

DIRECT EXAMINATION

BY MR. MCKENNA:

Q Will you state your name, please?

A William A. Heck.

Q Have you testified before this Commission any earlier time?

A No, sir.

Q By whom are you employed, Mr. Heck?

A Chambers & Kennedy, Midland, Texas.

Q What is your employment?

A I am a geologist.

Q Will you tell the Commission, the Examiner, your qualifications, education, background and former employment?

A I was graduated from Lehigh University, Bachelor of Arts degree in Geology in 1948; '48 to '52 I was employed by the United States Geological Survey, Fuels Division; 1952 to 1955, consulting geologist and mud logger in Midland, Texas; July of 1955 to January of 1956 I was a consulting geologist for DuFour Cities Service Oil Company in southern Arabia; since 1956 I have been employed by Chambers & Kennedy.

Q As a geologist?

A Yes.

MR. MCKENNA: I move his qualifications as an expert be accepted.

MR. UTZ: His qualifications are acceptable.

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Q (By Mr. McKenna) Are you familiar with the instant well in question, State Monument No. 1?

A Yes, sir.

Q Can you tell the Examiner and the Commission the present status of this well?

A This well is currently producing from the Grayburg-San Andres zone from 3748 to 3786. It is currently producing at approximately 40 barrels of oil a day, and about 5 barrels of water, and that is the status to this point. It is producing only from the Grayburg-San Andres; no perforations in the casing above this zone.

Q Will you tell the Examiner the purpose of this application?

A We would like to create a 200-acre gas unit embracing the five quarter sections which are set out by the Zippatone pattern in Section 34, 19, 37. We would like the Commission to grant us this 200-acre gas unit, and since this is an irregular location we would like permission to proceed with this completion in the gas zone even though it is an irregular location.

Q The production would be from the Eumont gas intervals; is that correct?

A Yes, sir.

Q Can you tell the Examiner your plans, briefly, for the well? It would be a dual completion; do you know how that would be done?

A Our engineer is out of town, so I speak here with not too much authority. I would estimate he would run a packer, run the

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tubing we have in the Grayburg sand and through it and produce the gas from the Penrose zone through the annulus, but if this is not in keeping with the Commission practices I am sure our engineer will alter it to fit the practices.

Q Mr. Heck, referring to Exhibit No. 1, may I ask, was this plat prepared by you, under your supervision or at your direction?

A Actually it was under Mr. Alexander's direction. The location of the well, this specific location was not set out by me, but I was aware of why it was being located here.

Q What is the exact location of the present well?

A It is 1649 feet from the south line and 2197 feet from the east line of Section 34, 19 South, 37 East.

Q Can you tell the Commission what was the reason for the location of the well as it is now located?

A From the inception this well was designed to be completed in both zones. The Grayburg-San Andres zone is rather a difficult one to pick an oil-water contact in, so we played the geological odds and moved as far south as we could get because of the wells Mr. Byram has to the south of us there, while making considerable amounts of oil, also make considerable amounts of water. We felt since we were ignorant of the oil-water contact, no wells completed down dip, the prudent thing would be to play proximity rather than guess at the oil-water contact.

Q What acreage do you propose to dedicate to the Eumont gas well?

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A It would be the N/2 of the SE/4, the S/2 of the NE/4, and the NE/4 of the NE/4.

Q Can you tell the Commission what was the reason for the proposed dedication, the NE/4 of the NE/4 of 34?

A It is, to my knowledge, the only uncommitted 40-acre tract in that section to a gas unit.

Q Referring to Exhibit No. 2, can you tell the Commission just what that exhibit is?

A Figure No. 2 is Land Plat, drawn on the scale of 1 inch is equal to 1,000 feet. I have prepared a top of the Yates map and top of the Penrose map to show the structural configuration of the area, and the gas unit is outlined in the Zippatone pattern. The Section A A prime is Figure 1, which is a cross section going from a well south of us which is adjacent to a Eumont gas well, and proceeding north through our well, northwest through a gas well not producing from the Eumont gas pay but showing the gas there. It is currently shut in. That is a Eumont gas producer. Northeast is a well which is completed in the Eumont oil pay, and then almost east to Shell's EMC which is producing from the Eumont oil zone.

Q Referring to Exhibit No. 3, can you tell the Examiner what this purports to represent?

A We believe that the cross section will show that Chambers & Kennedy No. 1 Monument State, the entire Penrose zone, approximately 130 feet in interval, would be entirely in gas, and it probably will remain all gas to the bottom of the Penrose zone as

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far north as the south line of the most northeasterly quarter of that 40-acre tract. The Shell EMC No. 1 is completed in the base of the Penrose and originally completed as an oil well. It is currently making 299 barrels of oil a month, and 2,351,000 cubic feet of gas for a gas-oil ratio of 7,000 to one. There seems to be a reasonable oil-gas contact at minus 184, which is shown on the cross section.

Q Exhibit 3 sets forth the logs, does it?

A Yes. It is the cross section, standard scale logs, one inch to 100 feet, through all of the wells drawn on Section AA prime.

Q Mr. Heck, do you believe that the 200 acres will be productive of gas from the Eumont gas pool intervals?

A I believe that the 200 acres here involved will be in the gas column of the Eumont pay. There is evidently some reservoir condition which can't guarantee you are going to produce commercial gas from all locations, as evidenced by the fact that Sinclair's 1373, a gas well in the SE of the NE is an abandoned well that attempted completion in the Penrose gas zone, but never sustained large enough volumes of gas to warrant connection.

Q What are your perforation plans for this Eumont gas well?

A Perforations are shown on Figure 3, anticipated, from 3590 to 3714 feet, roughly. They will not be continuous but they will be dictated by log selections.

Q Can you state to the Commission, generally speaking, what is your basis for believing that the 200 acres will be productive

of gas?



A The Shell 1 EMC is the only well which is low enough on that tract to have fallen into the oil column, and since this well is currently now showing a high GOR and this zone is depleted in the oil column for all practical purposes, as are the west offsets, east offsets, southeast offsets and north offsets, we feel that even though there is a possibility that our perforations in the Monument State 1 would, stratigraphically, be equivalent to the oil zone that is producing from the Shell 1 EMC, in effect all that is left in this reservoir, if we are going to drain that far north it will be gas.

Q Do you know what the gas-oil ratio of Eumont gas will be?

A Well, these wells are evidently very strong gassers. No. 5 Sinclair Williams, which we have shown as the third well, 2.6 billion potential on a half-inch choke. The 3, which is its west offset, 6.4 million on a 2-inch orifice; the Byram No. 1 Williams, originally potentialled for 22 million feet, and during its history has made over, I believe the figure is three billion feet, so that we are evidently dealing with a strong gas reservoir.

Q Is there anything in your application that will impair correlative rights, in your opinion?

A No, I do not think so.

Q Is it your opinion that your application is in keeping with the principles of conservation?

A As I understand them, yes, sir.

Q Is there anything further?



A Only that the unit shown here, the oil companies involved, Shell, Sinclair, and Texaco, are participants in this venture with us.

MR. MCKENNA: I believe that is all I have for the time being.

BY MR. UTZ:

Q Mr. Heck, are you intending to complete this well in the Penrose?

A Yes, sir. The proposed perforations on Figure 3, the perforations will run no lower stratigraphically than shown. Some we may elect to leave out, but at this time the probability is good that we will perforate zones where each of those dots are.

Q Then you will not perforate in Seven Rivers?

A No, sir. We are going to stay all in the Penrose.

Q Shell State No. 1 in the NE NE of Section 34, that is completed in the same interval which you intend to complete this well in?

A In approximately the bottom 40 feet of our perforations. If we left off the bottom 40 feet of our perforations we would not be working the same zone stratigraphically.

Q Do you happen to know what the GOR of that well is?

A 7,830 to 1. It is on Figure 3. I have November, 1960, production. It is set out in the typewritten space above the 3600 foot mark.

~~Q Where did you say that there was a possible gas-oil con-~~

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tact in the Penrose?

A About a minus 184, and we took this data from Sinclair's 5 Williams and the Sinclair 3732, which is the northeast diagonal offset. One of them made 726 barrels of oil in six hours on the original potential, with a GOR of 1878, and the other one, the Sinclair 5, which, fortunately, the perforations run practically down to the top of the oil perforation in the other well, so it seems reasonable to assume that this, perhaps, does demarcate the oil-gas contact, but the Sinclair well made 2.4 million feet. There was no report of any oil with it, so we assume that 184 is reasonable.

Q Can you give me the sea level datum of the perforations in the Shell well?

A They begin at minus 221, and continue to a minus 231.

Q Minus 184 is the top of the oil, so this would be completed 40 feet below the gas-oil contact. Now, in your opinion, where would the gas-oil contact cross the northeast of the northeast quarter?

A That is a tough one there. It probably would be safe to assume that the gas-oil contact originally was further south, but I believe, since that oil has all been drained out there, we are really not encroaching on the oil reservoir, and on straight geologic inference I would say the whole NE/4 would probably be below the gas-oil contact. That is, it would be in the oil column.

Q And on the other 160 acres there are no oil wells?

A There are no oil wells, no, sir, except in the Grayburg-

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San Andres, of course?

Q But not in the Eumont?

A Just in the Eumont pay there are no other wells. The Sinclair 1373 was deepened from its original completion and there are many attempts made up and down the hole, some below the Penrose, in which they could not establish anything but rather modest gas production on the order of 200 to 500,000 cubic feet.

Q The Penrose section which you intend to perforate is in the vertical limits of the Eumont gas pool; is that correct?

A Yes, sir.

Q Now, the Sinclair Williams No. 5, is that a Eumont gas well?

A No, sir, it is not. It is not producing. The No. 3, which is its west offset, is carried on the production records, and I have the log which will show its perforations are relative to the No. 5. The No. 5 made gas only on tests of its perforations, which are shown on the cross section.

Q Are there any gas wells to the north and east of Eumont gas wells, north or east of this proposed unit?

A None to my knowledge, sir, but my knowledge is restricted to what you see on this plat. There are no gas wells shown in the N/2 of the Section. There would be no gas wells shown in the Section east. That is the N/2 of Section 35, or in the entire section to the northeast.

Q What about the section to the north?

A The section to the north has the Aztec No. 1 Maxwell

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State, and in the north half there are no gas wells shown.

MR. UTZ: Are there any other questions?

BY MR. PAYNE:

Q I presume you have filed for administrative approval for dual-completing this well?

A I do not know, sir. The engineer handles those forms, and he is currently in Louisiana. In fact, I am here by virtue of his absence. I really don't know what has transpired.

Q You say this well was originally projected to both the Monument and the Eumont, or was it just projected as a Monument oil well?

A Our economic evaluation was such we could not justify digging to either zone alone, but it demands a dual completion from our standpoint to be a good economic deal.

Q You are aware if it were a gas well in the Eumont, a 660 location would be required?

A I am not familiar with the rules as to spacing, sir. I am here to defend the geological end of it, and I was informed that 160 was the unit for this, while a 640 was the legal spacing, in reality, 160 was the pattern conformed to.

Q I am talking about well locations.

A The overriding consideration in our making the irregular location was the fact that the great amounts of water made in the Grayburg-San Andres, we were afraid if we honored the 660 location

we would be in trouble in the Grayburg-San Andres, so we were faced

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with evil no matter which way we went.

Q Assuming it had been projected as a Monument oil well, you would have to have a 330 location then. I notice this one is 329.

MR. UTZ: Was that oil location ever approved as an unorthodox location?

MR. McKENNA: It is my understanding it was. I don't know.

THE WITNESS: I am at a loss to explain it, sir. I don't know why the foot difference.

BY MR. UTZ:

Q Perhaps some topographical obstruction?

A No, sir. I have been there, Christmas Eve. There is a cemetery 115 feet west. Whatever the obstruction is it is not visible.

Q I am a little bit concerned. You are going to have 200 acres dedicated to the Eumont gas well, and you are also going to have 40 acres on that Shell well dedicated to a Eumontoil well?

A No. Shell is going to keep that 40-acre tract and produce it. This unit is only for the purposes of the Eumont gas.

Q So you are going to end up with dual dedication?

A You are getting in territory which I am very vague about, sir. I can see what you mean there. If that is the case, that is not our intent.

Q But at least on 40 acres of the proposed 200-acre unit it is productive of oil as well as gas?



A The northeast 40 is productive of oil at this time, yes, sir, from the Eumont oil zone, and our well is productive from the Grayburg-San Andres.

Q You said this Shell well was pretty well down the hill. How long do you anticipate that well will continue to be productive?

A I can't answer that.

Q What is it producing now?

A November production was, I believe, 299 plus 2,351,000. Its west offset is currently a 234-barrel well; Salsich well, which is in Section 35 is currently a 58-barrel well; its north offset is the Tidewater, which is about a 154-barrel well, the Tidewater 2-AJ, north offset to EMC.

Q Are these monthly figures?

A I took from November. November was a bad month weather-wise, but these wells are evidently all fairly far along in their depletion history. The 2-AJ showed 25 barrels, and we are fairly sure of Mr. Salsich's well, his other well there, Section north of 34, 2-EB is a 58-barrel well approximately also, because they approached us to buy them for salvage.

Q How rapidly is the gas-oil ratio increasing on the Shell well?

A I do not have specific data.

BY MR. PAYNE:

Q Do you anticipate that will ever become a gas well?

A I do not believe it will ever sustain large enough volumes



to be a commercial gas well.

Q Will it ever get to 100,000 to one?

A I was talking to the Salsich people about their wells. In their productive history they don't seem to increase in gas as the oil diminishes. They just seem to stop everything. It is rather odd, but there seems to be nothing coming to the bore hole to speak of, gas or oil, and the GOR seems to be rising because the oil is falling off so badly.

MR. UTZ: Any other questions?

REDIRECT EXAMINATION

BY MR. McKENNA:

Q Dedication of the 200 acres is clearly to be to the Eumont gas interval, is that correct?

A Yes, sir, Eumont gas interval.

MR. McKENNA: I might respectfully request, so far as such may be necessary, whether this might be the appropriate time, I move for the approval of the location of the well as a Grayburg-San Andres producing well at the present time.

MR. PAYNE: It is producing now, isn't it; just not producing in the Eumont.

MR. McKENNA: As to any possibility of its being unorthodox, although I think this has been approved.

MR. PAYNE: This one deviation was approved by the District Supervisor.

THE WITNESS: I don't understand that, because it it not

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that rugged out there.

MR. UTZ: Probably a surveying error.

THE WITNESS: The cemetery is 115 feet west of us. There may be another jog to the north. There are no headstones, but maybe the physical limits of the cemetery are such it would be pushing it on the north line, but just looking, by inspection, the headstones all lie west.

MR. McKENNA: There might be some dead bodies not visible to the eye.

THE WITNESS: There is a possibility.

MR. McKENNA: I respectfully move that Exhibits 1, 2 and 3 will be entered into the record.

MR. UTZ: Without objection the exhibits may be entered. Witness may be excused. Any other statements in this case?

MR. PAYNE: Mr. Examiner, we received a telegram from Shell Oil Company concurring in the application, seeking approval of it.

MR. UTZ: Shell is the owner of the NE of the NE?

MR. PAYNE: Yes, sir.

MR. UTZ: Case will be taken under advisement.

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STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO) ss

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 2nd day of February, 1961.

June Paige

Notary Public-Court Reporter

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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 2167,
heard by me on _____ 1967.

Examiner
New Mexico Oil Conservation Commission

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