BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 26, 1968

EXAMINER HEARING

IN THE MATTER OF:)
)
Application of Benson-Montin-Greer) Case No. 3967
Drilling Corporation for a unit agreement,)
San Juan County, New Mexico.)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

Santa Fe, , NEW MEXICO

Hearing Date NOVEMBER 26, 1968 TIME: 8:30 a.m.

NAME	REPRESENTING	LOCATION
Nina L. DuHaime	RW Byram & Co.	SF
A. K. Greer	Benson-Montin-Greer	FMN

MR. UTZ: The hearing will come to order, please. First case on the docket will be case 3967, and the only case.

MR. HATCH: Case 3967. Application of Benson-Montin-Greer Drilling Corporation for a unit agreement, San Juan County, New Mexico.

MR. UTZ: Are there appearances?

MR. COOLEY: William J. Cooley, from Burr and Cooley, Farmington, New Mexico, appearing on behalf of the applicant. We have one witness, Mr. Greer. I would like to have him sworn.

MR. UTZ: Are there other appearances? You may proceed.

(Whereupon, Applicant's Exhibits A through C were marked for identification.)

(Witness sworn.)

ALBERT R. GREER

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

DIRECT EXAMINATION

BY MR. COOLEY:

Q State your full name for the record, please.

A Albert R. Greer.

Q By whom are you employed, Mr. Greer?

A Benson-Montin-Greer Drilling Corporation.

Q Does Benson-Montin-Greer Drilling Corporation own -- at least hold interest in and about the area denominated by the Oil Conservation Commission of New Mexico as the La Plata Gallup Oil Pool?

A Yes, sir.

Q Have you, on behalf of the applicant, made studies with regard to the desirability and advisibility of unitizing of that area?

A Yes, sir.

Q Have you prepared a plat which depicts the unit area which you would propose?

A Yes, sir.

Q I hand you what has been marked as Exhibit A in this case and ask you if that is the plat to which you refer?

A Yes, sir.

Q Would you state for the record what this plat purports to show?

A This plat shows a part of Townships 31 North, 32 North and 13 West and 14 West. Outlined on the plat is the area we propose for the La Plata Mancos Unit and

within that area are shown two presently producing wells, one in the northwest of Section 5, one in the northwest of Section 6 and the three locations colored in green show the location of the three obligation wells required for formation of the unit. The contours are on top of an electric log marker within a Niobrara member of the Mancos formation. It shows the steeply dipping part of the Mancos through the central part of the unit and within this deeply dipping part of the Mancos formation there is a development within the Niobrara which is productive and this is the formation with which we are concerned.

Q Has the selection of the proposed unit area been made by block selection or by geologic inference?

A It has been made by geologic inference.

Q That based upon the contours and the geology as you have explained them on the plat here?

A This is correct.

Q Have you prepared or had prepared under your supervision a proposed unit agreement for the area which you have just discussed?

A Yes, sir.

Q What denomination or name has been given to this unit area and unit agreement?

A La Plata Mancos Unit Agreement.

Q I hand you what has been marked for purposes of identification Exhibit B and ask you if that is a copy of the proposed La Plata Mancos Unit Agreement?

A Yes, it is.

Q Does this unit agreement follow the format prescribed by the Secretary of Interior of the United States of America acting through the United States Geological Survey?

A Yes, sir, it's pretty much the standard form.

Q Does it deviate in any way from the standard form to accommodate itself to the particular needs of the area involved?

A Yes, sir, there are a few --

Q Would you --

A -- special provisions or slight deviations from the standard form of the agreement.

Q Would you call these particular items to the attention of the Examiner?

A The main differences from the standard form of the unit agreements are: 1. We are unitizing only a limited geological section. It's from the top of the Mancos to the top of the Greenhorn. This is roughly three-fourths

of the Mancos formation that's being unitized. None of the other formations are unitized. The second --

Q Let me interrupt. That is the proposed vertical limits of the La Plata Mancos Unit area?

A That's true.

Q Proceed to the second deviation.

A The agreement provides that any well started after June 1, 1968 can be an obligation well and this is regardless of whether the unit is approved at a later date or not, and, of course, in this instance if the agreement is finally approved, which we anticipate it will be, it will be some eight or ten months after the first obligation well was commenced to be drilled.

Q How many obligation wells are called for by the unit agreement?

A The unit agreement requires three obligation wells.

Q Have all three of these wells been commenced?

A Yes, sir. The three wells have to be -- vocations of the three wells have to be approved by the USGS and the State Land Office or the Land Commissioner acting for the State of New Mexico. These three locations have been approved by both the USGS and the Land Commissioner. They are the wells that are shown on Exhibit A. They are in

Units P of Section 31, G of Section 32 and Unit I of Section 6.

Q These are the wells colored in green, are they not?

A Yes, sir. All three wells have been commenced and are in various stages of drilling or completion at this time. A third item is that this agreement provides that separate participating areas will be established for separate deposits or reservoirs. This is a rather unusual provision. We see no problem in dealing with the area in this fashion. In fact, it probably will be best to handle it this way. This is different from the ordinary situation or usual situation.

Q In your opinion, does this provision tend more appropriately to protect the correlative rights of the various operators in the unitized area?

A I think it's a little more specific as to production and tracts to which it is allocated and accordingly it could be a little more equitable than if they are all treated as one participating area. In fact, we probably will waterflood one area and not another, so it is best handled this way.

Q Are there any other deviations from the --

A That's the main differences from the ordinary unit agreement.

Q Has the proposed La Plata Mancos Unit Agreement been submitted to all of the working interest owners within the proposed unit area?

A Yes, sir.

Q Have there been any of those working interest owners who have declined to execute the agreement?

A No, sir. At this time we have had none of the working interest owners decline to participate. We do not yet have commitments of all the working interest owners. I believe we have about commitments which cover about eighty percent of the acreage. We anticipate we will have between or about ninety percent within the next month or so.

Q Have you prepared a land status plat showing the fee ownership or the land ownership of the various tracts within the proposed La Plata Mancos unit area?

A Yes, sir.

Q I hand you what has been marked for purposes of identification Exhibit C and ask you if this is the land status plat to which you refer?

A Yes, sir.

Q Would you explain the symbols and the significance of this plat?

A This land status plat has different zip codes shown on it to distinguish between the various types of land which is Indian, Public Domain, State and Fee. It's approximately half Public Domain and a quarter Indian and a quarter Fee, with about two percent State. The exact areas and percents are shown on this Exhibit C.

Q Would you point out specifically the area wherein the State land lies?

A All the State land is in Section 32. It has wavy horizontal line. It's the west half of the west half of 32 and the southeast quarter of the northeast quarter. I believe one of the obligation wells is located on the State land, G32.

Q What percentage of the working interest owners by tracts owned or area have already consented to execute the proposed unit agreement?

A Approximately eighty percent.

Q Has the proposed unit agreement been submitted to the Secretary of Interior for approval as to form?

A Yes, sir, it has been approved by the USGS as to form.

Q Has it likewise been submitted to the area director for the Ute Tribe of Indians?

A Yes, sir, the area director for the Indian affairs has approved it as to form.

Q Has it likewise been submitted to the Land Commissioner of the State of New Mexico?

A Yes, sir, the Land Commissioner has approved it as to form.

Q What conditions must be fulfilled in order for the agreement to be approved by these three agencies in final, formal fashion?

A The agreement becomes effective upon the approval of the area director of the Indian affairs, the State Land Commissioner and the USGS, and in order to receive the approval of these agencies, we must demonstrate that we have enough parties committed to the unit agreement to provide adequate control of drilling and producing operations.

Q Is there any particular working interest owner who has not yet signed that is crucial to the accomplishment of this control?

A We have completed -- we have received commitment from all of the parties required to show adequate control of the working interest with the exception of Mr. Taylor

and Mr. Walker who own the north half of Section 6. These two gentlemen have now verbally agreed to join the unit and we anticipate having their fully executed commitment within six weeks.

Q In your opinion will the operation and production of the unit area here proposed result in the prevention of waste and protection of correlative rights?

A Yes, sir.

MR. COOLEY: I have no further questions. Mr. Examiner, we now formally offer Applicant's Exhibits A, B and C in this case.

MR. UTZ: Without objection, Exhibits A, B, and C will be entered into the record of this case.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Greer, on your Exhibit A you show quite a number of other wells. For example, you show some dry holes up in the north part of the unit in Section 22, 21, 20; how deep are those dry holes; that is, did they reach the Mancos?

A Some of those reached the Mancos. The Southern Union Number One Jones in the northeast of Section 22 penetrated the area we are interested in or the formation

we are interested in and also the well in the southwest of 20, Number One Johns penetrated this zone.

Q Now down in Sections 31 and 32 I notice dry hole and in 31 is that a location?

A Yes, sir, that in 31 is a location.

Q And how about the Number One Stickler?

A The Number One Stickler is an old hole. It was drilled many years ago and we're not certain of the sholes that this well had.

Q It's doubtful that it reached the Mancos, is that right?

A We think it's possible it reached the Mancos, but the fact, of course, that it was a dry hole really in our -- in my opinion does not condemn the tract, the same as for these other dry holesin this -- If I might add in the particular formation it's very difficult to determine that a -- in fact, it's impossible to determine a tract to be non-productive if it does not have natural production and is not fracked and -- with an adequate frack and most of these wells that are shown to be dry holes were not subject to what we would consider fracture treatment that would definitely establish production or condemn it, a tract. Therefore, we are not particularly

concerned with all the dry holes shown in this area.

Q This one shown in the south half of 32 didn't reach hardly anything did it at 575?

A Well, that's -- I think there are two tracts there and two locations there; the one well, the Texas National Number One Johns did reach the formation and by its electric log characteristics we feel that it has possibilities of producing. It was not fracked and the question as to whether a well in that general area will produce or not will be determined by how badly the area is faulted.

Q Is that TD of 575 correct?

A It might be for one location, if there was one there and another one --

Q You mean for the dry hole --

A Yes, sir.

Q -- near those others circled as a location?

A Yes, sir. Now the two locations that we show there and it could be that the TD of 575 is just a misprint, this I'm not certain. I am certain that the Texas National Number One Johns which is drilled about as shown by the surface location would be as shown by the dry hole symbol and would be bottomed where the small circle is

to the northwest of that symbol and that's the only location that we are concerned with.

Q Now, how about the two dry holes shown in Section 6?

A In Section 6?

Q Yes.

A The tract in the southeast quarter of the southeast quarter was drilled to this prospective formation. It was given only a small frack and with a large amount of open hole so we feel that the zone really was not tested at that location. It will receive -- we feel that area will receive an adequate test through the drilling of our location indicated as I-6.

Q Over in Section 5 is that a Mancos Oil Well in 5?

A Yes, sir.

Q How about the gas well, J5?

A The J5 was drilled through the Mancos with air. It had no shole in the Mancos. It was drilled to the Dakota, completed as a Dakota Gas well and it is now temporarily abandoned in the Dakota and it is our intent to give this well a fracture treatment in the Mancos formation in the near future. We think that this well will produce in this zone when fracked.

Q And the gas well shown down in Section 9?

A That well was drilled through the Mancos formation I believe with mud and completed in the Dakota. From its electric log characteristics we believe it's possible that this well could be productive in the Mancos but we think it's close to the edge of commercial production and that's the reason we have selected that as the eastern boundary of the unit area.

Q And the dry hole in the northwest of 9, is that the same story; it went to the Mancos and just didn't have enough frack?

A In the northeast of 9?

Q Northwest of 8. Did I say 9?

A Northwest of 8, it's our understanding that hole was drilled with a Mancos as the objective, drilled after the N5 was drilled and established to be a commercial producer and in the course of attempting to complete this well, the hole was junked; they lost some tools in the hole and could not complete it so as a result we do not have a definite test in the northwest of 8.

Q And the three wells shown in green are your obligation wells, I understand?

A Yes, sir.

Q And they are being drilled or new wells being drilled now?

A Yes, sir.

Q Do you have any further plans after completing those wells at this time?

A We are currently drilling the N31 in the south-west of Section 31 and as I mentioned a little while earlier we plan on giving fracture treatment to the J5 in Section 5. If I might add at this point while we are discussing the producing capabilities of these wells, we have determined through bottom-hole pressure test of the two currently productive wells in the unit area that they are in two separate reservoirs. There is a -- then a boundary between the two producing wells and we do not know if this might be a narrow boundary as result of a fault or if it's a broad boundary resulting from a series of faults. We believe that faulting is the cause of separation of the two wells. We presume we will establish this information through the drilling of the three obligation wells, particularly the I6 and the G32.

Q Is it your intention to make a pressure maintenance project out of this?

A Yes, sir. Our present plans call for pressure

maintenance in the west reservoir. The west reservoir is in an area of rather steep dips and we're thinking either of gas injection or water injection and at this stage it appears that the most practical method to achieve the highest ultimate recovery in the west reservoir would be through water injection in the P31. We will not definitely know this until we determine for sure that both the G32 and the I6 are isolated from the west reservoir. At this point, it appears that they are. The P31 and the Number One Walker have been established to be in the same reservoir. When we fracked the P31 we noticed a pressure reaction in the Number One Walker, so we have established that continuity to this day and in addition when we fracked the N31 we observed a pressure reaction in the Number One Walker.

Q At least, you got three wells in one reservoir.

A Yes, sir, we have three wells in one reservoir and our analysis of the pressure build-up in the Number One Walker indicates to us that it has dimensions of at least 3,000 feet in each direction which we presume is to be north and south along the strike so we were not surprised to determine communication with these last two wells when they were drilled.

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

REDIRECT EXAMINATION

BY MR. COOLEY:

Q Mr. Greer, has Benson-Montin-Greer Drilling Corporation had experience with other pools in the San Juan Basin that have similar reservoir characteristics as the La Plata Gallup Oil Pool?

A Yes, sir.

Q Has it been their experience in those pools that it's impossible to determine whether a well is productive or non-productive without comparatively large fracture treatments?

A This is true unless the well happens to make natural production, of course, which it has been our experience it's very seldom that these wells show natural production or natural productivity.

Q Well, you have had experience, have you not, of having a completely dry well without fracture treatment to develop into an extremely large one and productive, economic well after treatment, have you not?

A Yes, sir, we have.

RECROSS EXAMINATION

BY MR. UTZ:

Q You consider this area to be fractured?

A Yes, sir. Incidentally, we have cored all four wells which we have drilled and we have observed the fractures in the cores.

Q One of the things that happens with a big frack job is that you frack into from a dry area into the fractures that are productive, is that true?

A Yes, sir. Our thinking as to the character of these reservoirs is that they contain a fairly good or well-connected fracture system for whatever the size of the reservoir -- let's say a thousand acres and then within this area the little -- there can be tiny -- you might call them fracture blocks, tiny as compared to the one thousand acres, but they could be as much as one or two acres large that you would drill into that would be absolutely non-productive, then by fracturing the well you establish communication then with the main fracture system and then you have a commercial well. Just how big a fracture treatment is required, of course, varies from well to well and we never know. We have observed what we think is the connection with the fracture system after we have injected as much as

four or five thousand barrels of oil and we felt had we stopped with a smaller frack, we would have ended up with a dry hole, whereas instead we made a commercial producer and, of course, if you are lucky, you will drill into one of the fractures and save all the expense of having to fracture, but that doesn't happen very often to us.

Q If you are lucky, you might recover some oil?

A Yes, sir.

MR. UTZ: Are there other questions? The witness may be excused. Are there statements in this case? The case will be taken under advisement. The hearing is adjourned.

(Witness excused.)

I N D E X

STATE OF NEW MEXICO)
)ss
COUNTY OF BERNALILLO)

I, GLENDA BURKS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand this 27th day of November, 1968.

Glenda Burks
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3967, heard by me on 11-26, 1968.

Examiner
New Mexico Oil Conservation Commission