the meter. If the set value of 1% BS&W is exceeded, the monitor closes valve No. 7 and shuts down the charge pump and the pipeline pump. It also opens valve No. 6-A and starts the recirculating pump No. 6 and diverts the non-merchantable oil back through the treating system. Now, as soon as the oil then in the surge tank becomes acceptable to the monitor, the bypass closes and shipping resumes to the pipeline.

Q Now, are there any other ACT Systems similar to this one operating in New Mexico?

A Yes, sir. It is essentially the same system as operated by Shell in the Pearl-Queen Pool, by Continental in the Hobbs Pool, and also it is essentially the same as Graridge is operating in the North Caprock-Queen Unit No. 1 to the north, and Ambassador is operating a like system in Unit No. 2 to the north. It is also quite similar to the original ACT in New Mexico to Shell in the Bisti Field area.

Q Now, have the two pipelines in question, the Service Pipeline Company and the Texas-New Mexico Pipeline Company, have they seen this proposed installation and approved it?

A Yes, sir, they have. We correlated very closely with both pipeline companies on our design, and they have both accepted this design as acceptable to them, and we'll run oil through them.

Q Now, what benefits will accrue from the granting of this application with respect to the ACT System, and why do you feel the Commission should grant it?

A Well, there are several reasons. First, there is increased safety to personnel because the hazards of cleaning tanks and gauging the tanks and so forth will be eliminated. We feel a very important reason is that crude oil will be conserved because metering eliminates exposure of the oil to air through the system, this means the light petroleum fractions in the crude, thus retaining it's volume, gravity and price.

There would be a great savings to the producer in storage and treating facilities that we would have to have on the unit without this system. In other words, we wouldn't have to have the large volume of storage in the various tanks and we wouldn't have to have a treater for each tank battery that we had. In event of a natural disaster such as lightning there would not be as great a loss of oil because we'll not have as much

oil in storage under this system as we would if we had tank batteries on each and every tank.

Also the tanks will not have to be cleaned as often and we will circulate the tank bottoms back to the treating system so that some oil that would normally be lost in cleaning tanks and so forth would be conserved by this system, and also in any opinion, the positive displacement meters are probably more accurate than hand gauging.

Q Now, referring to all three of the requests you have made in this application, do you feel that these three requests are in the interest of conservation?

A Yes, sir.

Q Do you feel that they violate the correlative rights of the interested parties?

A No, sir.

Q Were Exhibits 1 through 5 inclusive prepared by you or under your direct supervision?

A Yes, sir.

MR. NUTTER: Any questions of Mr. Hampton?

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Hampton, do you intend to try and live with what is actually a project allowable during the life of this water flood?

A Mr. Payne, as we see the development of this unit, we believe we can, yes, sir.

Q You are aware that Cities Service was apparently unable to do that?

A I was, yes, sir.

MR. PAYNE: That's all, thank you.

BY MR. NUTTER:

Q How many forty acre tracts do you have in that unit, Mr. Hampton?

A 51.

Q What is the total allowable, 51 times 34, what is the present allowable, 35?

A I believe it is 35.

Q Assuming that the allowable is 35 at the present time, and you have 51 forty acre tracts in the unit, would you have approximately 1785 barrels of allowable?

A That sounds right, yes.

Q Do you think that as far as you can tell at the present time that the rate of production for the North Central Caprock Queen Unit water flood will ever exceed 1785 barrels a day?

A Well, of course that is extremely difficult to predict, but as we see the development now, I do not think so.

Q At least this 1785 number will be sufficient to last

for quite a bit of time?

A Yes, sir.

Q I note from your Exhibit No. 3, Mr. Hampton, that in quite a number of instances, particularly to the western portion of that exhibit, we have more than one well flowing through a three inch line into the main trunk line. Now, when you put these other wells on water injection, will each well have its own flow line into the trunk line?

A Yes, sir, I believe so.

Q And how will the wells be tested, by portable tester or with a separator?

A No, Mr. Nutter, all of our test stations at the points where you see these lines come together.

Q There is a test station at the juncture line?

A Yes, sir, at the junction of each of those lines.

Q Now, I have made some circles on this Exhibit No. 3 and mark them "T" in red. Are those the test stations, Mr. Hampton?

A Yes, they are.

Q So you will be able to produce a well into a test station, get a test on this well without having to shut in any other wells?

A When the system is fully developed we will. At the present time, as you can see, some of the wells would have to be

shut in to test an individual well, but that is not in the critical portion of the field at the present time and we can still stay well within the Commission rules on testing wells.

Q I see. Now, on your Exhibit No. 5 you have a working level, or a storage level in tank No. 3, from the top of the tank down to the first circle that you have drawn on that.

A That first circle, Mr. Nutter, is a mistake. I don't know how it got on there, it does not represent anything.

Q Well, now, the working level is from the line 3-E down to the level 3, is that correct?

A That is correct, yes, sir.

Q And you, under normal conditions you could have as much oil in that tank as would reach the line 3-E?

A Yes, sir.

Q And, in the event of a failure of the system, you would have storage then from 3-E to the top of the tank?

A Actually from 3-D to the top of the tank. That would be additional from 3-E to the tank.

Q You could have an operating level at 3-E when the thing would fail?

A Yes, that is the operating level normally.

Q So your storage level would be from 3-E to the top if the failure occurred when you happened to have a full working level?

A But the additional storage would be there.

Q Now, you have storage in tank No. 4, you would have storage from 4-C up to 4-A, in the event of a failure?

A The tank will store from the bottom of the tank to 4-A.

Q But the working level is from 4-C to 4-D, isn't it?

A Yes.

Q If the failure occurred when you had a full working level, it would be storage from 4-C to 4-A?

A Yes.

Q Now, this other tank over here to the right, does that contain storage capacity?

A Yes, sir, a full tank full.

Q I thought that a failure would close valve 4-A to prevent the flow of oil.

A No, that is not a valve, Mr. Nutter, No. 4-A is an emergency shutin control. There is no valve on this line.

Q Which operates valve 5 over here?

A Yes.

Q So you have an overflow then from the top of tank No. 4 into this other tank over to the right?

A Yes.

Q Now, what is the capacity of the tank to the right?

A Five hundred barrels.

Q And what would be the approximate capacity of tank

No. 4 from 4-C to 4-A?

A That is a 500 barrel tank, and let's say it is half of it, 250 barrels.

Q Now, how about from line 3-E on tank No. 3 to the top of the tank?

A Well, that is a 750 barrel tank, and let's say it is a third of the way.

Q So you have approximately 1,000 barrels of open storage which could be utilized, is that correct?

A That is correct.

Q At all times? A Yes.

Q Essentially? A Yes.

Q Probably a thousand barrels. And in the event of a failure, however, and the storage was full, valve No. 5 will be closed and the wells will be shut in at the wellhead?

A Yes, sir.

Q The pump units? A Yes.

MR. NUTTER: Any further questions of Mr. Hampton?

RE-DIRECT EXAMINATION

BY MR. CHRISTY:

Q Mr. Hampton, these are all pumping wells, are they not?

A They are except the injection wells.

MR. CHRISTY: That's all we have of this witness. At this time we would like to offer in evidence Applicant's

Exhibits 1 through 5 inclusive as amended by the testimony in Exhibit 5 to delete the top line on tank 3 to show the figure 3-E to the right of tank 3 and to make the stop set valve No. 7 instead of a question mark. Those three amendments we would like to offer in evidence, the five exhibits.

MR. NUTTER: Without objection, Great Western Exhibits 1 through 5 will be admitted.

MR. CHRISTY: That is all we have for the applicant.

MR. NUTTER: If there is nothing further in Case 1721 we will take the --

MR. PAYNE: I have a statement I received from Gulf Oil Corporation concurring in the application.

MR. NUTTER: The witness may be excused. We will take the case under advisement and the hearing is recessed.

(Witness excused.)

STATE OF NEW MEXICO )
: SS
COUNTY OF BERNALILLO )

I, JOSEPH A. TRUJILLO, 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 24th day of July, 1959.

Joseph A. Trujillo
Notary Public-Court Reporter

My commission expires:
Oct 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1731, heard by me on 7-8, 1959.
New Mexico Oil Conservation Commission, Examiner