

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

TRANSCRIPT OF PROCEEDINGS

CASE NO. 376

June 19, 1952

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO.

JUN 20 1952

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BEFORE THE
OIL CONSERVATION COMMITTEE
SANTA FE, NEW MEXICO

JUNE 19, 1952

In the Matter of:

Buffalo Oil Company's application for
exception to Commission Rule 506 (a)
with regard to its wells in the Maljamar- Case No. 376
Paddock Pool, Lea County, New Mexico,
and the gas-oil ratio limitation pre-
scribed therefor.

MR. SPURRIER: The next case is Case No. 376.

(Notice of Publication read by Mr. Graham.)

MR. JACK M. CAMPBELL, Atwood, Malone & Campbell,
Atty's. at Law, Roswell, appearing on behalf of Buffalo Oil
Company: I would like to make a brief preliminary statement
to the Commission. This application filed by Buffalo Oil
Company is for an exemption to Rule 506 A of the Commission
limiting gas-oil ratio in the Maljamar Paddock Pool in Lea
County, New Mexico. Buffalo Oil Company owns all of the wells
in the pool which are only three in number. The royalty under
the wells is all owned by the United States of America. The
adjacent or adjoining owners of leases have been advised and

letters will be introduced in evidence showing that they have no objection to the application. The U. S. G. S. has been advised as to the application and as we understand it is entering no protest in connection with it. The reason for the application, as the testimony will show is that this is a pool of very limited size, very thin and tight pay section and from the point of view of economics to prevent the premature abandonment of the wells and to obtain all the oil possible from them, the application has been made.

R A L P H L. G R E Y,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. CAMPBELL:

Q State your name please.

A Ralph L. Grey.

Q By whom are you employed?

A Buffalo Oil Company.

Q In what capacity?

A Assistant Superintendent.

Q Are you a petroleum engineer?

A Yes.

Q You testified before this Commission in that capacity?

A Yes.

MR. SELLINGER: Are the witness' qualifications acceptable to the Commission?

MR. SPURRIER: They are.

Q Are you acquainted with operations of the Buffalo Oil Company in the Maljamar Paddock Pool in Lea County, New Mexico?

A Yes, I am.

(Exhibit No. 1 marked for identification in Case No. 376.)

MR. CAMPBELL: I hand you what has been identified as Exhibit No. 1 and ask you to state to the Commission what that represents.

A This is a map, showing wells that have been drilled to the Paddock zone in the Maljamar Paddock Pool. It shows the three completed wells and also the 7 surrounding dry holes in the Paddock.

Q Is Buffalo Oil Company the owner of all the producing wells in this pool?

A That is right.

Q In your opinion by the drilling of the 7 dry holes have the limits of the pool been fully defined?

A We think they have.

Q Who are the royalty owners, owning the minerals underlying the three wells in the pool?

A The U. S. Government.

Q Have you discussed this matter with the officials of the U.S.G.S.?

A Yes. We discussed it with the local office at Artesia and also at the Roswell office and both offices have been notified of the circumstances and of our intentions to ask for this order.

Q Have you discussed this matter with the Kewanee Oil Company and the Carper Drilling Company which the map indicates own leases in the vicinity of this operation?

A Yes, that is right, both companies have been.

(Exhibits No. 2 & 3 marked for identification in Case No. 376.)

Q I hand you what have been marked Exhibit No. 2 and Exhibit No. 3 and ask you to state to the Commission what those are.

A Exhibit No. 2 is a letter from Kewanee Oil Company to the Buffalo Oil Company, stating that they have no objections to the removal of the limiting gas-oil ratio for the Maljamar

Paddock Pool.

Q What is Exhibit No. 3?

A Exhibit No. 3 is a letter from the Carper Drilling Company, also stating that they have no objections.

MR. CAMPBELL: Let the record show that Exhibits 1, 2 and 3 have been offered in evidence.

MR. SPURRIER: Without objections they will be received.

Q Mr. Grey, will you give to the Commission the well data that you have available on the Lee Wells that are now located in the Maljamar Paddock Pool?

A The discovery well, Mitchell B, 20 P, was completed May 1950, total depth of 5288. The pay was encountered from 5276 to 5288 however there was only approximately 12 feet of net pay of which only about five feet of this was considered good pay. Average permeability from core analysis was 8.2 milidarcys. Average porosity was 12.6%. The well was acidized with 45 hundred gallons. Initial potential 158 barrels of oil per day through a 26/46 inch choke.

The second well drilled, Mitchell B, 22 P, was completed July 23, 1950. Total depth 5442 pay interval was from 5278 to

5299. A net pay thickness of 15 feet was found within this interval of which only about 4 feet could be considered good pay. The average permeability for this well from core analysis was 9.8 milidarcys. Average porosity of 10.4%. The well was treated with 1800 gallons of acid. The initial potention was 92 barrels of oil per day through 14/64 inch choke.

Mitchell B, 19P was a shallow well deepened to the Paddock pay and it was completed August 20, 1950. Total depth 5386, the pay interval was 5375 to 5383 with a net pay thickness of which 6 feet was considered good pay. This well had an average permeability of 3.92 milidarcys. 16% porosity. It was not acidized. Official potential was 185 barrels of oils per day, through 7/64 inch choke.

Q What has been the cumulative production of oil from these three wells since their discovery?

A Mitchell Well B, 19 P through April 1952 had produced 29,591 barrels, Mitchell B, 20 P had produced 25,441 barrels, Mitchell B, 22 P produced 32,467 barrels.

Q From your knowledge of these wells and their production to date do you consider the operations in this particular pool to be a marginal operation from the point of view of return of your investment?

A It is, in fact it is very doubtful that the wells will ever pay out and it is certain that the total cost of, including dry holes, will never be paid out.

Q Will you now advise the Commission as to the bottom hole pressure information you have on these three wells?

A The original bottom hole pressure in Mitchell B, 19 P taken September 5th, 1950 was 1952 pounds per square inch. On January 22, 1951 pressure was 1944, January 22, 1952 it was 1928. Mitchell B, 20 P, initial pressure taken May 6, 1950 was 1925 pounds per square inch. September 5th, 1950 pressure had declined to 1889. January 22, 1951 pressure was 1808. January 22, 1952 pressure had declined 1660. Mitchell B, 22 P initial pressure September 5th, 1950 was 1952 pounds per square inch. January 22, 1951 it was 1759, January 22, 1952, had declined to 1615.

Q To complete the well information on these three wells will you briefly give the gas-oil ratio history on these wells?

A On Mitchell B, 20 P gas-oil ratio tests have been taken at intervals of every few months. On May 12, 1950 gas-oil ratio was 1509, September 10, 1950, was 2227, April 7, 1951,

was 4319, August 4, 1951, it was 8860, and in April 25, 1952, had increased to 12,678. On Mitchell B, 22 P the gas-oil ratio was originally 1389.

Q What date was that?

A July 27, 1950.

Q What was the latest gas-oil ratio you took on that?

A That on April 24, 1952 had increased to 1893.

Q What was the situation with reference to Mitchell B, 19 P?

A Mitchell B, 19 P is located on flanks of the structure near the water table and it has a local very high permeable condition. The gas-oil ratio has always been low at this well. It was 8550 originally and at the present time it was 508.

Q That well then, so far as your present problem is concerned, does not give you much difficulty?

A It is not anticipated that the gas-oil ratio will be any problem with this well.

Q Based upon that information as to the drop in the bottom hole pressure and the increase in the gas-oil ratio will you state to the Commission what you consider to be the reason for that condition?

A With such a low permeability and very thin pay section

it is impossible to produce any substantial quantity of oil without a very rapid increase in gas-oil ratio. It can be expected that this increase will continue and at a very sharp increased rate.

(Mark Exhibits 4, 6 & 6 for identification.)

Q I hand you what has been identified as Exhibit No. 4, 5 & 6 and ask you to state what those are.

A Exhibits 4, 5 & 6 show the results of core analyses on Mitchell B, 19 P, Mitchell B, 22 P and Mitchell B, 20 P.

Q What generally do those core analysis reflect insofar as the permeability is concerned and the thickness of the pay section?

A These core analyses show definitely that the oil zone is very thin and has a low permeability and a fairly low porosity.

Q I would like to offer these in evidence.

MR. SPURRIER: Without objection they will be received.

Q In view of the gas-oil ratio situation and the limit that is placed on that ratio by the rules, what has been the result with reference to the allowable production from the wells?

A Results of the gas-oil ratio and Mitchell B, 20 P

exceeding the limit for the pool, the allowable was penalized in June 1951 to 25 barrels per day and in June 1952 allowable has been further penalized to 10 barrels of oil per day.

Q And in the light of that reduction in the allowable what might result in the event relief is not granted in regard to that particular well?

A Well, it is pretty obvious that gas-oil ratio is increasing very rapidly and the penalized allowable is now down to 10 barrels of oil per day. Further decreases will put the well in the status of not becoming profitable to operate.

Q In the event the Commission grants the application here what do you contemplate doing with the gas that is produced from these wells?

A We contemplate continuing to gather the gas and process it through the Maljamar repressure plant. It is now being taken by the plant and gas is processed, gasoline, butane and propane are removed and the residue gas is injected back into the Maljamar-San Andres pay zone.

Q Have you discussed this matter with officials of the Maljamar agreement?

A We have discussed that the plant has a more or less

slack period during the night in which they are low on gas and if we are allowed to remove the gas-oil ratio limitation it will enable us to produce this well during the night at such a time that the gas will be able to take all of the gas and thereby help the plant in the repressuring operation.

Q In other words you contemplate if the application is granted and the gas-oil ratio is increased that all the gas that is produced will be processed through the plant and there will be no waste of the additional gas produced?

A That is right.

Q In your opinion will you recover more oil from this reservoir if this application is granted than if the application is denied?

A That is true because the well naturally can not be produced at a loss. It has to produce at a profit and by removing gas-oil ratio limitations it will be possible to continue producing the well at a profit for a longer period of time.

MR. CAMPBELL: I think that is all.

MR. SPURRIER: Does anyone have a question of this witness? If not, the witness may be excused.

(Witness excused.)

MR. SPURRIER: Is there a further comment in this case? If not, the case will be taken under advisement and we will proceed to Cases 363 and 377. Are you prepared Mr. Reed?

MR. REED: Yes, we are ready.

STATE OF NEW MEXICO)
 :
COUNTY OF BERNALILLO)

I HEREBY CERTIFY that the foregoing and attached transcript of hearing in Case No. 376 before the Oil Conservation Commission, State of New Mexico, at Santa Fe, on June 19, 1952, is a true and correct record of the same to the best of my knowledge, skill and ability.

DATED at Albuquerque, New Mexico, this 25th day of June, 1952.


REPORTER

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