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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

Wednesday, November 28, 1973

IN THE MATTER OF:

Application of Mobil Oil
Corporation for a pressure
maintenance project, Lea
County, New Mexico.

Case No. 5116

BEFORE: Richard L. Stamets,
Examiner

TRANSCRIPT OF HEARING

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MR. STAMETS: Case 5116.

MR. CARR: Case 5116: Application of Mobil Oil Corporation for a pressure maintenance project, Lea County, New Mexico.

MR. SPERLING: J. E. Sperling, of Modrall, Sperling, Roehl, Harris and Sisk, Albuquerque, appearing on behalf of the applicant. We have one witness to be sworn.

MR. STAMETS: Are there any other appearances in this case?

(No response)

MR. STAMETS: You may proceed, Mr. Sperling.

* * * *

JOHN SEEREY,

was called as a witness, and after being duly sworn according to law, testified as follows:

DIRECT EXAMINATION

BY MR. SPERLING:

Q Would you please state your name, your employer, and the position in which you are employed?

A John Seerey, associate engineer with Mobil Oil Corporation, Midland, Texas.

Q Have you on any previous occasion testified before the Commission as an expert witness and had your qualifications made a matter of record?

A Yes, I have.

1 MR. SPERLING: Are the witness's qualifications
2 acceptable, Mr. Examiner?

3 MR. STAMETS: They are.

4 Q (By Mr. Sperling) Would you state the purpose of the
5 application filed by Mobil in this case?

6 A Mobil Corporation requests authority to institute a
7 pressure maintenance project by the injection of water
8 and/or gas into the Middle Pennsylvanian formation of
9 its Bridges State Well No. 147 located in Unit F of
10 Section 13, Township 17 South, Range 34 East, Vacuum-
11 Middle Pennsylvanian Pool, Lea County, New Mexico.

12 Q Would you, by referring to Exhibit Number One, define
13 the location of the Bridges State lease and the pool in
14 which it is located?

15 A Exhibit One is a plat showing a segment of the Vacuum-
16 Middle pool. This plat shows all the wells and leases
17 within a two-mile radius of the proposed project. Each
18 well is identified as to producing horizon by color code.

19 The proposed pressure maintenance project area is
20 shown outlined in green on Exhibit One. The proposed
21 project area consists of the west half of Section 13,
22 Township 17 South, Range 34 East, Lea County, New Mexico,
23 containing approximately 320 acres.

24 Q And that project area is roughly in the center of the
25 exhibit, is that correct?

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1 A Yes, it is.

2 Q Is Mobil requesting anything other than approval of the
3 project area as a pressure maintenance project by its
4 application?

5 A Mobil is requesting that administrative procedure be
6 established whereby the project area may be expanded at
7 a future date, and whereby additional injection and
8 producing wells in the project area may be approved
9 without the necessity of notice and hearing.

10 Q Is it part of Mobil's request by this application that a
11 special allowable be established for the project?

12 A No, no special allowable. No special pool rules exist
13 for the Vacuum-Middle Pennsylvanian Pool. Therefore the
14 non-marginal wells in this pool are now assigned a top
15 unit allowable of 320 barrels of oil per day for 40-acre
16 spacing in accordance with the depth bracket allowable
17 of 10,000 to 10,199 feet. No special allowable is
18 requested by Mobil in this application.

19 Q Mr. Seerey, would you give us a brief history of the
20 pool, and explain some of the more prominent characteristics
21 of it?

22 A The five-well Vacuum-Middle Pennsylvanian Pool is located
23 near the town of Buckeye, New Mexico, approximately
24 twenty-five miles northwest of Hobbs in Lea County. The
25 first well completed in the Vacuum-Middle Pennsylvanian

1 Pool was the Mobil Bridges State Well No. 121. It was
2 completed with a flowing potential of 468 barrels of oil
3 per day in August of 1967.

4 The Vacuum-Middle Pennsylvanian Reservoir is produced
5 by solution gas drive. There is no evidence of water
6 encroachment. The effective pay thickness is estimated
7 at sixteen feet with an average porosity of eight percent.
8 The permeability is low, probably in the range of one
9 to three millidarcies.

10 The original oil in place is estimated to be 2.7 mm
11 barrels.

12 Q Would you please refer to what has been marked as Exhibit
13 Two, and explain the purpose of that exhibit and what
14 it portrays?

15 A Exhibit Two is an isopack map of the Vacuum-Middle
16 Pennsylvanian Pool. It is based on the porosity logs
17 of the wells drilled through the Middle Pennsylvanian.
18 The net feet of pay used to prepare the map is shown by
19 the wells outlined in black, and the pay figures themselves
20 are in red underneath the designated well. For instance,
21 in Unit D of Section 13, we have Well No. 165, and below
22 it we have the figure 17, representing the effective
23 feet of net pay, and it is underlined in red.

24 The logs of these wells that contain these figures
25 were used in preparing this isopack map.

1 The proposed project area is shown shaded in green,
2 and, as we have stated before, it contains 320 acres all
3 above the zero isopack line. The project area includes
4 two producing Middle Pennsylvanian wells. Those are
5 Wells 165 and 147.

6 Well No. 121 and Well No. 120 are in the lower part
7 of the proposed project area.

8 Q It appears from the exhibit, Mr. Seerey, that there are
9 only five wells comprising the Middle Pennsylvanian Pool
10 in this area, is that correct?

11 A Yes, it is.

12 Q It also appears from the exhibit that of the five wells,
13 two of them are now classified as temporarily abandoned,
14 is that correct?

15 A That's correct.

16 Q And that is one within the project area and one immediately
17 to the east outside the project area?

18 A That's correct.

19 Q Now, would you refer to the proposed plan of Mobil for
20 this pressure maintenance project?

21 A The Bridges State Well No. 147 in Unit F of Section 13,
22 Township 17 South, Range 34 East is the proposed injection
23 well. Water or water and gas will be used, and will be
24 provided by the North Vacuum-Abo unit injection system
25 on some mutually agreeable basis.

1 Exhibit Three is a plat of the existing North Abo
2 injection unit injecting system. It shows that the
3 existing system can provide injection fluids for the
4 project without any serious difficulty. The maximum
5 injection rate and pressure for this Middle Pennsylvanian
6 Reservoir is expected to be 500 barrels of water per day
7 at 4,000 PSI, or 3,000 MCF of gas per day at 6,000 pounds.

8 The gas mentioned here would be inner gas intended
9 to be injected into the North Vacuum-Abo formation. It's
10 flue gas.

11 Q As I understand your testimony, you propose to use the
12 existing Abo pressure maintenance or secondary recovery
13 project in order to accommodate what is proposed for the
14 Middle Pennsylvanian pressure maintenance project?

15 A Yes. The North Vacuum-Abo unit water supply is obtained
16 from sands under permit issued by the State Engineer
17 authorizing usage of 1200 acre feet per year, or 25,500
18 barrels of water per day.

19 Exhibit Four is an analysis of the Abo water that
20 we intend to inject. The oxygen will be removed from
21 the water by a scavenger tower. Produced water resulting
22 from this project will be re-injected into the existing
23 Vacuum-San Andres waterflood in the same area.

24 The gas will consist of eighty-nine percent nitrogen
25 and eleven percent CO₂.

1 Q Will you refer to Exhibit Number Five, and tell us what
2 that is?

3 A Exhibit Five is a diagrammatic well bore sketch of the
4 proposed Abo-Middle Pennsylvanian injection well, the
5 Bridges State Well No. 147. The existing casing is
6 indicated along with the total depth and the plug-back
7 depth. This sketch shows the location of the proposed
8 packers necessary to separate the Abo and Middle
9 Pennsylvanian formation in the well bore. Those packers
10 will be set within fifty feet of the top and bottom
11 perforations.

12 The proposed injection tubing is shown, and special
13 nine percent chrome one percent molybdenum corrosion-resistant
14 tubing will be used in the lower string between the two
15 Abo packers. The annulus will be filled with treated
16 fresh water, and a pressure release valve and gauge will
17 be installed on the casing at the surface.

18 MR. STAMETS: Let me ask at this point about this
19 pressure release valve. What kind of pressures are you
20 talking about?

21 THE WITNESS: It is my understanding that it will
22 be set-- It will be on the annulus-- I will have to check
23 on that, Mr. Examiner. I presume it will be set below
24 the capability of the surface casing, but I don't know
25 what it would bleed back into.

1 MR. STAMETS: You will furnish us with that
2 information after the hearing?

3 THE WITNESS: Yes.

4 Q (By Mr. Sperling) Had you completed your explanation of
5 Exhibit Five, the well bore sketch?

6 A I believe so, with the exception of the unanswered question.

7 Q Would you identify what has been marked as Exhibit Number
8 Six, please?

9 A Exhibit Six is a log of the proposed injection well, the
10 Bridges State Well No. 147. The Middle Pennsylvanian
11 pay is found at 10,439 feet, or 6400 feet sub-C. The
12 top of the pay formation is marked in red as well as the
13 proposed perforations in the Middle Pennsylvanian P.

14 Q Now, have you prepared an exhibit, Mr. Seerey, which
15 indicates the production history of the project area and
16 the Vacuum-Middle Pennsylvanian Pool?

17 A Yes. The accumulative oil and gas production from the
18 Vacuum-Middle Pennsylvanian Pool in the project area as
19 of September 1st, 1973 was 209,000 barrels of oil and
20 352,300 MCF of gas. The current oil production rate is
21 96 barrels of oil per day with a gas-oil ratio of 1741
22 cubic feet per day. Water production is less than one
23 percent of the total produced fluids.

24 Exhibit Number Seven is a tabular production history
25 of the Vacuum-Middle Pennsylvanian wells in the project

1 area.

2 Exhibit Number Eight is a graphic description of
3 the same production history.

4 Exhibit Number Nine is a summary of the well tests
5 and accumulative production for the wells in the project
6 area.

7 Q What is the total estimated primary recovery and fluid
8 injection recovery for the project area?

9 A The total estimated primary and fluid is 410,000 barrels
10 of oil, assuming that the present wells in the project
11 area would produce approximately 275,000 barrels or ten
12 percent of the oil in place. This indicates that the
13 proposed pressure maintenance project should increase the
14 ultimate recovery by 135,000 barrels of oil.

15 Q Now, for the record, Mr. Seerey, would you please summarize
16 what Mobil is seeking by this application?

17 A Mobil Oil Corporation respectfully requests authorization
18 to inject water or water and gas into the Vacuum-Middle
19 Pennsylvanian formation through the Bridges State Well
20 No. 147 as a pressure maintenance project. Said project
21 is to consist of the west half of Section 13, Township
22 17 South, Range 34 East, Lea County, New Mexico.

23 Secondly, Mobil further requests an administrative
24 procedure whereby the project area may be expanded and
25 additional injection and producing wells may be approved

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1 at later dates without hearings.

2 Q I believe the application was filed requesting the
3 establishment of administrative procedure under which the
4 project area could be expanded and additional injection
5 or production wells drilled or converted at both orthodox
6 and unorthodox locations. Do I understand from your
7 testimony just now given that to the extent that the
8 original application included a request for the
9 establishment of producing or injection wells at orthodox
10 or unorthodox locations, that the application is hereby
11 amended?

12 A Yes. I believe we would wish to amend the application to
13 delete the wording "orthodox or unorthodox locations",
14 and just proceed on the basis of additional injection or
15 producing wells.

16 Q I understand that presently the Middle-Vacuum Pennsylvanian
17 Pool is not subject to special rules, and is under
18 state-wide rules on the 40-acre basis?

19 A That's correct.

20 Q And that is satisfactory as far as Mobil is concerned
21 for the expansion of the project area?

22 A We believe it is.

23 Q In your opinion, Mr. Seerey, will the granting of this
24 application as amended result in the prevention of
25 waste and be in the best interest of conservation and

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1 at the same time protect the correlative rights of all
 2 having interests in the pool?
 3 A I believe that the approval of the proposed pressure
 4 maintenance project would be in the interest of
 5 conservation and should result in greater ultimate recovery,
 6 thereby preventing waste. I do not believe that the
 7 correlative rights of others will be violated in any manner
 8 by the approval of this request.

9 MR. SPERLING: At this time, Mr. Examiner, we would
 10 offer Exhibits One through Nine.

11 MR. STAMETS: Without objection, Applicant's Exhibits
 12 One through Nine will be admitted into evidence.

13 (Whereupon Applicant's Exhibits One through Nine
 14 were admitted in evidence.)

* * * *

CROSS EXAMINATION

17 BY MR. STAMETS:

18 Q At the present time, Mobil is the only producer in the
 19 field, is that correct?

20 A That's correct, sir.

21 Q Do you know what the situation is with the Texaco well
 22 in the southeast quarter of Section 13?

23 A I checked with the District Office, and it is my
 24 understanding that a cast iron bridge plug has been set
 25 above the Middle Pennsylvanian with approximately twenty

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1 feet of cement on the top of the cast iron plug.

2 Q I note from your production history, Exhibits Seven and
3 Eight, that there was a long decline in production, about
4 three years, and then the oil production has gone back up.
5 What is the situation there?

6 A The change in trend is the changing from a decline to an
7 increase in September of 1970. I believe it was at the
8 time of the drilling of the wells, and I believe that
9 indicates the wells beginning to produce.

10 Q Will the gauge you propose to install and the pressure
11 release job serve as a leak detection device on the well?

12 A Yes, sir.

13 Q And you do have field personnel who will be inspecting
14 this well on a regular basis?

15 A Yes.

16 Q Will you have a procedure which will allow the reporting
17 of any leak in this well or any of the offset producing
18 wells to the supervisor of the Hobbs District Office?

19 A Yes, we will.

20 Q The proposed injection well, the Bridges State Well No.
21 147, is it currently approved as a multiple completion?

22 A It is presently approved as a multiple completion in the
23 Abo and Middle Pennsylvanian.

24 Q So the only change here is it would now be an injection
25 well instead of producing from the Middle Pennsylvanian?

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1 A That's correct, sir.

2 MR. STAMETS: Are there any other questions of the

3 witness?

4 (No response)

5 MR. STAMETS: He may be excused.

6 (Witness excused.)

7 MR. STAMETS: Is there anything further in this case?

8 MR. SPERLING: I have nothing further.

9 MR. STAMETS: Case 5116 will be taken under

10 advisement.

* * * *

C E R T I F I C A T E

13 I, RICHARD E. McCORMICK, Certified Shorthand

14 Reporter, in and for the County of Bernalillo, State of New

15 Mexico, do hereby certify that the foregoing and attached

16 Transcript of Hearing before the New Mexico Oil Conservation

17 Commission was reported by me; and that the same is a true

18 and correct record of the said proceedings to the best of

19 my knowledge, skill and ability.

21 
 22 CERTIFIED SHORTHAND REPORTER

24 I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Examiner hearing of Case No. 5116,
 heard by me on Nov 28, 1973.

25 
 Examiner
 New Mexico Oil Conservation Commission

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JOHN SEEREY

Direct Examination by Mr. Sperling

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Cross Examination by Mr. Stamets

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E X H I B I T SEXHIBITADMITTEDOFFERED

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