NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing - Elvis A. Utz

Santa Fe, , NEW MEXICO

REGISTER

HEARING DATE March 23, 1960 TIME: 9 a.m.

NAME:	REPRESENTING:	LOCATION:
J. H. Christy	Hervey Dow & Hinkle	Roswell N/M
L. L. Johnson	Honolulu Oil	Midland Texas
Leo Bucedy	Honolulu Oil	Midland, Texas
George Hoy	" "	" "
Frank Gray	Caulkins Oil Co.	Farmington, N.M.
A. H. Green	Pan American Petr	Lubbock, Texas
Jason Kellahin	Kellahin & Fox	Santa Fe
Tom P. Stephens	Franklin, Aston & Fair, Inc.	Roswell
Rogers Aston	"	"
James T. Jennings		Roswell
J. H. Hoover	Gulf Oil Corp	Roswell
S. H. Cavin	Hondo Oil & Gas Co.	Roswell
J. R. McMinn	"	"

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 23, 1960
EXAMINER HEARING

IN THE MATTER OF:

Application of Caulkins Oil Company for a gas-gas dual completion and an unorthodox gas well location. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Sanchez Well No. 1, located 560 feet from the North line and 660 feet from the West line of Section 24, Township 26 North, Range 6 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of gas from the South Blanco-Pictured Cliffs Pool and the production of gas from the Dakota Producing Interval through parallel strings of tubing. Applicant further seeks approval of an unorthodox gas well location for said Sanchez Well No. 1.) Case 1923

BEFORE:

Mr. Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: The next case is 1923.

MR. PAYNE: Case 1923: Application of Caulkins Oil Company for a gas-gas dual completion and an unorthodox gas well location.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico, representing the Applicant. We will have one witness, Mr. Frank Gray.

MR. UTZ: Will you swear the witness, please?

(Witness sworn.)

MR. UTZ: Are there other appearances in this case? If not, the case will proceed.

FRANK GRAY

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A Frank Gray.

Q By whom are you employed and in what position?

A I'm Superintendent in the Farmington District for Caulkins Oil Company.

Q Have you previously testified before the Oil Conservation Commission of New Mexico, Mr. Gray?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kellahin) Are you familiar with the application in Case 1923, Mr. Gray?

A Yes, sir.

Q Will you state briefly what is proposed in this application?

A We propose to make a gas-gas dual in the Sanchez No. 1, so that gas can be produced from the Dakota and Pictured Cliff sands simultaneously.

Q Have you prepared a plat showing the area involved in this application?

A Yes, sir.

(Whereupon, Applicant's Exhibits Nos. 1, 2, 3, & 4 marked for identification.)

Q Referring to what has been marked as Exhibit No. 1, would you describe the well location and information shown on that exhibit?

A It shows the well to be located 560 feet from the North line and 660 feet from the West line of Section 24, 26 North, 6 West, Rio Arriba County, New Mexico.

Q Is that on a Federal lease?

A Yes, that is on Federal Lease No. SF 079304-A.

Q In regard to the location involved in this well, would you describe to the Examiner how the well happened to be drilled in that location; that is, the history of the well?

A The well was originally proposed and approved as a Tocito test in July, 1952. The Tocito sand was not productive, so permission to deepen the well through the Dakota was requested and obtained in September, 1952. Due to the topography, the well was located 100 feet closer to the boundary line than the rules prescribed. Therefore, it would be, to make a Dakota out of it at this time, it would be 230 feet less than the minimum distance from the North line of the lease, and 130 feet less than the minimum distance from the West line.

The location is in very rough terrain. The edge of a canyon more than 100 feet deep curves around this well site, the distance from the well to the canyon edge on the west being approximately 100 feet; and from the well to the canyon edge on the south approximately 200 feet.

Immediately east of the well it's also rough, being cut through by numerous gullies. The general topography of the well site made it desirable to set the rig up when the well was drilled with the "V" door of the derrick opening to the south. With that arrangement, 200 feet of space from the derrick to the edge of the canyon was necessary to drill the well efficiently and safely.

The next suitable location for a well site south of the present one would be down in the canyon, which would be several hundred feet distant.

Q Would you discuss the history of the drilling of this well?

A Well, as I mentioned before, it was approved for a Tocito test in July, 1952, and the Tocito sand was not productive, so permission to deepen the well through the Dakota was requested and obtained in September, 1952. The well was subsequently drilled with 8-3/4 inch bits to a depth of 7795 feet in the Morrison formation.

The presence of gas in the Dakota sands was indicated by drill stem tests made when the well was being drilled. The total volume indicated, however, was believed to be too small at

that time to justify the cost of attempting a completion in the Dakota.

In October, 1952, the hole was plugged back with cement to 3,150 feet and 7 inch OD and 26 pound casing was cemented at 3,052 with 200 sacks of cement. The Pictured Cliffs sand was shot from 3,062 to 3,133 with 1001 quarts of solidified nitroglycerin. After cleaning out, the one-inch tubing was run to 3,040 feet to complete the well as a gas producer. The well is still producing from the Pictured Cliffs sand, the 1959 deliverability test being 689 MCF per day.

Q Now as I understand the application, you propose to make a dual completion into the Dakota, is that correct?

A Yes. The uniformly successful stimulation of Dakota wells by sand fracking during the last few years now makes it appear that a reserve of gas and distillate can be profitably developed in this well in the Graneros-Dakota sands. We feel the most practicable means of developing this reserve will be to use the hole already drilled in such a manner as to permit the production from the Dakota and Pictured Cliffs sands simultaneously.

Q Do you have a picture showing the diagramatic sketch of your proposed completion?

A Yes, sir.

Q Referring to what has been marked as Exhibit No. 2, will you discuss the proposed dual completion?

A In conditioning the well for a Pictured Cliffs completion,

it was necessary to spot cement plugs opposite the different possible pay zones that had been penetrated; so to work the well over and re-complete it as a dual, we first attempted to drill out the cement plugs and underream the hole to 8-3/4 inch to the total depth, 7795 feet. We would then run 5-inch OD-15 pound Seamless casing from 2900 to 7795, and 5½-inch OD-15.5 pound J-55 Seamless casing from 0 to 2900. We would use differential valve multistage cementers at 3300 and 2900. The bottom portion of the casing string would be cemented through the casing shoe with 550 sacks of 12 percent bentonite cement and 150 sacks of Neat cement. That amount is approximately twice the calculated volume required to fill a hole up to 5300 feet, which is the base of the Menefee zone. After eight hours, the well, the second stage would be pumped in through the differential valve cementer at 3300 feet, using 200 sacks Neat. After this cement is put away, the differential valve or the cementer at 2900 feet would be flushed out.

The next step would be to perforate and sand frac the Dakota sands and flow the well until its gas production is free of sand. Then run a permanent type production packer containing an expendable type packer plug to approximately 7250, and that would be to plug off the Dakota zone temporarily.

We would then run an inside casing cutter and cut and pull the 5½-inch casing from 2900 feet. A tapered mill would be run to bell out the liner left in the hole so as to eliminate any chances for anything hanging up in it.

We would then perforate and sand frac the Pictured Cliffs sand and flow it until its gas production is free of frac sand.

The well would then be killed with water and 2-3/8ths upset tubing run to the Dakota packer. This string would be used to push out the expendable plug and latch the tubing into the packer.

A string of 1-1/4 inch tubing would be run parallel to the 2-3/8 tubing to 2900 feet to produce the Pictured Cliffs production. The well head fittings, separators, tanks, and equipment necessary would be installed so that gas and distillate production from each zone could be produced and measured separately.

In preparing the diagramatic sketch that accompanied the application, we had first, we prepared it with the idea of using a 5-1/2 inch liner. The second diagramatic sketch or the one presented as Exhibit 2 this morning shows 5-inch OD. The reason for the change is that we would be able to use the multi-stage cementers with a 5-inch OD casing. We cannot use them with 5-1/2 inch because of the diameter of the cementer, it's too great to run through 7-inch 26 pound casing.

We prefer to use the stage cementing because, if successful, it will eliminate any necessity for squeezing the Pictured Cliff sand; and trying to do a single stage job, as we first proposed, usually winds up in a squeeze job being necessary to cement off the top of the liner; and this, we hope to eliminate

by using the smaller casing in the lower part of the string.

Q Do you have a log of the subject well?

A Yes, sir.

Q That has been marked as Exhibit No. 3.

A Yes, sir.

Q Referring to Exhibit No. 3, what other information is shown on that exhibit?

A Just the top of the various formations that were penetrated when the well was drilled.

Q Do you have a photograph of the area involved in this application?

A Yes, sir.

Q Has that been marked as Exhibit No. 4?

A Yes, sir.

Q Referring to Exhibit 4, would you describe briefly the location of the well in reference to the adjacent canyon?

A Well, as mentioned previously, the well is about a hundred feet from the canyon to the west of the well, and approximately two hundred feet to the edge of the canyon south of the well.

Q Where would that be in relation to the well and the trucks that appear in Exhibit No. 4?

A The truck in the picture is facing approximately south. That's not a very good picture, but it's the best we could come up with on short notice, and it does show, though, the cliff across

the canyon just -- there's a tree that you can see is several feet below the well location. Immediately in front of the pickup and just behind that tree, you can see the ledge or cliff on the opposite side of the canyon. Also to the south, the trees in the background seem to be somewhat lower than the ones in the foreground. That's due to the presence of a ledge immediately in front of the trees, oh, it's ten feet high and there's just a succession of ledges from there to the bottom of the canyon.

Q Now the wells which have recently been drilled to the Dakota have been located in the Northeast Quarter of the Section, have they not?

A Yes. All of the wells drilled by Caulkins Oil Company have been spaced in the Northeast Quarter of the Section in which they were drilled. This was not done in an effort to establish a standard Dakota spacing pattern for the area, though. All of the wells that we have drilled recently to the Dakota in that area have been in a part of the field that might be productive in the Mesaverde zones and the wells have been spaced so that we could comply with Mesaverde spacing and dually complete the wells in the Mesaverde and Dakota if both zones were found to be productive. Earlier Dakota wells drilled in this area did not follow that pattern.

The first Dakota well in the area, the Caulkins Oil Company Breech "A", T-134, was drilled in the Northeast of the Northwest of Section 10, 26, 6. This well has since been plugged

back to the Tocito sand and is being used for injecting water into the Tocito.

The Caulkins Breech "A" D-204 is located in the Southeast Southeast of Section 9, 26, 6; Breech "E" D-83 is in the Northwest Southeast of 5, 26, 6; and the El Paso Natural Gas Company Rincon No. 1 is in the Southeast Southeast of Section 30, 27, 6. All of these wells deviate from the Northeast Quarter pattern. Permission to complete the Caulkins State PC-233 as a dual Pictured Cliffs-Dakota producer was recently granted by Commission Order No. R-1627. This well is located in the Northwest Northwest of Section 16, 26, 6.

Q In regard to the dual completion, Mr. Gray, is that a type of dual completion which has heretofore been approved by this Commission, as to the mechanical features of it?

A As to the mechanical arrangement,yes, it is more or less a standard procedure for dual completions. I believe there have been Pictured Cliff-Dakota duals approved, but I'm not certain of that.

Q Now with this type of completion, in your opinion will there be complete separation of the two producing horizons?

A Yes, there will be complete separations.

Q Will this type of dual completion enable you to make whatever tests are required by the Commission?

A Yes, we can comply with all the rules regulating the operation of both zones.

Q In your opinion is this dual completion in the interest of conservation and the prevention of waste?

A Yes, I think it is.

Q Would correlative rights be impaired by this type of dual completion?

A No, I don't believe they would.

Q Were Exhibits 1 through 4, inclusive, prepared by you or under your direction and supervision?

A Yes, sir.

MR. KELLAHIN: We would like to offer Exhibits 1 through 4.

MR. UTZ: Without objection the Exhibits 1 through 4 will be entered into the record.

MR. KELLAHIN: That's all the questions I have.

CROSS EXAMINATION

BY MR. UTZ:

Q Let me run through the cementing job again. I believe you said that you would set approximately 700 sacks with the top being at the base of the Menefee or 5300?

A Yes, sir.

Q Then your next cementing stage would be from 3300 to 2900 over the Pictured Cliff?

A Yes, sir.

Q That would leave the Menefee and Cliff House open behind the casing, wouldn't it?

A Yes, sir.

Q Is there any other formation that would thieve any production that might be in those two zones?

A The Menefee and the Cliff House are considered to be one reservoir, and I don't believe there would be any movement of gas or anything between sands within the Mesaverde zone. To help protect against such an occurrence, we would leave the mud, I mean the hole filled with mud.

Q What lies just below the Pictured Cliff?

A Well, there are a few wells, none very close, that produce from the Chocra.

Q That's in the Lois shale?

A That's in the Lois shale, that would also be covered with mud.

Q Do you have any Chocra in this area at all?

A There is a slight indication of it, but there are no wells that I know of closer than a mile and a half or two miles.

Q You feel that the mud behind the casing would adequately separate the Cliff House and Menefee from the Chocra?

A Yes, sir.

Q What will the top of the cement be on your seven-inch?

A I don't believe we have a -- I don't have a top on that. If you will excuse me for a minute, I will see.

Q Surely.

A We don't have. The fillup would be approximately six

foot per sack, I believe, seven-inch casing, and an 8-3/4 inch hole.

Q Approximately 300 feet above?

A Yes, but that formation caves pretty badly when it's drilled and probably the fillup would be about half that.

Q It would be approximately 2450 then?

A Yes, sir.

Q Is there any producing formations that lie above that point?

A No, sir. In our area we haven't found anything in any of the sands above the Pictured Cliff.

Q You don't have any Farmington or any of those zones?

A No.

Q How about water zones?

A There are numerous water zones.

Q Between 2450 and 455?

A Beg pardon?

Q Is there any below 455 feet?

A Yes, there are.

Q What formation is the water in in that area?

A Well, the water is found in nearly all of the sands from the surface down to around 2300 feet.

Q What kind of water is it between 455 feet and the 2450, potable water, fresh water?

A Yes, it is, it's good water. It's a little gyppy, but

it is usable.

Q Is it Artesian?

A No, it is not Artesian.

Q You don't think any damage would occur in any water aquifer between this interval of 455 to 2450?

A No, sir. That would be left full of mud, and that is the accepted practice over the whole Basin up there, to leave that not cemented.

Q And you have circulated from 455 to the surface, is that right?

A Yes, sir.

MR. UTZ: Are there other questions of the witness?

MR. PAYNE: Yes, sir.

BY MR. PAYNE:

Q Mr. Gray, do you have approval for an unorthodox location in the Mesaverde?

A No, sir.

Q But this is producing --well, rather, from the Pictured Cliffs. This is producing from the Pictured Cliffs now?

A Yes, sir.

Q And it is an unorthodox location, isn't it, for the South Blanco-Pictured Cliffs?

A Yes, it is. However, I'm not certain it was at the time it was drilled.

Q It was drilled to Tocito, you say?

A Drilled in 1952.

Q What formation was originally drilled to?

A It started out to be a Tocito test, and wound up by being a Pictured Cliff producer.

Q Do you have the year in which the well was drilled?

A It was drilled in 1952.

Q 1952. Mr. Gray, what do you have dedicated to your 244 well in Section 14 on the Dakota side?

A There's 320 acres dedicated to it, but I don't recall offhand whether it was the East Half or the North Half that we dedicated to it.

Q What do you propose to dedicate to your Sanchez No. 1?

A It would be the West Half of Section 24, 26, 6.

Q Now the Dakota rules don't require that you drill in any particular Quarter-Quarter Section, do they?

A Well, I believe the requirements are that you stay 790 feet from the boundary line, or 130 feet from the Quarter-Quarter Section lines.

Q But you can drill in either Quarter-Quarter Section of a 320-acre unit?

A Yes, sir.

Q And that provision was adopted because of anticipated dual completions, was it not, that flexibility?

A Well, I'm sure it was.

Q Assuming that the Dakota Producing Interval is prorated

sometime in the future, I suppose you are aware that an offset operator might have some merit to an argument that the allowable for this well should be adjusted, in view of the fact that it's closer to the unit line than the standard?

A Well, I hadn't thought of that, no.

Q Does Brookhaven Oil Corporation own any acreage adjacent to this well?

A Yes, they do. They own the Southwest Quarter of Section 13.

Q Southwest Quarter.

MR. PAYNE: That's all. Thank you.

A The plat shows Mead, but that is only for the Pictured Cliff rights. I understand that Brookhaven -- well, I forget the name of the other company, but I understand they do have the deep rights on that.

MR. PAYNE: Thank you.

BY MR. UTZ:

Q What is the approximate bottom hole pressure of the Dakota in this area?

A It ranges from 2500 to 3200 pounds.

Q And the Pictured Cliff?

A A thousand pounds was the initial pressure, approximately.

Q That is a permanent type packer you are setting in this well?

A Yes, sir.

MR. UTZ: Any other questions of the witness? If not, the witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements to be made in this case?

MR. PAYNE: Yes, sir. We received the following communication from the Brookhaven Oil Company, which is sent to Mr. A. F. Holland of Caulkins Oil Company and reads as follows:

"Referring to your letter of February 12, 1960 requesting permission to complete the above Pictured Cliffs Well as a Dakota Well in an unorthodox location, please be advised that we refuse our permission to do this, particularly in view of the fact that in Section 14 you have apparently completed a Dakota Well in the northeast corner which, with the above Well, would not give any rhyme or reason to the pattern for Dakota development."

Signed, Thomas B. Scott, Jr., Brookhaven President.

MR. KELLAHIN: Did you likewise receive a letter from El Paso Natural Gas Company? I would like to have that read, too.

MR. PAYNE: Yes, we did, Mr. Kellahin, which states: "This is to advise you that El Paso Natural Gas Company, as offset operator, has no objection to your re-working and dualing the above captioned well as a Pictured Cliffs-Dakota producer." The above mentioned well is the Sanchez Caulkins No. 1.

MR. UTZ: Are there other statements? If not, the case will be taken under advisement.

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing was reported by me in Stenotype, and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

DATED this 29th day of March, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1963.