

Case No.

477

Application, Transcript,  
Small Exhibits, Etc.

CASE 477: Shell dual completion State N-#1;  
NESE 24-215-35E (Eunice-Monument Pool); oil  
from Seven Rivers-Queen, gas from Yates)

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 477  
ORDER No. R-268

THE APPLICATION OF SHELL OIL  
COMPANY FOR AN ORDER GRANTING  
PERMISSION TO DUALY COMPLETE  
AND PRODUCE ITS SHELL STATE N,  
WELL NO. 1, LOCATED IN THE NE/4  
SE/4 OF SECTION 24, TOWNSHIP 21  
SOUTH, RANGE 35 EAST, NMPM, LEA  
COUNTY, NEW MEXICO, IN THE EUNICE-  
MONUMENT POOL.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on February 17, 1953, at Santa Fe, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 27<sup>th</sup> day of February, 1953, the Commission, a quorum being present, having considered the records and the testimony adduced, and being fully advised in the premises,

FINDS:

(1) That due notice having been given as required by law, the Commission has jurisdiction of the case and the persons and subject matter thereof.

(2) That applicant's Shell State N, Well No. 1, NE/4 SE/4 Section 24, Township 21 South, Range 35 East, NMPM, Lea County, New Mexico, was completed in October, 1938 as an oil well producing from the Seven Rivers-Queen formation in the open-hole interval 3806-3946, having drilled through the Yates gas zone at an approximate depth of 3450-3700 feet.

(3) That although recent experiments tend to show that mechanical packers and other devices are ordinarily available for successful dual/multiple completions of oil - gas wells, the Commission is unconvinced of the soundness as a waste-prevention practice, of such dual/multiple completions as a general practice in New Mexico without specific controls over each such project.

IT IS THEREFORE ORDERED: That the applicant herein, Shell Oil Company, be and it hereby is authorized to dually complete and produce its Shell State N, Well No. 1, NE/4 SE/4, Section 24, Township 21 South, Range 35 East, NMPM, Lea County, New Mexico, in such a manner that gas from the Yates formation may be produced through the annular space between the casing and the tubing and oil from the Seven Rivers-Queen formation through the tubing by proper perforations and the installation of a proper packer or packers;

PROVIDED, HOWEVER, That subject well shall be completed, and thereafter produced, in such a manner that there will be no commingling within the well bore, either within or outside the casing of gas, oil and gas, or oil produced from either or both of the separate strata, and,

PROVIDED FURTHER, That said subject well for dual completion and production shall be equipped in such a way that reservoir pressures may be determined separately for each of the two specified strata, and further, be equipped with all necessary connections required to permit recording meters to be installed and used, at any time, as may be required by the Commission or its representatives, in order that natural gas, oil, or oil and gas from each separate stratum may be accurately measured and the gas-oil ratio thereof determined, and,

PROVIDED FURTHER, That the operator applicant shall make any and all tests, including segregation tests, but not excluding other tests and/or determinations at any convenient time and in such manner as deemed necessary by the Commission; the original and all subsequent tests shall be witnessed by representatives of the Commission and by representatives of offset operators, if any there be, at their election, and the results of each test properly attested to by the applicant herein and all witnesses, and shall be filed with the Commission within ten (10) days after the completion of such test, and,

PROVIDED FURTHER, That upon the actual dual completion of such subject well, applicant shall submit to the Commission a diagrammatic sketch of the mechanical installation which was actually used to complete and produce the seal between the strata, and a special report of production, gas/oil ratio and reservoir pressure determination of each producing zone or stratum immediately following completion.

PROVIDED FURTHER, That upon the actual dual completion of such subject well applicant shall submit to the District Office of the Commission in which the subject well is located Form C-103, Form C-104 and C-110 outlining the information required on these forms by existing Rules and Regulations.

IT IS FURTHER ORDERED: That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after proper notice and hearing, the Commission may terminate the authority hereby granted and require applicant or its successors and assigns to limit its activities to regular single-zone production in the interests of conservation.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*E. L. Mechem*

EDWIN L. MECHEM, Chairman

*E. S. Walker*  
E. S. WALKER, Member

*R. R. Spurrer*  
R. R. SPURRIER, Secretary

S E A L

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

TRANSCRIPT OF HEARING  
CASES 477, 478, 479, 480, 481, 482, 483,  
484, 485 and 486,  
CONSOLIDATED  
February 17, 1953

E. E. GREESON  
ADA DEARNLEY  
COURT REPORTERS  
BOX 1302  
PHONES 5-9422 AND 5-9546  
ALBUQUERQUE, NEW MEXICO

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

February 17, 1953

In the Matter of:

Shell State N-1, NE SE 24-21S-35E, Eunice  
Monument Pool; oil from Seven Rivers-  
Queen formation, gas from Yates.

No. 477

Shell State C-1, NE NE 24-21S-35E, Eunice-  
Monument Pool; oil from Seven Rivers-  
Queen formation, gas from Yates.

No. 478

Shell-Devonian State No. 1, SW NE 20-21S-  
36E, Eunice-Monument Pool; oil from Queen-  
Grayburg formation, gas from Yates.

No. 479

Shell State H-4, NE SE 13-21S-35E, Eunice  
Monument Pool; oil from Seven Rivers-Queen  
formation, gas from Yates.

No. 480

Shell State B-1, SW NW 36-19S-36E, Eunice-  
Monument Pool; oil from Grayburg formation,  
gas from Seven Rivers-Queen.

No. 481

Foster No. 1, SE SE 34-19S-36E, Eunice-  
Monument Pool; oil from Grayburg formation,  
gas from Seven Rivers-Queen.

No. 482

Shell State D-1, NW SE 19-19S-37E (Eunice-  
Monument Pool); oil from Grayburg formation,  
gas from Seven Rivers-Queen.

No. 483

Shell State H-1, NE SE 20-19S-37E, Eunice-  
Monument Pool; oil from Grayburg formation,  
gas from Seven Rivers-Queen.

No. 484

Livingston No. 2, SW SE 3-21S-37E, Drinkard  
Pool; oil from Drinkard formation, gas from  
Tubb.

No. 485

Sarkeys No. 1, SW SW 23-21S-37E, Drinkard  
Pool; oil from Drinkard formation, gas  
from Tubb.

No. 486

ADA DEARNLEY & ASSOCIATES  
COURT REPORTERS  
ROOM 103-106, EL CORTEZ BLDG.  
PHONES 7-9645 AND 5-9546  
ALBUQUERQUE, NEW MEXICO

TRANSCRIPT OF HEARING

(MR. GRAHAM reads the Notices of Publication in each case.)

MR. SETH: If the Commission please, these are ten applications in cases 477, 478, 479, 480, 481, 482, 483, 484, 485, and 486, and we would like to have this consolidated for the purpose of this hearing, to present matters of general application which are common to all cases and followed by specific reference to each case. The consolidation will be just for the purpose of the hearing.

W. A. S C O T T,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. SETH:

Q State your name, please.

A W. A. Scott.

Q By whom are you employed?

A Shell Oil Company.

Q. Have you previously testified before the Commission as an expert witness.

A Yes, sir, I have.

Q You are familiar with the applications in cases 477 to 486, inclusive?

A Yes, sir, I am.

Q Have you prepared a map showing the proposed locations?

A Yes.

(Marked Exhibit No. 1  
for identification.)

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ROOM 105-106, EL CORTEZ BLDG.  
PHONES 7-9645 AND 5-9546  
ALBUQUERQUE, NEW MEXICO

Q Were these applications made to be a competitive withdrawal of gas in the proposed locations?

A Yes, sir, they were.

Q Describe to the Commission the figures appearing on this map.

A This is a map of the Eunice Monument area in Lea County.

Q You are referring to Exhibit 1?

A Yes, sir, Exhibit 1. Referring to the legend, you will notice that the figures underlined in black by the gas wells represent the cumulative gas recovery as of January 1, 1953, for the gas wells in this area. The wells circled in red are Shell's proposed dual completion. The wells circled in green are nearby competitive gas wells.

Q As to the facts, common to all of these proposed cases, Mr. Scott, are all of the wells covered by the applications completed as oil wells?

A Yes, sir, they are.

Q Were they all drilled through a gas productive formation?

A Yes, sir, they were.

Q In each instance if the applications are granted, will the oil be produced through the tubing and the gas through the tubing casing annulus?

A Yes, sir.

Q You propose to use similar mechanical devices to effect the dual completion?

A Yes, sir.

Q Will you use similar completion methods in each of the

wells covered by the application?

A Yes, sir, we will.

Q Will you describe briefly the mechanical devices that are proposed to be used?

A Yes, sir, in brief and in summary, we propose to set a separation packer between the upper gas zone and the lower oil zone; perforate the gas zone, effect separation between the two zones by testing for communication. After that has been satisfactorily tested, we will then effect gas production to the tubing casing annulus, and oil through the tubing.

Q How will you determine the exact location of the perforations to be made.

A The exact intervals within the gas zones to be perforated will be selected from radio activity surveys which will be run on each well and copy of which we will furnish the Commission.

Q Referring to the Drinkard wells, have you previously run surveys of the Drinkard?

A Yes, sir, concerning the two Drinkard Tubb applications, electrical surveys have already been run in those wells at the time they were drilled, and the basis for the intervals of gas production there are those electrical surveys.

Q Copies of the surveys were furnished the Commission?

A They have been furnished the Commission with these applications.

Q On the radio active surveys, will you provide the Commission with copies of those?

A Yes, sir, we have provided for that and also made that statement in our application.

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Q Have you submitted to the Commission in each instance, a diagram of the mechanical devices and the completion methods?

A Yes, sir, we have submitted with our application a plat showing the proposed location in the surrounding leases. In those cases where electrical surveys have been run, we have submitted electrical surveys and we have also submitted diagrammatic sketches of the proposed mechanical installation.

Q In your opinion, will the proposed method of completion effect a separation of the oil and gas?

A Yes, sir. I might say that based on recent experience of dual completions approved by this Commission last year, in which we are in the process of dualing now, we have found that effective separation can be had.

Q Will the completion also enable the Commission to make such tests as it has heretofore indicated?

A Yes, sir, as noted on our diagrammatic sketches, we provide for mechanical installation so that all tests required by the Commission, and any additional tests that we might desire, can be made regarding both zones at any time.

Q Have you also submitted to the Commission the type log with each of the separate applications made?

A Yes, with regard to units in the Monument area, we have submitted a type log for the applications.

Q Do you have a map showing the proposed locations in the Drinkard?

A Yes, sir, I do.

(Marked Exhibit No. 2  
for identification.)

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Q Would you describe to the Commission the indications on this map?

A Yes, sir. Exhibit 2 purports to show the location of the two proposed wells in the Drinkard area, and they are circled in red. Circled in green are Tubb gas wells in the area and outlined in black are drillstem tests of the Tubb gas zone.

Q From your study, is there indicated commercial production in the Tubb zone surrounding these wells?

A Yes, sir, there is at the present time.

MR. SETH: We would like to offer Exhibits 1 and 2 in evidence.

MR. SPURRIER: Without objection they will be received.

Q Considering the cases separately, Mr. Scott, the cases 477 to 480, inclusive, these are in the Eunice area, are they not?

A Yes, sir.

Q The oil occurs in what productive zone?

A In the Eunice area the oil occurs in the Seven Rivers Queen formation and the non-associated Yates formation.

Q In the Monument area, cases 481 to 484?

A In that area, the oil is from the Grayburg, and non-associated gas from the Queen.

Q Four eighty-five to four eighty-six?

A Oil in the Drinkard formation and the gas is from the Tubb formation.

MR. SETH: If the Commission please, with each application is submitted a type log and map and sketch of the mechanical completion. We would like, if permissible, to have those included as part of the record in this case.

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MR. SPURRIER: Without objection they will be received

Q Is there anything further, Mr. Scott, in the general application that you would like to mention?

A No, sir, I believe not other than as I stated before, we have found, based on recent experience of dual completions in both areas, from cases previously granted before this Commission, that effective separation can be maintained and that all proper and required tests can be made.

Q Does the application in each case indicate the approximate productive area for gas?

A Yes, sir, it does. It provides for the approximate area in the Eunice-Monument well and the application states that upon the running of radio active surveys that the exact interval will be picked and from the radio active survey, and the copy of the survey will be furnished the Commission at that time.

Q Does the application in each case indicate the completed depth as an oil well?

A Yes, it does.

MR. SETH: I believe that is all.

MR. SPURRIER: Does anyone have a question of the witness?

By MR. GRAHAM:

Q Are you prepared, informed and prepared to observe the usual order of the Commission and all its rules and regulations?

A Yes, sir, we are.

By MR. MACEY:

Q I notice on your map of the Eunice-Monument, you show your proposed wells and you show the so-called competitor wells

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of your offsets or near offsets. Are there any of these wells of your own that are either Bradenhead gas wells or duals that are not shown on this map?

A Not that I know of, Mr. Macey. I will say this, I know that there are one or two recent completions that aren't on this map as a result of a last-minute check that I made. I am aware of that. However, they are not Shell wells. To my knowledge, at this time, there are no Shell wells that are not on this map, no sir.

Q In other words, you haven't dually completed any wells in Eunice-Monument, even though you had orders?

A We are in the process of doing that. The reason they are not shown is the wells have not been finalized, no gas has been sold from them. We are in the process of making final tests on those wells now. We have received approval from the Commission for eight dual completions in the Eunice-Monument area and we are in the process at this time of dually completing those wells. We have started operations on six of them and two of them are yet to be initiated.

MR. SETH: If the Commission please, the company would be glad to submit a schedule showing a state of completion in each of those instances, if it would be of some help.

MR. MACEY: Maybe we could simplify it by having Mr. Scott answer as to whether or not he knows of any duals in the same 160-acre units that are being conducted by Shell. Is there any case where you will have two wells on a 160-acre tract?

A No, sir. I do want to say this. In our initiation of

these operations, if we should find for some reason that it would be more feasible to switch to another well on the 160-acre unit, at that time we would come before the Commission, but we plan at this time in this area only one well on each of the tracts that comprise 160 acres.

MR. MACEY: You have some leases here <sup>that</sup> are only 40's or 80's?

A Yes, sir, we do. We have one - our state N-1, that is applied for in case 477, is on 40-acre tract. Our state D-1 up in the north, which is case 483, is on an 80-acre tract, and our state H-1, which is case 484, is on a 40-acre tract. The rest of them are on tracts which comprise the 160 acres.

MR. MACEY: In the event of proration on 160 acres basis on the 40-acre units, you would be in all probability, be cut down to a fourth of an allowable for the unit?

A Yes, sir, that is right. We would also probably first attempt to unitize our 40 acres with the surrounding 120 acres; failing in that, naturally in compliance with the regulations of the Commission, we would accept a fractional allowable assignment to the well.

MR. SPURRIER: Anyone else have a question? If not, the witness may be excused. Any other comment in this case? If not, the cases will be taken under advisement and we will move to 487.

STATE OF NEW MEXICO     )  
COUNTY OF BERNALILLO    ) ss.

I HEREBY CERTIFY that the foregoing and attached transcript of hearing in cases No's. 477 to 486, inclusive, before the Oil Conservation Commission, State of New Mexico, at Santa Fe, on February 17, 1953, is a true and correct record of the same to the best of my knowledge, skill and ability.

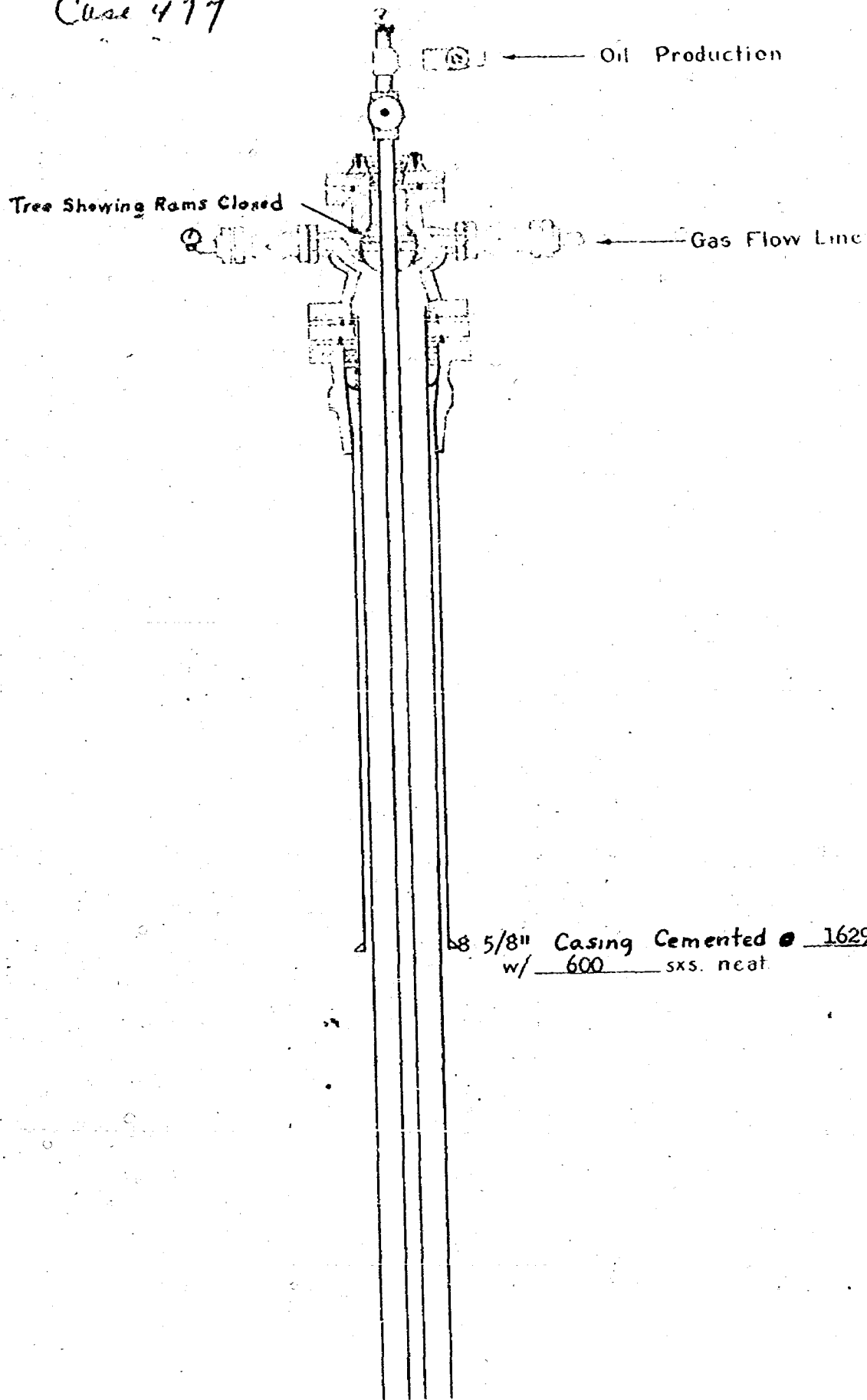
DATED at Albuquerque, New Mexico this 25th day of February, 1953.

  
REPORTER

ADA DEARNLEY & ASSOCIATES  
COURT REPORTERS  
ROOM 105-106, EL CORTEZ BLDG.  
PHONES 7-9645 AND 5-9546  
ALBUQUERQUE, NEW MEXICO

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Case 477





Casing Jet Perforated  
w/ 4-21 gram shots / foot  
Approx. From 3450' to 3700'

Baker Model "D" Retainer  
Production Packer  
Set @ 3780'

Camco Type MM Retrievable Valve Mandrel,  
Blanked Off, @ 3760'

5 1/2" casing Cemented @ 3806' w/ 100 sxs neat

Tubing Perforations

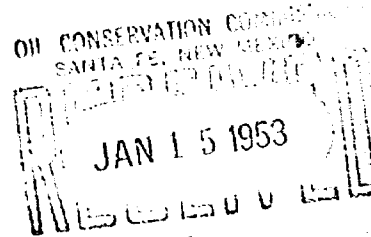
TD 3946'

Detail of Mechanical Equipment to be  
Installed in Dually Completed Eunice  
and Monument Wells for Submission to  
Oil Conservation Commission

Exhibit C - To Accompany Application to Dually Complete Shell State N-1, Eunice Field



SHELL OIL COMPANY



THIS LETTER IS FROM OUR  
FIELD OFFICE

AT Box 1957  
Hobbs, New Mexico

Case 477

January 9, 1953

Subject: Application to Dually Complete  
Shell State N-1, Eunice Field  
Lea County, New Mexico as a Yates  
(Gas) - Seven Rivers-Queen (Oil)  
Well

Oil Conservation Commission  
State of New Mexico  
Santa Fe, New Mexico

Gentlemen:

By means of this application the Shell Oil Company wishes to state the following:

a) That Shell State N-1, located in the NE/4 of the SE/4 of Section 24, T-21-S, R-35-E, was completed in October, 1938 at a total depth of 3946 feet. The appended Exhibit A shows the location of this well together with the locations of all offset wells.

b) That the said well was completed as an oil well producing from the interval 3806 -3946 feet in the Seven Rivers-Queen formation after having been drilled through the Yates gas productive interval extending from approximately 3450 feet to 3700 feet. The appended Exhibit B is a type log of the Eunice-Mohument area. It is planned to run a radioactive survey of Shell State N-1 during the dual completion operation and a copy of the log will be filed with the Commission.

c) That the applicant proposes to (1) perforate the 5 1/2-inch casing opposite the Yates gas-productive horizons and (2) set a Baker retainer production packer at approximately 3780 feet in the 5 1/2-inch casing. The exact interval(s) to be perforated will be selected after the above mentioned radioactive survey has been completed.

d) That the applicant proposes to dually complete the said well to produce oil from the Seven Rivers-Queen formation through the tubing and gas from the Yates formation through the 5 1/2-inch casing. The manner and method of the proposed dual completion are shown on Exhibit C.

e) That the granting of this application for permission to produce dually oil from the Seven Rivers-Queen formation and gas from the Yates formation is in the interests of conservation and the protection of correlative rights.

Oil Conservation Commission

- 2 -

January 9, 1953

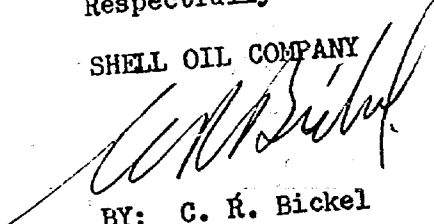
f) That the applicant will do such things as may be required of it by the New Mexico Oil Conservation Commission in the maintenance of separation of production from said two horizons.

g) That the manner and method of the proposed dual completion is mechanically feasible and practical.

Therefore, the Shell Oil Company requests that the Oil Conservation Commission set a certain day upon which this application may be heard and after said hearing to grant permission in order that the applicant may dually complete Shell State N-1 so that oil from the Seven-Rivers -Queen formation may be produced through the tubing and gas from the Yates formation through the casing.

Respectfully submitted,

SHELL OIL COMPANY

  
BY: C. R. Bickel

JDS:BD

Attachments (3)