

ASE 3410: Application of PENNZOIL  
for the creation of a new pool and  
for special pool rules, Lea County.

ASE No.

3410

Application,

Transcripts,

All Exhibits

ETC.

**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. 3410  
Order No. R-3084  
NOMENCLATURE**

**APPLICATION OF PENNZOIL COMPANY  
FOR THE CREATION OF A NEW POOL  
AND FOR SPECIAL POOL RULES, LEA  
COUNTY, NEW MEXICO.**

**ORDER OF THE COMMISSION**

**BY THE COMMISSION:**

This cause came on for hearing at 9 a.m. on June 8, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Ute.

NOW, on this 30th day of June, 1966, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

**FINDS:**

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

(2) That the applicant, Pennzoil Company, seeks the creation of a new oil pool for Morrow production in Lea County, New Mexico, including a provision for 80-acre spacing units and a limiting gas-oil ratio of 12,000 to 1.

(3) That the Pennzoil Company Bridgman-State Well No. 1, located in Unit A of Section 11, Township 17 South, Range 34 East, NMM, Lea County, New Mexico, has discovered a separate common source of supply which should be designated the North Vacuum-Morrow Pool; that the vertical limits of said pool should be the Morrow zone of the Pennsylvanian formation in the interval from 11,745 feet to 12,152 feet on the log of said

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CASE No. 3410  
Order No. R-3084

Pennzoil Company Bridges-State Well No. 1; and that the horizontal limits of said pool should be the N/2 NE/4 of Section 11, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(4) That the applicant has established that one well in the North Vacuum-Morrow Pool can efficiently and economically drain and develop 80 acres.

(5) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, special rules and regulations providing for 80-acre spacing units should be promulgated for the North Vacuum-Morrow Pool.

(6) That the special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(7) That the special rules and regulations should provide for a limiting gas-oil ratio of 12,000 to 1 in order to allow each operator in the pool the opportunity to use his just and equitable share of the reservoir energy.

(8) That the top of the perforations in the Morrow zone of the Pennsylvanian formation in the Pennzoil Company Bridges-State Well No. 1 is at 11,960 feet; that the special rules and regulations should therefore provide for an 80-acre proportional factor of 6.67 for allowable purposes.

(9) That in order to prevent undue dissipation of the reservoir energy and waste of oil and gas, the special rules and regulations should prohibit the flaring or venting of gas within a reasonable time after the issuance of this order.

IT IS THEREFORE ORDERED:

(1) That a new pool in Lea County, New Mexico, classified as an oil pool for Morrow production, is hereby created and designated the North Vacuum-Morrow Pool, with vertical limits comprising the Morrow zone of the Pennsylvanian formation in the interval from 11,745 feet to 12,152 feet on the log of the

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CASE No. 3410  
Order No. R-3084

Pennzoil Company Bridges-State Well No. 1, located in Unit A of Section 11, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico, and horizontal limits comprising the N/2 NE/4 of Section 11, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(2) That Special Rules and Regulations for the North Vacuum-Morrow Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS  
FOR THE  
NORTH VACUUM-MORROW POOL

RULE 1. Each well completed or recompleted in the North Vacuum-Morrow Pool or in the Morrow zone of the Pennsylvanian formation within one mile thereof, and not nearer to or within the limits of another designated Morrow oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a governmental quarter-quarter section or lot or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located within 150 feet of the center of either quarter-quarter section in the 80-acre unit.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned an 80-acre proportional factor of 6.67 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 80 acres.

RULE 7. The limiting gas-oil ratio shall be 12,000 cubic feet of gas for each barrel of oil produced.

RULE 8. No gas shall be flared or vented on or after July 15, 1966; provided, however, that any well completed in the subject pool after July 15, 1966, shall be given 30 days in which to make beneficial use of the produced casinghead gas.

RULE 9. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 8 without notice and hearing when an application has been filed setting forth the facts and circumstances justifying the exception and he determines such action is necessary to prevent waste or protect correlative rights.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the North Vacuum-Morrow pool or in the Morrow zone of the Pennsylvania formation within one mile thereof

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CASE No. 3410

Order No. R-3094

are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before July 15, 1966.

(2) That each well presently drilling to or completed in the North Vacuum-Morrow Pool or in the Morrow zone of the Pennsylvanian formation within one mile thereof shall receive a 40-acre allowable until a Form C-102 dedicating 80 acres to the well has been filed with the Commission.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

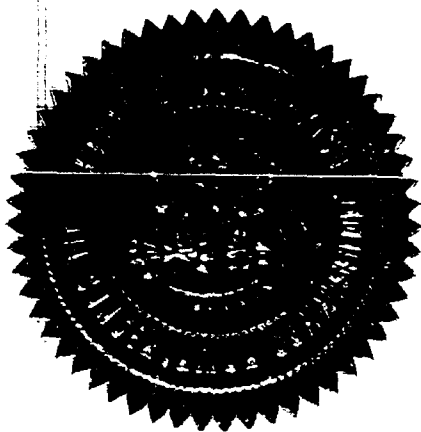
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
JACK M. CAMPBELL, Chairman

  
GUYTON B. HAYS, Member

  
A. L. PORTER, Jr., Member & Secretary



RHODES AND McCALLISTER  
ATTORNEYS AT LAW

JERRY P. RHODES  
ORVILLE C. McCALLISTER, JR.

619 SIMMS BUILDING  
ALBUQUERQUE, NEW MEXICO 87101  
TELEPHONE 243-9746

May 13, 1966

*EOA 3410*

MAIN OFFICE 000

'66 MAY 16 AM 8 26

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.  
Secretary Director

Gentlemen:

I am enclosing an original and two copies of an Application on behalf of Pennzoil Company. Would you please docket this Application for your next scheduled examiner hearing. As this case involves a state lease, I am forwarding a copy of the Application to the State Land Office. I also am forwarding a copy of the Application to your Hobbs district office.

Very truly yours,

Rhodes, McCallister & Durrett

By *J. M. Durrett, Jr.*  
J. M. Durrett, Jr.

JMD:ab  
encls.

cc: State Land Office  
Oil & Gas Division  
Attention: Mr. Ted Bilberry  
Box 1148  
Santa Fe, New Mexico

Oil Conservation Commission  
Attention: Joe D. Ramey, Supervisor

DOCKET MAILED

Date 5-25-66  
*W*



BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

Application of

PENNZOIL COMPANY

for Creation of a New Pool and  
Promulgation of Special Pool Rules

Case No. 3410

APPLICATION

COUNT ONE

COMES NOW the applicant, Pennzoil Company, by  
and through its attorneys, Rhodes, McCallister & Durrett, and  
respectfully states:

I.

The applicant is the owner and operator of the  
Bridges-State Well No. 1 located in Unit A, 660 feet from the  
north line and 660 feet from the east line of Section 11, Township  
17 South, Range 34 East, NM-1-M, Lea County, New Mexico.

II.

The subject well was drilled to the Devonian For-  
mation but was non-productive in said formation and was subse-  
quently plugged back and completed in the Atoka Zone of the  
Morrow Formation with the top of the perforations in the Morrow  
Formation at approximately 11,960 feet.

III.

The subject well has discovered a new separate  
common source of supply which should be designated an Atoka  
Oil Pool.

RHODES AND  
MCCALLISTER  
ATTORNEYS AT LAW  
619 SIMMS BUILDING  
ALBUQUERQUE,  
NEW MEXICO 87101

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IV.

The subject well is presently the only well completed in the subject pool.

V.

One well in the subject pool can efficiently and economically drain and develop 80 acres.

VI.

The subject pool can be efficiently and economically drained and developed with a limiting gas-oil ratio of 12,000 to one.

VII.

Well locations no nearer than 330 feet to a quarter quarter section line will adequately protect correlative rights in the subject pool.

WHEREFORE, the applicant requests the Commission to enter its order creating a new oil pool for Atoka production and promulgating special rules and regulations governing said pool establishing therein 80-acre spacing and proration units and a limiting gas-oil ratio of 12,000 to one.

COUNT TWO

In the alternative, applicant states:

I.

The subject well should be classified as a gas well and a new Morrow gas pool should be created.

WHEREFORE, the applicant requests the Commission to enter its order classifying the subject well as a gas well and creating a new Morrow gas pool.

Rhodes, McCallister & Durrett

By

J. M. Durrett, Jr.

GOVERNOR  
JACK M. CAMPBELL  
CHAIRMAN

State of New Mexico  
**Oil Conservation Commission**



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

P. O. BOX 2088  
SANTA FE

June 30, 1966

Mr. James M. Durrett, Jr.  
Rhodes, McCallister & Durrett  
Attorneys at Law  
619 Simms Building  
Albuquerque, New Mexico

Re: Case No. 3410  
Order No. R-3084  
Applicant:

PENNZOIL COMPANY

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

*A. L. Porter, Jr.*  
A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x  
Artesia OCC         
Aztec OCC       

Other Mr. John Hoover

CLASS OF SERVICE  
This is a fast message  
unless its deferred char-  
acter is indicated by the  
proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

SYMBOLS  
DL = Day Letter  
NL = Night Letter  
LT = International  
Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination.

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NEW MEXICO OIL CONSERVATION COMMISSION=  
SANTAFE NMEX=

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ATTN MR DANIEL S NUTTER; RE CASE #3-10 PENNZOIL NEW  
POOL AND SPECIAL RULES LEA COUNTY NEW MEXICO. MOBIL  
OIL CORPORATION IS THE OWNER OF SUBSTANTIAL ACREAGE IN  
THE AREA OF PENNZOIL OIL COMPANY'S BRIDGES-STATE WELL  
#1 IN UNIT A SECTION 11 TOWNSHIP 17 SOUTH RANGE 34  
EAST LEA COUNTY, NEW MEXICO. IT IS MOBIL'S POSITION  
THAT CONDITIONS IN THE FIELD ARE NOW PREMATURE FOR THE

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

**CLASS OF SERVICE**

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

1201 (4-00)

**SYMBOLS**

DL = Day Letter

NL = Night Letter

LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

ADOPTION OF OIL FIELD RULES. BUT IF THE COMMISSION IS  
OF A MIND TO ADOPT SUCH RULES MOBIL RECOMMENDS OIL  
UNITS NO SMALLER THAN 160 ACRES. MOBIL AT THIS TIME  
FAVORS CLASSIFICATION OF PRODUCTION FROM THIS POOL AS  
GAS=

IRA B STITT JR DIVISION OPERATIONS ENGINEER MOBIL  
OIL CORPORATION==

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Docket No. 14-66

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 8, 1966

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 3410: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Morrow production for its Bridges-State Well No. 1 in Unit A of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special pool rules therefor including a provision for 80-acre spacing and a limiting gas-oil ratio of 12,000 to one. In the alternative, applicant requests that the subject well be classified as a gas well and a new Morrow gas pool be created.
- CASE 3411: Application of SEC Operating for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Yates formation through one well in Unit A of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico. Applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells in Sections 11, 13, 14 and 15, Township 20 South, Range 33 East, under cooperative offset operating agreements.
- CASE 3412: Application of SEC Operating for an exception to Commission Order No. R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order No. R-111-A. Applicant proposes to drill and complete a well in Unit D of Section 14, Township 20 South, Range 33 East, Teas Pool, Lea County, New Mexico, with surface casing set at approximately 950 feet, cement circulated, and production casing set at approximately 3400 feet and cemented to approximately 2500 feet above the casing point. The well would be plugged and abandoned in accordance with the provisions of Order No. R-111-A.
- CASE 3261 (Reopened):
- In the matter of Case No. 3261 being reopened at the request of Amerada Petroleum Corporation to consider the amendemnt of the special rules for the Jenkins-Cisco Pool, Lea County, New Mexico, to provide for 160-acre oil proration units. Applicant also seeks the extension of said pool to include certain lands in Township 9 South, Ranges 34 and 35 East. The present temporary special rules promulgated by Order No. R-2931 in Case 3261 provide for 80-acre proration units, and are subject to reconsideration in July, 1966.

JUNE 8, 1966, EXAMINER HEARING

CASE 3413: Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Permo-Pennsylvanian zone through three injection wells located in Section 3, Township 15 South, Range 33 East, Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico.

CASE 3414: Application of Phillips Petroleum Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the lower San Andres formation, below the oil-water contact, in the following wells, Vacuum Field, Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 34 EAST  
Phillips Hale No. 11, Unit K Section 35

TOWNSHIP 17 SOUTH, RANGE 35 EAST  
Phillips Santa Fe No. 97, Unit N Section 33  
Phillips Santa Fe No. 86, Unit C Section 26  
Phillips Santa Fe No. 58, Unit G Section 35

Applicant further seeks establishment of an administrative procedure whereby additional wells could be placed on salt water disposal below the oil-water contact in the San Andres formation of the Vacuum Field.

CASE 3415: Application of Sun Oil Company for a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 790-acre non-standard gas proration unit comprising all of Section 5 and 150 acres in the eastern portion of Section 6, Township 22 South, Range 23 East, Indian Basin-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico. Said unit would be dedicated to applicant's Bogle Flats Unit Well No. 8 located in Unit G of said Section 5. Although applicant has drilled a non-commercial well in the NE/4 of said Section 6, it contends that there are approximately 150 acres in said Section 6 which are underlain by the Indian Basin-Upper Pennsylvanian Gas Pool.

CASE 3416: Application of Signal Oil & Gas Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "AP" Well No. 1 located in Unit I of Section 17, Township 10 South, Range 34 East, Simanola-Pennsylvanian Pool, Lea County, New Mexico, in such a manner as to produce oil from the Pennsylvanian formation through perforations from 9962 feet to 9966 feet and to dispose of produced salt water into the San Andres and Glorieta formations through the annulus between the 8 5/8 inch and the 5 1/2 inch casing in the interval from 4100 feet to 9260 feet.

CASE 2844 (Reopened):

In the matter of Case No. 2844 being reopened pursuant to the provisions of Order No. R-2627, which order established temporary 320-acre gas proration units for the Teas-Pennsylvanian Gas Pool, Lea County, New Mexico, for a period of one year from the date of first pipeline connection. The Commission will consider indefinite extension of Order R-2627 in the absence of evidence to the contrary.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
June 8, 1966

EXAMINER    HEARING

IN THE MATTER OF:

Application of Pennzoil Company for  
the creation of a new pool and for  
special pool rules, Lea County,  
New Mexico.

Case No. 3410

BEFORE:    Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING



## NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOREGISTERHEARING DATE JUNE 8, 1966TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Jason Kellachin	Kellachin & Fox	Santa Fe
John Swendeg	Amerada Pet. Corp.	Hobbs
JM Stewart Jr	Rhodes, McWhorter & Associates	Albuquerque
Kenneth R. Hudalletta	Pennzoil	Midland
Hal C. Potts	Cumia Capital, Inc.	Artesia, NM
John H. Hoover	Gulf Oil Corp.	Corral N.M.
Richard S. Morris	Petroleum Engineering, Federal Petroleum	Santa Fe
C. W. Myers	Amerada Petroleum Corp.	Salt Lake, N.M.
Mullins	PW Lejans	Albuquerque
D. W. Stewart	Amerada	Hobbs, N.M.
Ernest E. Staley	State Energy	Albuquerque
RL Hoche	Amerada Petroleum Corp.	Tulsa, Okla.
Donna Lee Garrison	Amerada Petroleum Corp.	Tulsa, Okla.
P. J. Mueller	Phillips Petroleum Co.	Albuquerque, N.M.
W. T. Wessinger	Seaway Oil & Gas Co.	Albuquerque, N.M.

MR. UTZ: The next case is 3410.

MR. HATCH: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico.

MR. DURRETT: If the Examiner please, J. M. Durrett, Junior of the firm of Rhodes, McAllister and Durrett, appearing for the applicant. I will have one witness, Mr. Kenneth R. Huddleston.

MR. UTZ: Will you stand and be sworn, please?

(Witness sworn.)

MR. UTZ: Are there other appearances in this case?

MR. HOOVER: John Hoover with Gulf. We have a statement we would like to make.

MR. UTZ: You may proceed.

KENNETH R. HUDDLESTON

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

DIRECT EXAMINATION

BY MR. DURRETT:

Q Will you please state your name and position for the record?

A I am Kenneth R. Huddleston, engineer for Pennzoil in Midland, Texas.

Q And you are a petroleum engineer, Mr. Huddleston?

A That's right.

Q Have you testified before this Commission as an expert witness before?

A Yes.

MR. DURRETT: Are the witness's qualifications acceptable to the Examiner?

MR. UTZ: Yes, sir. I believe he's qualified previously.

Q (By Mr. Durrett) Mr. Huddleston, will you please briefly state to the Commission what Pennzoil Company is seeking in this case?

A Well, briefly, what we're asking for is that this well be classified as an oil well with a GOR limit of 12,000 to one. This well was originally drilled as a Devonian test, and in the process of drilling, why we tested a zone in the Morrow, and at the time that we took the drillstem test, why it was rather inconclusive because of the fact that we had more bottomhole pressure than we had hydrostatic fluid in the oil, so we did not properly test the zone; and at that time we thought that possibly the reservoir was gas, but when we came back and completed it, why then additional data indicated that it probably was oil with real high ratio.

Q Mr. Huddleston, is Pennzoil Company, in this case, seeking first to have special pool rules promulgated by the

Commission providing for 80-acre spacing and a gas-oil ratio of 12,000 to one; and then in the alternative if the Commission would not see fit to do that, for the creation of a gas pool, is that correct?

A That is correct.

Q Do you have a plat of this area, Mr. Huddleston?

A Yes.

(Whereupon, Pennzoil's  
Exhibit No. 1 was marked  
for identification.)

Q Has that been marked as Exhibit No. 1?

A This is marked as Exhibit 1.

Q Would you please briefly state to the Examiner just what that shows?

A Well, this is a plat of a portion of Township 17 South, Range 34 East, and in particular, covering Section 11. It shows an 80-acre tract in the North Half of the Northeast Quarter which belongs to Pennzoil, and we drilled a well 660 out of the north and east, as I previously stated, which was a Devonian test, which is indicated on this plat.

Q Is that your Bridges-State Well No. 1?

A That is correct.

Q That is in Section 11 of 17 South, 34 East?

A That's right, Unit A.

Q How is that indicated on the plat?



A The tract is outlined in yellow and the well is circled in red.

Q And the plat also is a lease ownership plat, is that correct?

A Yes. As far as we're aware, a correct ownership plat.

(Whereupon, Pennzoil's Exhibit No. 2 was marked for identification.)

Q Now, Mr. Huddleston, I hand you what has been marked as applicant's Exhibit 2 and ask you if you will please identify that.

A Well, this is all the New Mexico Oil Conservation Commission forms that were filed in relation to this well, from the permit to drill through a four point back-pressure test that we ran on the well, and also potential, an oil potential that we ran.

Q Would you like to call the Examiner's attention to any particular pertinent parts of that, or is that just for general information purposes?

A Unless a specific question is asked, why we would just like to introduce it for general information.

Q You did plug back this well, now, is that correct?

A That's correct. This well was originally drilled to 13,370 in the Devonian and tested the Devonian, which was

wet, and as I stated previously, we had set pipe to around 12,000 feet and we plugged back to the base of this casing and completed in the smaller zone.

(Whereupon, Pennzoil's Exhibits 3 and 4 were marked for identification.)

Q Mr. Huddleston, passing applicant's Exhibit 3 for the moment and proceeding to applicant's Exhibit 4, which appears to be a log, would you please state to the Examiner what that is, is it a log of the well?

A This is a gamma ray neutron log, it's a composite gamma ray neutron log, actually we logged the well three times, but if you'll look on there from 11,952 to 11,990, which is the zone that we're referring to in requesting an oil allowable in this case.

Q Is that marked specifically, Mr. Huddleston?

A The zone is not marked on the logs.

Q Will you give them the depth again, please?

A 11,952 to 11,990.

MR. DURRETT: Does the Examiner have that?

MR. UTZ: 952?

A Yes, sir.

MR. UTZ: 11,990?

A Yes, sir, that's correct. We feel that there was 38 feet of net pay in this zone. The calculations from the

log indicated that it had one percent porosity and water saturation of approximately thirty percent.

MR. UTZ: The log doesn't go to 990, though, does it?

A That's a composite log, Mr. Utz.

Q (By Mr. Durrett) Now, Mr. Huddleston, going back to the applicant's Exhibit 3, will you please state to the Examiner what that is?

A Well, this is actually a tabulation of some bottomhole pressures that we ran on the well and some production tests. The initial bottomhole pressure on the drillstem test was 7,023 pounds. We produced the well seven days, produced 1157 barrels of oil and 21,240 MCF of gas.

MR. PORTER: That's seven days?

A Yes, sir. Which had a gas-oil ratio of 18,400.

We took an 82-hour bottomhole pressure and we did not run a buildup on this pressure, so we did not have any indication at the time that we ran this pressure how long it would take to build up, and after producing this amount of oil, why the pressure built back up and stabilized at 6721.

We had pressure drop of 302 pounds while having produced this amount of oil, which represented actually 3.73 barrels of oil and 71 MCF of gas per pound pressure drop. We then produced the well seven more days and produced 1190 barrels of oil and 16,105 MCF of gas, and this ratio at this time was

13,550, a detail of this seven days' test is another exhibit here, and we ran a flowing pressure and buildup and the well completely stabilized, bottomhole pressure completely stabilized in four hours, and at this time we had 267 pounds pressure drop from the previous pressure, and at that point we produced 4.46 barrels of oil and 60.5 MCF of gas per pound pressure drop, which was a total pressure drop of 569 pounds, and it averaged producing 4.13 per pound, and so you can see we had a substantial drop in pressure, having produced a limited amount of oil.

(Whereupon, Pennzoil's  
Exhibit No. 5 was marked  
for identification.)

Q I hand you what has been marked as applicant's Exhibit No. 5. Is that the detailed data you were speaking of a moment ago?

A Yes. This is the detailed data on the last seven day test that we conducted on this well. Those were the actual gas and oil rates, choke size and the tubing pressure during this time.

Q What does the data shown on these exhibits indicate to you, Mr. Huddleston, concerning this well?

A Well, we feel like that it indicates an extremely limited reservoir and, as you can see, we suffered a 569-pound pressure drop and produced a little over 2200 barrels of oil,



so we feel like that the reservoir probably doesn't have maybe twenty-five, thirty thousand barrels of oil in it, and I am sure that a straight line decline on the thing will indicate that the reserves are in the order of maybe 25,000 barrels of oil, but I am sure that it will be slightly parabolic, so it probably will have between twenty-five and thirty thousand barrels. I would be hesitant to pin it down any closer than that.

Q You wouldn't feel this is a real good well, would you, Mr. Huddleston?

A No, I would feel very unfortunate about it.

Q Do you have data there that would indicate to you that the well would be capable of draining 80 acres?

A Well, the only data that we have that indicates this is the fact that on this -- Let's enter this as an exhibit.

MR. DURRETT: Let's have this marked as applicant's Exhibit 6.

(Whereupon, Pennzoil's Exhibit No. 6 was marked for identification.)

Q Handing you what has been marked as applicant's Exhibit 6, would you please identify that for the Examiner?

A This is a flowing bottomhole pressure and buildup pressure that we ran on the well after we had flowed it the second seven-day period. The flowing bottomhole pressure on



this 16/64 choke was 2572 pounds, and in four hours the well had completely stabilized at 6442 pounds. So we feel like that this indicates excellent permeability.

Now, I did not make a detailed calculation on this, but we feel that any well that would build back up and be stable in four hours has excellent permeability.

Q That would be all the data that you would have available to you at this time to make a decision concerning the amount of acreage that could be efficiently and economically drained by this well?

A That's right. I feel like that a well with a bottomhole pressure stabilized in 48 hours would be capable of draining 80 acres.

Q Did you state previously the gravity of the oil, Mr. Huddleston?

A Well, the gravity, the oil is a slightly straw color, definitely has an oily texture, is 49 degrees API gravity, corrected to 60 degrees Fahrenheit.

Q Would you briefly discuss the economics involved with this well, Mr. Huddleston?

A Well, this well cost \$340,000 and we've calculated that to complete a Morrow well would cost \$280,000, and if we were to produce this well in compliance with the statewide rules for an oil well, why we would have a 37-barrel a day



allowable, and we just don't feel like that we'd ever, it would be just almost infinite payout on the well.

MR. PORTER: Is that 37 barrels taking into consideration --

A A 2,000 to one GOR limit.

Q Now, with a GOR of 12,000 to one, you still feel that you would have some difficulty paying the well out, is that correct, Mr. Huddleston?

A We don't actually think we can pay the well out, Mr. Durrett. We feel like this twenty-five, thirty thousand barrels is going to fall pretty short of the \$346,000 we have in the well and we have no intentions of additional development in the area because, as you can see, why \$280,000 is still going to be kind of bad economics.

Q Is it your opinion, Mr. Huddleston, that it would not be necessary to have one well on each 40 in order to efficiently develop this reservoir, whatever the extent of it?

A I feel like it would very adequately drain 80 acres if it was an extended reservoir. Of course, we certainly don't know what the aerial extent of it is, but we feel like it is really limited.

Q Do you have a purchaser for the gas?

A We do not. We have made several contacts and everyone is very hesitant on laying high pressure line to the



well because of the limited amount of gas it indicates that is available, and we probably, in order to sell the gas, we are going to have to lay a line ourselves.

Q In referring again to the economics, Mr. Huddleston, what do you anticipate will be the price you are going to be able to get for the gas?

A Well, the only indication we have had is that we will have to sell it as low pressure gas and probably get about six cents an MCF for it. I would like to add this: These people, they are not even very encouraging about this that we have found yet. I am sure we are going to have to put in our own system to sell anything from the well.

Q Which is going to involve how many lines?

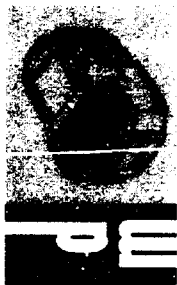
A Approximately four miles of high pressure lines.

Q Which doesn't add to the economics of the situation?

A No, it does not. It costs at least a dollar a foot for the line.

Q Now, proceeding to the alternative part of your application, Mr. Huddleston, am I correct that there is some question as to whether or not this is really an oil pool or a gas pool?

A Well, certainly with the ratio like this, and the fluid characteristics you have, that the only way you can



ever definitely establish this would be to run some rather extensive fluid samples and stuff like that.

MR. PORTER: Bottomhole sample?

A Right, Mr. Porter, and we feel like this would run us, oh, four or five hundred dollars and we would just rather not tack it onto the cost that we have in the well to date.

Q From Pennzoil's position, if the Commission should determine from the information available that this would be better classified as a gas well, Pennzoil would have no objection to that as such, would they?

A Not as long as we would sell sufficient amount of gas to justify the expense of putting in a high pressure gas line and everything. Even this is a questionable economics.

Q Have you contacted the offset operators concerning your situation, Mr. Huddleston?

A The offset operators both to the south and to the west were invited to join 320-acre gas proration unit, and both declined.

Q Do you have anything further you would like to present to the Examiner?

A I do not, other than one thing, when we ran the four point back pressure test on the well, that it really didn't make a great deal of difference at what rate we flowed the well and only had a calculated absolute open flow of 3.8 million.

You can see that it would really be questionable that it is a gas well from being able to have a stabilized bottomhole pressure in four hours and then turn around and only be able to flow this, why we question that from this standpoint, that it really is a gas well.

Q From Pennzoil's position, they would much prefer that the pool be classified as an oil pool?

A Yes, sir.

Q And spaced on 80 acres with a 12,000 to one GOR?

A Yes, that's what we would prefer.

MR. DURRETT: If the Examiner please, that will conclude our case on direct. I would like to move the introduction of the exhibits at this time.

Q (By Mr. Durrett) Mr. Huddleston, were Exhibits 1 through 6 prepared by you or under your direction and supervision?

A Yes, that's correct. They were all taken from our files.

MR. DURRETT: If the Examiner please, I would move the introduction of the Exhibits 1 through 6.

MR. UTZ: Without objection the Exhibits 1 through 6 will be entered into the record of this case.

(Whereupon, Pennzoil's Exhibits 1 through 6 were offered and admitted in evidence.)



CROSS EXAMINATION

BY MR. UTZ:

Q I have been perusing your four point test a little bit in connection with the probable classification as a gas well. I note that your GOR or gas-liquid hydrocarbon ratio was noted here as 8365.

A That's correct. That is what it was when we ran the four point on it.

Q Was this an aggregate GOR for all four points?

A Yes, it was.

Q And you did not take GOR's for each rate of flow?

A No, they did not, they just measured the total gas and total oil. That's also what that first seven-day flow period represents. That was the total. We did not have an adequate detailed breakdown on that.

Q Do you know whether or not -- Let me see now, this  $P_w$  measured on this well?

A Yes, with a bomb.

Q No, measured at the well head. Is this bottomhole test?

A That was not a calculated bottomhole pressure. That was actually measured with a bomb.

Q This is a bottomhole test then?

A Yes, sir.



Q So all your measurements were taken with a bomb?

A Yes, sir, that's correct. They are accurate from the standpoint that we didn't try to calculate them.

Q Which accounts for your quite good point alignment on the test, undoubtedly?

A Yes, sir, that's right.

Q I was in hopes we had one test that had been calculated and got alignment on. Does this well, even though it had a low GOR, did test pretty well as far as point alignment and probable accuracy of the test is concerned, didn't it?

A The first test we ran on the well, actually we had to test the well twice, the first test, why the alignment was so poor we couldn't make heads or tails of it at all, so we retested the well, actually. This is the second test on it.

Q You say this, your liquids, what color is that, amber color?

A Yes. I would say that it's amber colored. It's very similar to the Bough "C" production in northern Lea County.

Q Your gravity is low enough that you really wouldn't consider it a condensate, would you?

A Well, there again, unless you run one of these detailed fluid analyses, I just don't really believe that you





can say, but we feel like that it was an oil.

Q You feel like that the gas is coming from solution or from a separate zone?

A We feel like that it's coming from solution.

Q How far are you from a high pressure line?

A Approximately four miles.

Q Whose line is that?

A That's Phillips.

Q Gasoline plant?

A There is a low pressure line in the area and we're not going to gain anything pricewise by laying a line to their other line, but the low pressure line there near the well is loaded now and I doubt that we could put even a quarter of a mile in a day. They didn't want to even discuss that. They discussed maybe taking the second stage separation gas, and that's all.

Q The well is too far, then, from the El Paso line or Transwestern or some transportation facility of that nature?

A Yes, sir. Considering the reserves that we feel like the well has, it's really marginal economics to lay the four miles of line, and, as I have stated previously, neither Texaco nor Phillips are willing to lay a high pressure line to us. Of course, the Texaco plant is a high pressure system.

Q Where does Phillips sell their gas to from this



plant?

A I think El Paso.

Q Now, you are requesting a 12,000 GOR even though none of your tests, well, particularly this test here, is a little over 8,000, your other tests were in the neighborhood of thirteen to eighteen thousand?

A The first seven-day period --

Q How did you arrive at this 12,000?

A Well, actually, we felt like this would be more than adequate to produce more than the capacity of the well if we could get a 12,000 to one ratio.

Q Based it on allowable?

A Yes, sir.

Q I believe you stated that you had no present intentions of drilling any more wells in the pool?

A Unless we could see some phenomena in stabilization of bottomhole pressure or something, we certainly can't predict from the data we have now, we don't feel like we can do any additional development.

Q The other wells shown on your Exhibit No. 1 here, what formation are they producing from?

A Those are, they are San Andres wells. They are in the north portion of the Vacuum field and those wells are completed in the San Andres. Now, there are three Queen gas



wells in the immediate area. Those wells are completed around 3800 feet, if my memory serves me correctly.

MR. PORTER: Who is taking gas from these Queen gas wells?

A They're sold into Phillips' low pressure system. Those wells have a pretty low BTU value. I originally drilled this Marathon well myself, and if my memory is correct, I believe that well only had an 800 BTU.

MR. PORTER: What about the San Andres oil wells in the area, are they making any gas?

A Well --

MR. PORTER: Do they have tie-ins with any of the purchasers?

A There's a low pressure system in the entire area, but the system is, or at least Phillips indicated that the system was pretty well loaded. I notice that Marathon was taking as much as a million a day out of this well in Section 12, and these other two wells are also going into that system, so I suppose that these gas wells are pretty well loaded in that low pressure system.

MR. PORTER: That's the one that you say you probably couldn't produce a quarter of a million a day?

A Yes. What they told us, they just didn't want us on the line because we would pop everyone else's back pressure

valves. They didn't even want to talk about even a quarter of a million a day.

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

MR. PORTER: Yes, I had another one or two.

BY MR. PORTER:

Q This is a single zone completion?

A Yes.

Q You don't have any other phase that you can complete in?

A No, sir.

Q You were talking about the alternative of creating a gas pool here. How much acreage does your company own here?

A We have only the 80 acres.

Q Only the 80 acres?

A Yes, sir.

Q If it was classified as a gas well, it's automatically 320-acre spacing, is that right?

A Unless we could get an exception to the statewide spacing.

Q So you would have to form a unit of 320 acres and share in the proceeds from the well with the other owners?

A That's correct. These people were originally invited to join and declined.

Q And they declined. I thought I understood that.

MR. PORTER: That's all I have, Mr. Utz.

BY MR. UTZ:

Q The alternative would be an 80-acre non-standard unit, would it?

A Yes, sir, that's what we would like to have, is an alternative to an oil well.

MR. DURRETT: I might interject here, Mr. Examiner, that if the pool is classified as a gas pool and 320 acres was the spacing which it would be under the rules, then Pennzoil's alternative at that point, since the other owners of offsetting acreage have declined to join, they would need to ask for a non-standard 80-acre unit, of course, realizing that if some of the owners might change their mind there's a possibility of compulsory pooling to share some of this well.

MR. UTZ: You anticipate that they might object to non-standard unit of 80 acres?

MR. DURRETT: I don't think that Pennzoil really anticipates that they would object, is that correct, Mr. Huddleston?

A That's correct. Even as a Morrow completion we're talking about \$280,000.

MR. PORTER: But it's your opinion, Mr. Huddleston, as a petroleum engineer, that the reservoir would not warrant further drilling?



A That's correct.

MR. PORTER: Regardless of the classification of the well?

A That's correct. I don't see how that the well could possibly have more than maybe 35,000 barrel reservoirs. If you straight line decline the well, it only has about 20,000, but I am sure it would be slightly parabolic. This was indicated by our second pressure point, it was indicating a parabolic effect.

MR. PORTER: Thank you.

MR. UTZ: I note from your application you have asked for 330-foot locations, 80-acre spacing. This well was drilled on a 660 location, what is the reason for 330?

A Just for flexibility.

MR. UTZ: You are not going to drill any more wells, you don't need much flexibility?

A No, you don't.

MR. PORTER: Not much need for pool rules as far as that's concerned?

A We don't exactly enjoy the situation we're in.

MR. UTZ: Are there any other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Are there any other statements in this case?



MR. HOOVER: Mr. Examiner, John Hoover with Gulf.

MR. UTZ: Yes, sir.

MR. HOOVER: Gulf Oil Corporation has been furnished completion and test information on this well. From these data we feel that it is a gas well. We feel that it is premature to designate this as an oil pool and provide for 80-acre spacing. The development on 80-acre would result in drilling of unnecessary wells and economic waste if the well should later on be reclassified as a gas well. Gulf, therefore, recommends that the well be classified as a gas well until further production history is available. If, in the final analysis, from future production history, the Commission determines this to be an oil pool, development could then proceed on a prescribed basis spacing pattern.

MR. UTZ: John, don't you think this is a pretty low ratio gas well?

MR. HOOVER: We think it will go higher.

MR. UTZ: You think it will turn into a gas well?

MR. HOOVER: We think it's a gas well now, looking at the liquid and not knowing the circumstances, you could say that was distillate.

MR. UTZ: Any other statements?

MR. HATCH: We have a telegram addressed to "New Mexico Oil Conservation Commission, Santa Fe, New Mexico,

June 7th, 1963. Attention, Mr. Daniel S. Nutter. Re Case No. 3410 Pennzoil new pool and special rules, Lea County, New Mexico. Mobil Oil Corporation is the owner of substantial acreage in the area of Pennzoil Oil Company's Bridges-State Well No. 1 in Unit A, Section 11, Township 17 South, Range 34 East, Lea County, New Mexico. It is Mobil's position that conditions in the field are now premature for the adoption of oil field rules. But if the Commission is of a mind to adopt such rules, Mobil recommends oil units no smaller than 160 acres. Mobil at this time favors classification of production from this pool as gas. Ira B. Stitt, Jr., Division Operations Engineer, Mobil Oil Corporation."

MR. DURRETT: In reply, I would like to state that we feel we have already replied to those by Mr. Huddleston's testimony.

MR. UTZ: I think I would be inclined to agree with you, counsel. We will take the case under advisement.



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I N D E X

<u>WITNESS</u>	<u>PAGE</u>
KENNETH R. HUDDLESTON	
Direct Examination by Mr. Durrett	2
Cross Examination by Mr. Utz	15
Cross Examination by Mr. Porter	20
Cross Examination by Mr. Utz	21

<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED &amp; ADMITTED</u>
Pennzoil's No. 1	4	14
Pennzoil's No. 2	5	14
Pennzoil's No. 3	6	14
Pennzoil's No. 4	6	14
Pennzoil's No. 5	8	14
Pennzoil's No. 6	9	14

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I, ADA DEARNLEY, Notary Public 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 and Seal this 10th day of June, 1966.

Ala. Beasley  
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the E. J. ... hearing of Case No. 3410  
heard by me on June 8, 1966.  
[Signature]  
New Mexico Oil Conservation Commission

Case 3410

Heard 6-8-66

Rec. 6-9-66.

1. Grant Penzance a new pool for their St. Bridges #1, A-11-175-34E consisting of the  $N\frac{1}{2}$  NE/4 sec 11-175-34E. Pool to be called - North Vacuum Atoka out Pool.

2. Proportion factor should be 6.67 for 80 A. tracts. Top of pipe. 11,960'

3. Spacing within the 80 A. tracts should be ~~be~~ within 150' of the center of either 40 A. tract.

4. No gas should be placed after 30 days from the date of this order. (Could make it Aug 1, 66)

5. Use latest Std. 80 A. order for balance of this order.

Thistle R.

NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico

Form C-101  
Revised (12/2/55)

NOTICE OF INTENTION TO DRILL

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompletion begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission. If State Land submit 6 Copies Attach Form C-128 in triplicate to first 3 copies of form C-101

Midland, Texas

October 27, 1965

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

Gentlemen:

You are hereby notified that it is our intention to commence the Drilling of a well to be known as  
PENNZOIL COMPANY

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

APP. NO. 2

DATE 3/4/10

(Company or Operator)

Bridges-State

Well No. 1

A

The well is

located 660 feet from the North line and 660 feet from the

East

line of Section 11

T 17-S

R 34-E

NMPM.

(GIVE LOCATION FROM SECTION LINE)

Wildcat

Pool,

Lea

County

If State Land the Oil and Gas Lease is No. E-580

If patented land the owner is

Address

We propose to drill well with drilling equipment as follows: Rotary

The status of plugging bond is Blanket

Drilling Contractor Undetermined

We intend to complete this well in the Devonian

formation at an approximate depth of 14,500 feet.

CASING PROGRAM

We propose to use the following strings of Casing and to cement them as indicated:

Size of Hole	Size of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
17	13-3/8"	48#	New	400'	Circ.
12 1/2	9-5/8"	36# & 40#	New	5000'	1000
8 1/2	7"	22 1/2 #		115'	115'

If changes in the above plans become advisable we will notify you immediately.

ADDITIONAL INFORMATION (If recompletion give full details of proposed plan of work.)

Approved \_\_\_\_\_, 19\_\_\_\_  
Except as follows:

Cement must be back

to 9-1/2"

OIL CONSERVATION COMMISSION

By \_\_\_\_\_

Sincerely yours,

PENNZOIL COMPANY

(Company or Operator)

By Charles A. Brown

Position Mgr. Drilling & Production

Send Communications regarding well to

Name Charles A. Brown

Address 1007 Midland Savings Building  
Midland, Texas

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator <b>PENNZOIL COMPANY</b>			Lease <b>Bridges-State</b>		Well No. <b>1</b>
Unit Letter <b>A</b>	Section <b>11</b>	Township <b>17-S</b>	Range <b>34-E</b>	County <b>Lea</b>	
Actual Footage Location of Well: <b>660</b> feet from the <b>North</b> line and <b>660</b> feet from the <b>East</b> line					
Ground Level Elev. <b>4043</b>	Producing Formation <b>Devonian</b>		Pool <b>Wildcat</b>	Dedicated Acreage: <b>80</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name  
*Charles H. Brown*

Position  
**Mgr. Drlg. & Prod.**

Company  
**PENNZOIL COMPANY**

Date  
**October 27, 1965**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
*26 Oct. 1965*

Registered Professional Engineer  
and/or Land Surveyor

*[Signature]*

Certificate No.  
**1396**

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NEW MEXICO OIL CONSERVATION COMMISSION

Dec 6 7 52 AM '65

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease	State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.	E-580

<p align="center"><b>SUNDY NOTICES AND REPORTS ON WELLS</b></p> <p align="center"><small>(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)</small></p>		
1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER- <b>Drilling well.</b>	7. Unit Agreement Name	
2. Name of Operator <b>PENNZOIL COMPANY</b>	8. Firm or Lease Name <b>Bridges-State</b>	
3. Address of Operator <b>1007 Midland Savings Building, Midland, Texas</b>	9. Well No. <b>1</b>	
4. Location of Well UNIT LETTER <b>A</b> <b>660</b> FEET FROM THE <b>North</b> LINE AND <b>660</b> FEET FROM THE <b>East</b> LINE, SECTION <b>11</b> TOWNSHIP <b>17-S</b> RANGE <b>34-E</b> NMPM.	10. Field and Pool, or Wildcat <b>Wildcat</b>	
15. Elevation (Show whether DF, RT, GR, etc.)	12. County <b>Lea</b>	

<p align="center">16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data</p>			
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOBS <input checked="" type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

11-24-65: Ran 1250' of 9-5/8" 40# J STC and 3768' 9-5/8" J STC casing, Set @ 4990' and cemented w/800 Sx Incor Poz 6% gel and 250 Sx Incor neat. All cement contained 8 lbs of salt per Sx. Plug down at 1:30 a. m. 11-24-65.

11-25-65: W.O.C. 24 hrs. Tested casing to 1500 psi for 30 minutes. No pressure change observed.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Charles R. Brown TITLE Mgr. Drilling & Production DATE 11-29-65

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

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# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.
E-590

<p align="center"><b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)</p>	
1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER- <u>Drilling Well</u>	7. Unit Agreement Name
2. Name of Operator <u>Pennzoil Company</u>	8. Form or Lease Name <u>Bridges-State</u>
3. Address of Operator <u>1007 Midland Savings Bldg., Midland, Texas 79701</u>	9. Well No. <u>1</u>
4. Location of Well UNIT LETTER <u>A</u> , <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>660</u> FEET FROM THE <u>East</u> LINE, SECTION <u>11</u> TOWNSHIP <u>17-S</u> RANGE <u>34-E</u> NMPM.	10. Field and Pool, or Wildcat <u>Wildcat</u>
15. Elevation (Show whether DF, RT, GR, etc.) <u>4043 Ground Level</u>	12. County <u>Lea</u>

<p align="center">16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data</p>	
<p align="center">NOTICE OF INTENTION TO:</p> <p>PERFORM REMEDIAL WORK <input type="checkbox"/></p> <p>TEMPORARILY ABANDON <input type="checkbox"/></p> <p>PULL OR ALTER CASING <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p>	<p align="center">SUBSEQUENT REPORT OF:</p> <p>PLUG AND ABANDON <input type="checkbox"/></p> <p>CHANGE PLANS <input type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p> <p>REMEDIAL WORK <input type="checkbox"/></p> <p>COMMENCE DRILLING OPNS. <input type="checkbox"/></p> <p>CASING TEST AND CEMENT JOBS <input checked="" type="checkbox"/></p> <p>OTHER <input type="checkbox"/></p> <p>ALTERING CASING <input checked="" type="checkbox"/></p> <p>PLUG AND ABANDONMENT <input type="checkbox"/></p>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

2-12-66: Set 7" 26# & 28# N-80 & P-110 casing at 12,728' and cemented with 700 sacks Incor 50/50 Posmix with 3/4 of 1% CFR-2, 1/4# floccle per sack, 10# salt per sack and 2% gel. Plug down at 10:00 AM 2/12/66.

2-14-66: WOC 36 hrs. - Tested 7" casing with 2000# for 30 mins. No pressure change observed during test period.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [Signature] TITLE Drilling Supt. DATE Feb. 16, 1966

APPROVED BY [Signature] TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:



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OPERATOR	

HOBBS OFFICE S.O.O.  
NEW MEXICO OIL CONSERVATION COMMISSION  
MAR 3 11 40 AM '66

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. E-590
7. Unit Agreement Name
8. Farm or Lease Name Bridges-State
9. Well No. #1
10. Field and Pool, or Wildcat Wildcat
12. County Lea

**SUNDRY NOTICES AND REPORTS ON WELLS**  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.  
USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> <b>Drilling Well</b>
2. Name of Operator PENNZOIL COMPANY
3. Address of Operator 1007 Midland Savings Bldg., Midland, Texas
4. Location of Well UNIT LETTER <b>A</b> <b>660</b> FEET FROM THE <b>North</b> LINE AND <b>660</b> FEET FROM THE <b>East</b> LINE, SECTION <b>11</b> TOWNSHIP <b>17-S</b> RANGE <b>34-E</b> NMPM.
15. Elevation (Show whether DF, RT, GR, etc.) 4043 - Ground Level

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data			
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input checked="" type="checkbox"/>	OTHER <input checked="" type="checkbox"/> <b>Plug back</b>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1503.

Verbal approval to plug back obtained from Mr. Ramey Feb. 28, 1966.

2/28/66 - Set 150 sx. plug @ 13,050' (Top Devonian 12,996' - TD 13,370')  
Dressed off top of plug to 12,600'.

3/1/66 - Set HOWCO DC plug in 7" casing @ 12,180' - Dumped 20 gallons  
Hydromite on top of plug. Top of Hydromite plug @ 12,165'.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [Signature] TITLE Drilling Supt. DATE March 2, 1966.

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

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NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
**CERTIFICATE OF COMPLIANCE AND AUTHORIZATION  
TO TRANSPORT OIL AND NATURAL GAS**

FORM C-110  
(Rev. 7-60)

FILE THE ORIGINAL AND 4 COPIES WITH THE APPROPRIATE OFFICE

Company or Operator **PENNZOIL COMPANY** Lease **Bridges-State** Well No. **1**

Unit Letter **A** Section **11** Township **17-S** Range **34-E** County **Lea**

Pool **Wildcat** Kind of Lease (State, Fee Free) **State (No. E-580)**

If well produces oil or condensate ☐ or dry gas ☐ Unit Letter **A** Section **11** Township **17-S** Range **34-E**

Authorized transporter of oil ☐ or condensate ☒ **The Permian Corporation** Address (give address to which approved copy of this form is to be sent) **Midland, Texas**

Is Gas Actually Connected? Yes ☐ No ☒

Authorized transporter of casing head gas ☐ or dry gas ☐ Date Connected ☐ Address (give address to which approved copy of this form is to be sent)

If gas is not being sold, give reasons and also explain its present disposition:

**Well has not been potentialed. Gas presently flared.**

REASON(S) FOR FILING (please check proper box)

New Well ☒ Change in Ownership ☐  
Change in Transporter (check one) Other (explain below)  
Oil ☐ Dry Gas ☐  
Casing head gas ☐ Condensate ☐

Remarks

**Request for temporary establishment of condensate transporter while well is being tested.**

The undersigned certifies that the Rules and Regulations of the Oil Conservation Commission have been complied with.

Executed this the **29** day of **March**, 19 **66**

OIL CONSERVATION COMMISSION		By <b>Charles A. Brown</b>
Approved by <b>Joe E. Harty</b>		Title <b>Production Manager</b>
Title		Company <b>PENNZOIL COMPANY</b>
Date		Address <b>1007 Midland Savings Building Midland, Texas 79701</b>

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
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LAND OFFICE	
OPERATOR	

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

Form C-105  
Revised 1-1-65

5a. Indicate Type of Lease  
State ☒ Fee ☐

5. State Oil & Gas Lease No.  
**E-580**

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> OTHER <input type="checkbox"/>						7. Unit Agreement Name	
b. TYPE OF COMPLETION NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER <input type="checkbox"/>						8. Farm or Lease Name <b>Bridges-State</b>	
2. Name of Operator <b>PENNZOIL COMPANY</b>						9. Well No. <b>1</b>	
3. Address of Operator <b>1007 Midland Savings Building, Midland, Texas 79701</b>						10. Field and Pool, or Wildcat <b>Wildcat</b>	
4. Location of Well UNIT LETTER <b>A</b> LOCATED <b>660</b> FEET FROM THE <b>N</b> LINE AND <b>660</b> FEET FROM THE <b>E</b> LINE OF SEC. <b>11</b> TWP. <b>17-S</b> RGE. <b>34-E</b> NMPM						12. County <b>Lea</b>	
15. Date Spudded <b>11-5-65</b>		16. Date T.D. Reached <b>2-26-66</b>		17. Date Compl. (Ready to Prod.) <b>3-14-66</b>		18. Elevations (DF, RKB, RT, GR, etc.) <b>4043 GR</b>	
19. Elev. Casinghead <b>4043</b>		20. Total Depth <b>13,370'</b>		21. Plug Back T.D. <b>12,165'</b>		22. If Multiple Compl., How Many <b>-</b>	
23. Intervals Drilled By <b>Rotary Tools</b>		24. Producing Interval(s), of this completion - Top, Bottom, Name <b>11,960 to 11,979' Lower Penn. (Morrow)</b>		25. Was Directional Survey Made <b>No</b>		26. Type Electric and Other Logs Run <b>IES, GRN, ML, Bond</b>	
27. Was Well Cored <b>No</b>		28. CASING RECORD (Report all strings set in well)					
CASING SIZE <b>13-3/8"</b>		WEIGHT LB./FT. <b>48#</b>		DEPTH SET <b>421</b>		HOLE SIZE <b>17</b>	
<b>9-5/8"</b>		<b>36# &amp; 40#</b>		<b>4,990</b>		<b>12 1/4</b>	
<b>7"</b>		<b>26# &amp; 29#</b>		<b>12,728</b>		<b>8-3/4</b>	
CEMENTING RECORD <b>420 Sx</b>		AMOUNT PULLED <b>None</b>		<b>1,050 Sx</b>		<b>None</b>	
<b>700 Sx</b>		<b>None</b>		<b>None</b>		<b>None</b>	
29. LINER RECORD				30. TUBING RECORD			
SIZE <b>None used</b>		TOP <b>-</b>		BOTTOM <b>-</b>		SACKS CEMENT <b>-</b>	
<b>None used</b>		<b>-</b>		<b>-</b>		<b>-</b>	
<b>None used</b>		<b>-</b>		<b>-</b>		<b>-</b>	
<b>None used</b>		<b>-</b>		<b>-</b>		<b>-</b>	
31. Perforation Record (Interval, size and number) <b>11,962-68' &amp; 11,970-76', 3/8" holes 4/ft</b> <b>11,962-68' &amp; 11,970-76', 3/8" holes 2/ft</b> <b>11,960-64 &amp; 11,972-79', 3/8" holes 2/ft</b>				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL <b>Natural</b> AMOUNT AND KIND MATERIAL USED			
33. PRODUCTION Date First Production <b>3-14-66</b>				Production Method (Flowing, gas lift, pumping - Size and type pump) <b>Flowing Dist</b>			
Well Status (Prod. or Shut-in) <b>Shut in</b>				Date of Test <b>4-11-66</b>			
Hours Tested <b>10</b>		Choke Size <b>Various</b>		Prod'n. For Test Period <b>115.86</b>		Gas - MCF <b>936</b>	
Water - Bbl. <b>None</b>		Gas - MCF <b>936</b>		Water - Bbl. <b>None</b>		Gas - MCF <b>8365</b>	
Flow Tubing Press. <b>Various *</b>		Casing Pressure <b>Pkr.</b>		Calculated 24-Hour Rate <b>278.16</b>		Oil - Bbl. <b>3,100</b>	
<b>Various *</b>		<b>Pkr.</b>		<b>278.16</b>		<b>3,100</b>	
<b>Various *</b>		<b>Pkr.</b>		<b>278.16</b>		<b>3,100</b>	
<b>Various *</b>		<b>Pkr.</b>		<b>278.16</b>		<b>3,100</b>	
34. Disposition of Gas (Sold, used for fuel, vented, etc.) <b>Negotiating for sale</b>				Test Witnessed By <b>Joe A. Coleman</b>			
35. List of Attachments <b>Four-point test, Drillstem Test Data, Inclination Survey, Form C-104</b>							
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.							
SIGNED <i>Charles G. Brown</i>		TITLE <b>Production Manager</b>		DATE <b>April 15, 1966</b>			

\* Multi-point back pressure test.

# INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

## INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy	1655	T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt	1775	T. Strawn	11,183	T. Kirtland-Fruitland		T. Penn. "C"	
T. Salt	2740	T. Atoka	11,530	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	2906	T. Miss	12,154	T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian	13,000	T. Menefee		T. Madison	
T. Queen	3885	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	4665	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta	6073	T. McKee		Base Greenhorn		T. Granite	
T. Paddock	6170	T. Ellenburger		T. Dakota		T.	
T. Blinberry		T. Gr. Wash		T. Morrison		T.	
T. Tubb	7360	T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	8030	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp	9450	T.		T. Chinle		T.	
T. Penn.	10,770	T.		T. Permian		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

## FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1655	1655	Caliche, Redbeds, Sd and Congl.				
1655	1775	110	Anhy & dolo.				
1755	2740	985	Salt & Anhy.				
2740	2906	166	Anhy & dolo.				
2906	3885	979	Anhy, Sand & dolo.				
3885	4665	780	Dolo, Sand & Anhy.				
4685	6073	1388	Dolo & lime				
6073	6170	97	Sand & Sdy Dolo.				
6170	7360	1190	Dolo, sand & chert				
7360	8030	670	Dolo w/sand at top				
8030	9450	1420	Dolo, shale & lime				
9450	10770	1320	Lime, shale & chert				
10,770	11183	413	Shale, lime & sand				
11,183	11530	347	Silicious Lime, shale & sand				
11,530	12154	624	Shale, Sand, Congl. & lime.				
12,154	13000	846	Sil. Lime, chert & shale at base				
13,000	13370	370	Dolo and lime.				

PENNZOIL COMPANY

Bridges-State No. 1

A, 11, 17-S, 34-E

RECORD OF INCLINATION

<u>Depth</u>	<u>Angle of Inclination (Deg)</u>	<u>Displacement (Ft)</u>	<u>Accumulative Displacement (Ft)</u>
421	1/2	3.7	3.7
1,025	3/4	7.9	11.6
1,400	3/4	4.9	16.5
2,250	1/2	7.4	23.9
2,911	1/2	5.7	29.6
3,415	1	8.8	38.4
3,710	1/4	1.3	39.7
4,565	1	15.0	54.7
4,980	3/4	5.4	60.1
5,960	3/4	12.8	72.9
6,575	1	10.8	83.7
7,205	3/4	8.3	92.0
7,980	1/2	6.7	98.7
8,960	3/4	12.8	111.5
9,780	1	14.3	125.8
10,300	1	9.1	134.9
11,060	1 1/4	16.6	151.5
11,675	1-3/4	3.0	154.5
12,100	2 1/4	17.7	172.2
12,750	3 1/4	37.1	209.3
13,370	3 1/4	34.9	244.2
Total Displacement			244.2

Surveys were run in open hole.

I, Charles A. Brown, hereby certify that the above information is true and correct to the best of my knowledge and belief.

Charles A. Brown  
Production Manager

Sworn to and subscribed to before me this 15th day of April, 1966.

Verna L. Wziles  
Notary Public in and for  
Midland County, Texas

VERNA L. WZILES



# COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXPRESS 3-3813

611 GRIMES

P. O. BOX 1829

HOBBS, NEW MEXICO

APRIL 12, 1966

PENNZOIL COMPANY  
1007 MIDLAND SAVINGS BANK BLDG.  
MIDLAND, TEXAS

RE: GAS VOLUME TEST  
SAMPLE ANALYSIS

GENTLEMEN:

IN COMPLIANCE WITH YOUR INSTRUCTIONS A 4-POINT BACK PRESSURE TEST WAS CONDUCTED AND A SAMPLE TAKEN DURING THE FLOW PERIOD.

THE ABSOLUTE OPEN FLOW WAS CALCULATED TO BE 3,100. MCF/D. AVERAGE GAS PRODUCTION DURING THE TEST WAS 2,326.94 MCF/D WITH 278.16 BO/D. A GOR WAS CALCULATED TO BE 8365 SCF/BO AND THE GAS SAMPLE YIELDED COMPONENT PERCENTAGES AS FOLLOWS:

CARBON DIOXIDE	0.29
NITROGEN	0.40
HYDROGEN SULFIDE	0.00
METHANE	84.66
ETHANE	9.27
PROPANE	3.67
ISO BUTANE	0.55
NORMAL BUTANE	0.79
PENTANE	0.28
HEXANE	0.09

---

TOTAL	100.00
-------	--------

CALCULATED SP. G.	0.6692
CALCULATED BTU SAT	1159

VERY TRULY YOURS

COLEMAN PETROLEUM ENG. CO.

*Joe A. Coleman*  
JOE A. COLEMAN



# COLEMAN PETROLEUM ENGINEERING COMPANY

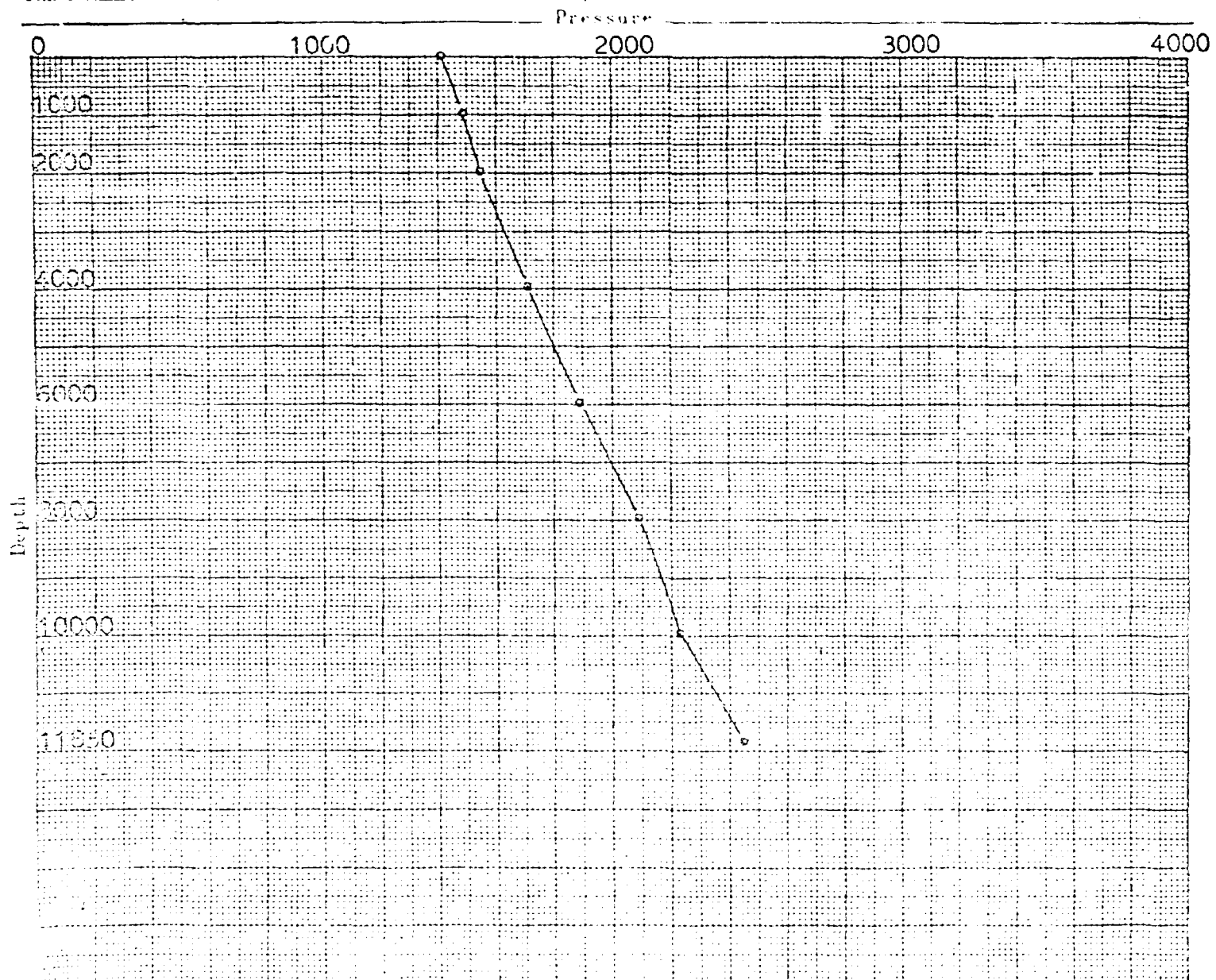
PHONE EXPRESS 3-3813  
611 GRIMES  
P. O. BOX 1629  
HOBBS, NEW MEXICO

## BOTTOM HOLE PRESSURE RECORD

OPERATOR **PENNZOIL COMPANY**  
FIELD **VACUUM** FORMATION **MARROW GAS**  
LEASE **BRIDGES ST.** WELL No. **1**  
COUNTY **LEA** STATE **NEW MEXICO**  
DATE **4-11-66** TIME **8:00 PM**  
Status **FLOWING ON** Test depth **11850'**  
~~XXXXXX~~ **20/64" CH** Last test date **INITIAL**  
Tub Pres. **1423** BHP last test **-**  
Cas. Pres. **PKR** BHP change **-**  
Elev. **4062' KB** Fluid top **SURFACE**  
Datum **(-7908)\*\*** Water top **NONE**  
Temp. @ **176°F** Run by **ALLMAN**  
Cal. No. **A3131N** Chart No. **2**

Depth	Pressure	Gradient
0	1423	-
1000	1492	.069
2000	1553	.061
4000	1711	.079
6000	1896	.093
8000	2092	.098
10000	2238	.073
11850	2453	.117
11970(-7908)	2467* **	(.117)

\* EXTRAPOLATED PRESSURE  
\*\* MID POINT OF CASING PERFORATIONS





# COLEMAN PETROLEUM ENGINEERS COMPANY

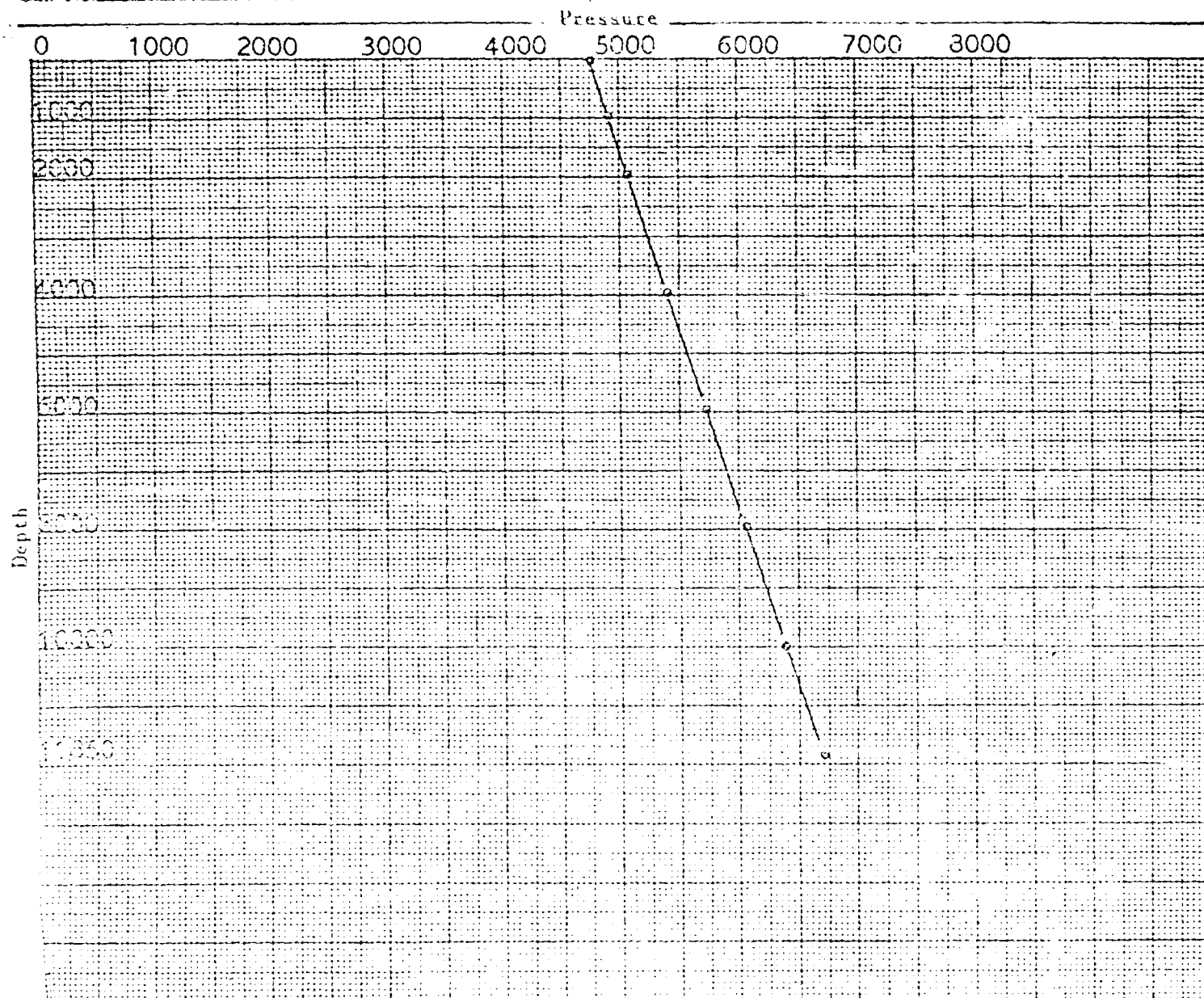
PHONE EXPRESS 33813  
G. H. GRIMES  
P. O. BOX 1829  
HOBBS NEW MEXICO

## BOTTOM HOLE PRESSURE RECORD

OPERATOR PENNZOIL COMPANY  
FIELD VACUUM FORMATION MARROW GAS  
LEASE BRIDGES ST. WELL No. 1  
COUNTY LEA STATE NEW MEXICO  
DATE 4-11-66 TIME 8:00 AM  
Status SHUT IN Test depth 11850'  
Time S. 182.0 HRS Last test date INITIAL  
Tub Pres. 4770 DWT BHP last test -  
Cas. Pres. PKR BHP change -  
Elev. 4062' KB Fluid top. NONE  
Datum (-7908)\*\* Water top NONE  
Temp. @ 1760F Run by ALLMAN  
Cal. No. A3131N Chart No. 1

Depth	Pressure	Gradient
0	4770	-
1000	4928	.158
2000	5090	.162
4000	5416	.163
6000	5742	.163
8000	6070	.164
10000	6398	.164
11850	6701	.164
11970(-7908)	6721* **	(.164)

\* EXTRAPOLATED PRESSURE  
\*\* MID POINT OF CASING PERFORATIONS





## Form C-122

Revised 12-1-55

Pool	UNDESIGNATED	For 1981	County
------	--------------	----------	--------

Initial            X            Animal                       Date of Test 4-11-66

Company	PENAZOIL COMPANY	Location	State	Well No.	1
---------	------------------	----------	-------	----------	---

Unit 3 Sec. 11 Div. 17 Loc. 1 Date 12/20/2017 Name XXXX

Casing 7" Wt. 29 I.D. 6.186 S.S. 40,000 Psi. 11970 To 11979

Tubing 2 3/8 Wt. 4.7 I.D. 1.995 S.D. 2.000 Perft. - To -

Gas Pay: From 11960 To 11979 L 11981 HG - -CL - Bar.Press. 13.2

Producing Thru: Casing Tubing Type Well SINGLE

Date of Completion: 4-11-66      Packer      Reservoir Temp. 176°F

## DISCUSSION DATA

Tested Through	(XMAS)	(Choke)	(Meter)	Type Tabs	FLANGE
----------------	--------	---------	---------	-----------	--------

[illegible]

FIRST STAGE      750.0 0.100 10.000

No.	Coefficient (24-Hour)	$\sqrt{h_{wPF}}$	Pressure psia	Flow Temp. Factor $F_t$	Gravity Factor $F_g$	Compress. Factor $F_{gv}$	Rate of Flow Q-MCFPD * @ 15.025 psia
1.	14.36	131.05	613.2	1.000	1.000	1.000	1377.85
2.	14.36	150.83	613.2	1.000	1.000	1.000	2135.23
3.	14.36	166.91	613.2	1.000	1.000	1.000	2357.94
4.	14.36	190.20	613.2	1.000	1.000	1.000	2669.85
5.							

## PROPOSED ORGANIZATIONS

Gas Liquid Hydrocarbon Ratio 8.355 cc/ml.

Gravity of Liquid Hydrocarbons A.P. 60 1978

$$T_0 = (1 - e^{-\beta})$$
Specific Gravity Separator Gas .6692

Specific Gravity Flowing Fluid .7852

P<sub>0</sub> 6734.2      p<sub>2</sub> 45349.4

## 5HP C (-7938) \*\* 11377 10000 3.00 THE CALCULATIONS

[illegible]

000001

ADDRESSES

[illegible]

1. The first part of the document is a title page. It contains the title of the document, the author's name, and the date of the document. The title is "The first part of the document is a title page. It contains the title of the document, the author's name, and the date of the document." The author's name is "The author's name is the name of the person who wrote the document." The date of the document is "The date of the document is the date when the document was written." The title page is the first page of the document and it contains the title, author's name, and date of the document.

COMPANY \_\_\_\_\_

SECOND STAGE FLOW CALCULATIONS 2" x 1/2" OR							
No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor $F_t$	Gravity Factor $F_g$	Compress. Factor $F_{pv}$	Rate of Flow Q-MCFPD @ 15.025 psia
1.	71.93	-	-	0.973	0.983	-	66.93
2.	71.93	-	-	0.973	0.983	-	66.93
3.	71.93	-	-	0.973	0.983	-	66.93
4.	71.93	-	-	0.973	0.983	-	66.93
5.	71.93	-	-	0.973	0.983	-	66.93

COMPANY PENNZOIL COMPANY  
 WELL BRIDGES STATE, No. 1  
 LOCATION A 11-17 S - 34 E  
 COUNTY LEA  
 DATE 4-12-66

$P_c^2 - P_w^2$  (THSND'S)

ABSOLUTE POTENTIAL

$Q_2 = 13000; \text{LOG} = 4.11394$   
 $Q_1 = 1400; \text{LOG} = 3.14613$   
 SLOPE  $n = .96781$

$Q_1$

$Q_2$

Q-MCFD-15.025 PSIA

NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico

(Form C-104)  
Revised 7/1/57

REQUEST FOR ~~(OIL)~~ - (GAS) ALLOWABLE

New Well  
Recompletion

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

Midland, Texas April 15, 1966  
(Place) (Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

Pennzoil Company Bridges-State Well No. 1, in NE 1/4 NE 1/4,  
(Company or Operator) (Lease)  
A, Sec. 11, T. 17-S, R. 34-E, NMPM, Wildcat Pool  
Unit Letter

Lea

Please indicate location:

D	C	B	A
			X
E	F	G	H
L	K	J	I
M	N	O	P

County Date Spudded 11-5-65 Date Drilling Completed 2-26-66  
Elevation 4043 Ground Total Depth 13,373' PWD 12,165'  
Top Oil/Gas Pay 11,950' Name of Prod. Form Penn. (Morrow)

PRODUCING INTERVAL -

Perforations 11,960'-68', 11,970'-79'  
Open Hole --- Depth Casing Shoe 12,728' Depth Tubing 11,910'

OIL WELL TEST -

Natural Prod. Test: bbls. oil, bbls. water in hrs, min. Choke Size  
Test After Acid or Fracture Treatment (after recovery of volume of oil equal to volume of Choke load oil used): bbls. oil, bbls. water in hrs, min. Size

GAS WELL TEST -

Natural Prod. Test: 3,100 MCF/Day; Hours flowed 10 Choke Size Multi-point

Tubing, Casing and Cementing Record

Size	Feet	Sax
2-3/8	11910	-
13-3/8	421	425
9-5/8	4990	1050
7"	12728	700

Method of Testing (pitot, back pressure, etc.): Back pressure  
Test After Acid or Fracture Treatment: MCF/Day; Hours flowed  
Choke Size Method of Testing:

Acid or Fracture Treatment (Give amounts of materials used, such as acid, water, oil, and sand):  
Casing Tubing Date first new  
Press. Press. oil run to tanks

Oil Transporter The Permian Corporation (Temporary)  
Gas Transporter Undetermined

Remarks:

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved April 15, 1966 PENNZOIL COMPANY  
(Company or Operator)

OIL CONSERVATION COMMISSION

By: Charles A. Brown  
(Signature)

Charles A. Brown  
Title Production Manager  
Send Communications regarding well to:

By: Title

Name PENNZOIL COMPANY - 1007 Midland  
Address Savings Bldg., Midland, Texas  
79701

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LAND OFFICE	
OPERATOR	

RE-FILED AFTER TESTING

Form C-105  
Revised 1-1-66

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease	State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.	E-580

1a. TYPE OF WELL						7. Unit Agreement Name	
b. TYPE OF COMPLETION OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER <input type="checkbox"/> NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER <input type="checkbox"/>						8. Farm or Lease Name Bridges-State	
2. Name of Operator PENNZOIL COMPANY						9. Well No. 1	
3. Address of Operator 1007 Midland Savings Building, Midland, Texas						10. Field and Pool, or Wildcat Wildcat	
4. Location of Well UNIT LETTER <u>A</u> LOCATED <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>660</u> FEET FROM THE <u>East</u> LINE OF SEC. <u>11</u> TWP <u>17-S</u> RGE. <u>34-E</u> NMPM						12. County Lea	
15. Date Spudded 11-5-65	16. Date T.D. Reached 2-26-66	17. Date Compl. (Ready to Prod.) 3-14-66	18. Elevations (DF, RKB, RT, GR, etc.) 4043 Gr.	19. Elev. Casinghead 4043			
20. Total Depth 13,370	21. Plug Back T.D. 12,165	22. If Multiple Compl., How Many -	23. Intervals Drilled By Rotary Tools 13,370	Cable Tools -			
24. Producing Interval(s), of this completion - Top, Bottom, Name 11,960 to 11,979 Lower Penn. (Morrow)						25. Was Directional Survey Made No	
26. Type Electric and Other Logs Run IES, GRN, ML, Bond						27. Was Well Cored No	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED		
13-3/8"	48#	421	17	420 Sx	None		
9-5/8"	36# & 40#	4,990	12 1/2	1,050 Sx	None		
7"	26# & 29#	12,728	8-3/4	700 Sx	None		
29. LINER RECORD							
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	30. TUBING RECORD		
None Used	-	-	-	-	SIZE 2-3/8"	DEPTH SET 11,910	PACKER SET 11,900
31. Perforation Record (Interval, size and number)				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
11,962-68' & 11,970-76', 3/8" holes 4/ft				DEPTH INTERVAL			
11,962-68' & 11,970-76', 3/8" holes 2/ft				AMOUNT AND KIND MATERIAL USED			
11,960-64' & 11,972-79', 3/8" holes 2/ft				Natural			
33. PRODUCTION							
Date First Production 3-14-66		Production Method (Flowing, gas lift, pumping - Size and type pump) Flowing				Well Status (Prod. or Shut-in) Shut-in	
Date of Test 4-23-66	Hours Tested 24	Choke Size 20/64	Prod'n. Per Test Period →	Oil - Bbl. 215.28	Gas - MCF 2,685	Water - Pbl. None	Gas - Oil Ratio 12,465
Flow Tubing Press. 1670	Casing Pressure Pkr	Calculated 24-Hour Rate →	Oil - Bbl. 215.28	Gas - MCF 2,685	Water - Pbl. None	Oil Gravity - API (Corr.) 48.6	
34. Disposition of Gas (Sold, used for fuel, vented, etc.) Negotiating for sale.						Test Witnessed By Charles A. Brown	
35. List of Attachments							
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.							
SIGNED <u>Charles A. Brown</u>				TITLE <u>Production Manager</u>		DATE <u>May 3, 1966</u>	

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TRANSPORTER	OIL
	GAS
OPERATOR	
PRORATION OFFICE	

**NEW MEXICO OIL CONSERVATION COMMISSION**  
**REQUEST FOR ALLOWABLE**  
**AND**  
**AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS**

Form C-104  
Supersedes Old C-104 and C-110  
Effective 1-1-65

**I. Operator**

**Pennzoil Company**

**Address**  
1007 Midland Savings Bldg., Midland, Texas 79701

**Reason(s) for filing (Check proper box)**

New Well	<input checked="" type="checkbox"/>	Change in Transporter of:	
Recompletion	<input type="checkbox"/>	Oil	<input type="checkbox"/> Dry Gas <input type="checkbox"/>
Change in Ownership	<input type="checkbox"/>	Casinghead Gas	<input type="checkbox"/> Condensate <input type="checkbox"/>

**Other (Please explain)**

If change of ownership give name and address of previous owner \_\_\_\_\_

**II. DESCRIPTION OF WELL AND LEASE**

<b>Lease Name</b> Bridges-State	<b>Well No.</b> 1	<b>Pool Name, including Formation</b> Wildcat - Penn. (Morrow)	<b>Kind of Lease</b> State, Federal or Fee	<b>State</b> State	<b>Lease No.</b> E-580
<b>Location</b>					
Unit Letter	A	660 Feet From The	North	Line and	660 Feet From The
Line of Section	11	Township	17-S	Range	34-E
					Lea County

**III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS**

<b>Name of Authorized Transporter of Oil</b> <input type="checkbox"/> or <b>Condensate</b> <input type="checkbox"/>	<b>Address (Give address to which approved copy of this form is to be sent)</b>
Undetermined at this time.	
<b>Name of Authorized Transporter of Casinghead Gas</b> <input type="checkbox"/> or <b>Dry Gas</b> <input type="checkbox"/>	<b>Address (Give address to which approved copy of this form is to be sent)</b>
Undetermined at this time.	
<b>If well produces oil or liquids, give location of tanks.</b>	<b>Unit</b> <b>Sec.</b> <b>Twp.</b> <b>Rge.</b> <b>Is gas actually connected?</b> <b>When</b>

If this production is commingled with that from any other lease or pool, give commingling order number: \_\_\_\_\_

**IV. COMPLETION DATA**

<b>Designate Type of Completion - (X)</b>	<b>Oil Well</b>	<b>Gas Well</b>	<b>New Well</b>	<b>Workover</b>	<b>Deepen</b>	<b>Plug Back</b>	<b>Same Res'tv.</b>	<b>Diff. Res'tv.</b>
X	X							
<b>Date Spudded</b> 11-5-65	<b>Date Compl. Ready to Prod.</b> 3-14-66	<b>Total Depth</b> 13,370'		<b>P.B.T.D.</b> 12,165'				
<b>Elevations (DF, RKB, RT, GR, etc.)</b> 4043 Gr.	<b>Name of Producing Formation</b> Penn. (Morrow)	<b>Top Oil/Gas Pay</b> 11,950'		<b>Tubing Depth</b> 11,910'				
<b>Perforations</b> 11,960'-68' - 11,970'-79'				<b>Depth Casing Shoe</b> 12,728'				
<b>TUBING, CASING, AND CEMENTING RECORD</b>								
<b>HOLE SIZE</b>	<b>CASING &amp; TUBING SIZE</b>		<b>DEPTH SET</b>		<b>SACKS CEMENT</b>			
17"	2-3/8		11,910'		--			
12-1/4"	13-3/8		421'		420			
8-3/4"	9-5/8		4990'		1050			
	7		12,728'		700			

**V. TEST DATA AND REQUEST FOR ALLOWABLE OIL WELL** (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

<b>Date First New Oil Run To Tanks</b> 3-14-66	<b>Date of Test</b> 4-23-66	<b>Producing Method (Flow, pump, gas lift, etc.)</b> Flow	
<b>Length of Test</b> 24 hrs.	<b>Tubing Pressure</b> 1670	<b>Casing Pressure</b> Pkr.	<b>Choke Size</b> 20/64
<b>Actual Prod. During Test</b> 215.28	<b>Oil - Bbls.</b> 215.28	<b>Water - Bbls.</b> None	<b>Gas - MCF</b> 2685

**GAS WELL**

<b>Actual Prod. Test-MCF/D</b>	<b>Length of Test</b>	<b>Bbls. Condensate/MMCF</b>	<b>Gravity of Condensate</b>
<b>Testing Method (flow, back prod.)</b>	<b>Tubing Pressure (Shut-in)</b>	<b>Casing Pressure (Shut-in)</b>	<b>Choke Size</b>

**VI. CERTIFICATE OF COMPLIANCE**

**OIL CONSERVATION COMMISSION**

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

APPROVED \_\_\_\_\_, 19\_\_\_\_

BY \_\_\_\_\_

TITLE \_\_\_\_\_

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation logs for the well in accordance with RULE 111.

All portions of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

*[Signature]*  
Production Manager

May 5, 1966

PENNZOIL COMPANY

State Bridges No. 1

Unit A, Sec. 11, T-17-S, R-34-E

Lea County, New Mexico

BHP - Production

Initial BHP 7023#  
Produced well 7 days 1157 BO, 21,240 MCF  
GOR 18,400  
82 Hr BHP 6721#  
Pressure drop 302#  
Produced 3.73 BO/# 71 MCF/#  
Produced well 7 days 1190 BO, 16,105 MCF  
GOR 13,550  
BHP stabilized in 4 hrs @ 6454#  
Pressure drop 267#  
Produced 4.46 BO/# 60.5 MCF/#

Total Pressure drop 569#  
Average Production 4.13 BO/#, 65.6 MCF/#

BEFORE EXAMINER UTZ
CIL CONSERVATION COMMISSION
<i>Appl</i> EXHIBIT NO. <u>3</u>
<i>3410</i>

PENNZOIL COMPANY

State Bridges No. 1

Unit A, Sec. 11, T-17-S, R-34-E

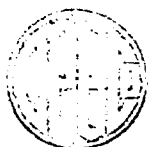
Lea County, New Mexico

WELL TEST

Date	Gas Vol. MCF	Oil BPD	Choke	T.P.
4-19-66	2,350	170	16/64	1800
4-20-66	2,350	168	"	1800
4-21-66	2,300	171	"	1750
4-22-66	2,295	171	"	1750
4-23-66	2,295	169	"	1700
4-24-66	2,295	173	"	1700
4-25-66	<u>2,220</u>	<u>168</u>	"	1650
Total	16,150	1,190		
GOR =	$\frac{16,150}{1,190}$	=	13,550	

STATE EXAMINER 107  
 COUNTY COMMISSIONER  
 April 25, 1966 5  
 2410





# COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXPRESS 3-3813

611 GRIMES

P. O. BOX 1829

HOBBS, NEW MEXICO

PENNZOIL COMPANY

WELL: BRIDGES STATE, NO. 1

FIELD: MAGNAN MIZZON GAS

## CHRONOLOGICAL PRESSURE & PRODUCTION DATA

DATE	STATUS OF WELL	TIME	ALPSED TIME HRS	MIN	PRODUCTION FO/D	SURFACE PRESSURE TDS	CSG	BHP @ -7905 11970' Psg
1966	FLOWING ON 20/64"							
4-25	CHOKE RUN FLOWING GRADIENT & ON BOTTOM WITH BOMB SHUT IN	9:00 AM	-	-	-	1561	Pkr	2572
	"	10:00	1	00	134.00*	-	-	2572
	"	10:15	0	15	-	-	-	2475
	"	10:30	0	30	-	-	-	6027
	"	11:00	1	00	-	-	-	6122
	"	12:00 N	2	00	-	-	-	6442
	"	1:00 PM	3	00	-	-	-	6450
	"	2:00	4	00	-	-	-	6456
	"	3:00	5	00	-	-	-	6456
	"	4:00	6	00	-	-	-	6451
	"	10:00	7	00	-	-	-	6451
4-26	"	4:00 PM	10	00	-	-	-	6451
	"	10:00	11	00	-	-	-	6451
	"	4:00 AM	12	00	-	-	-	6454
	"	10:00	1	00	-	-	-	6451
4-27	"	4:00	2	00	-	-	-	6451
	PULLED BOMB & RUN STATIC GRADIENT	10:00 AM	3	00	-	4559	-	6454

\* PRODUCTION MEASURED DURING 1.0 HOUR FLOW TEST  
W/2,400.0' P.S.G. GAS

GOR =  $\frac{24000}{1000} = 24.0 \text{ bbl/MMCF Gas}$

PI =  $\frac{1561}{2000} = 0.7805 \text{ bbl/MMCF Gas}$

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6

CASE NO. 34



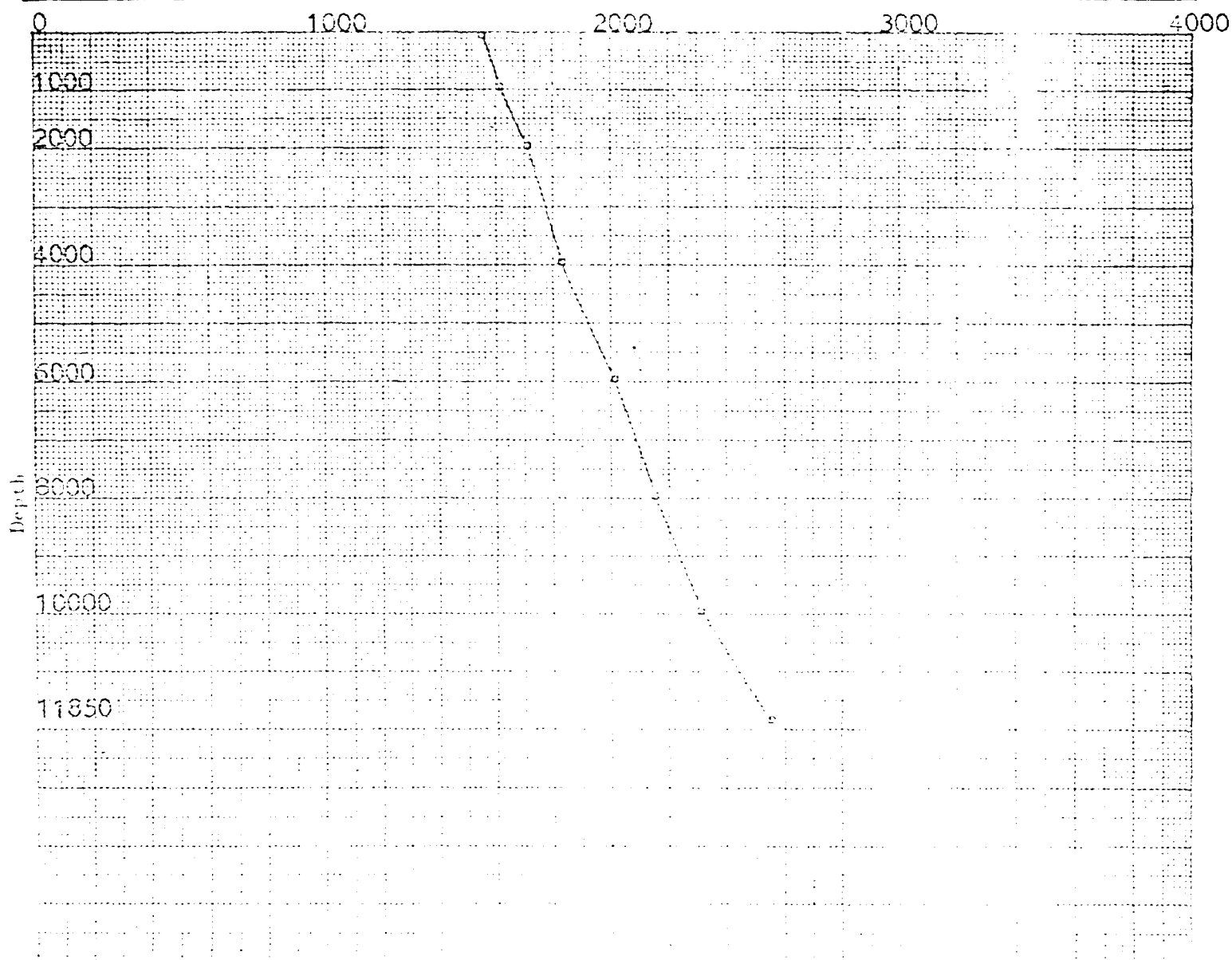
WELL LOG

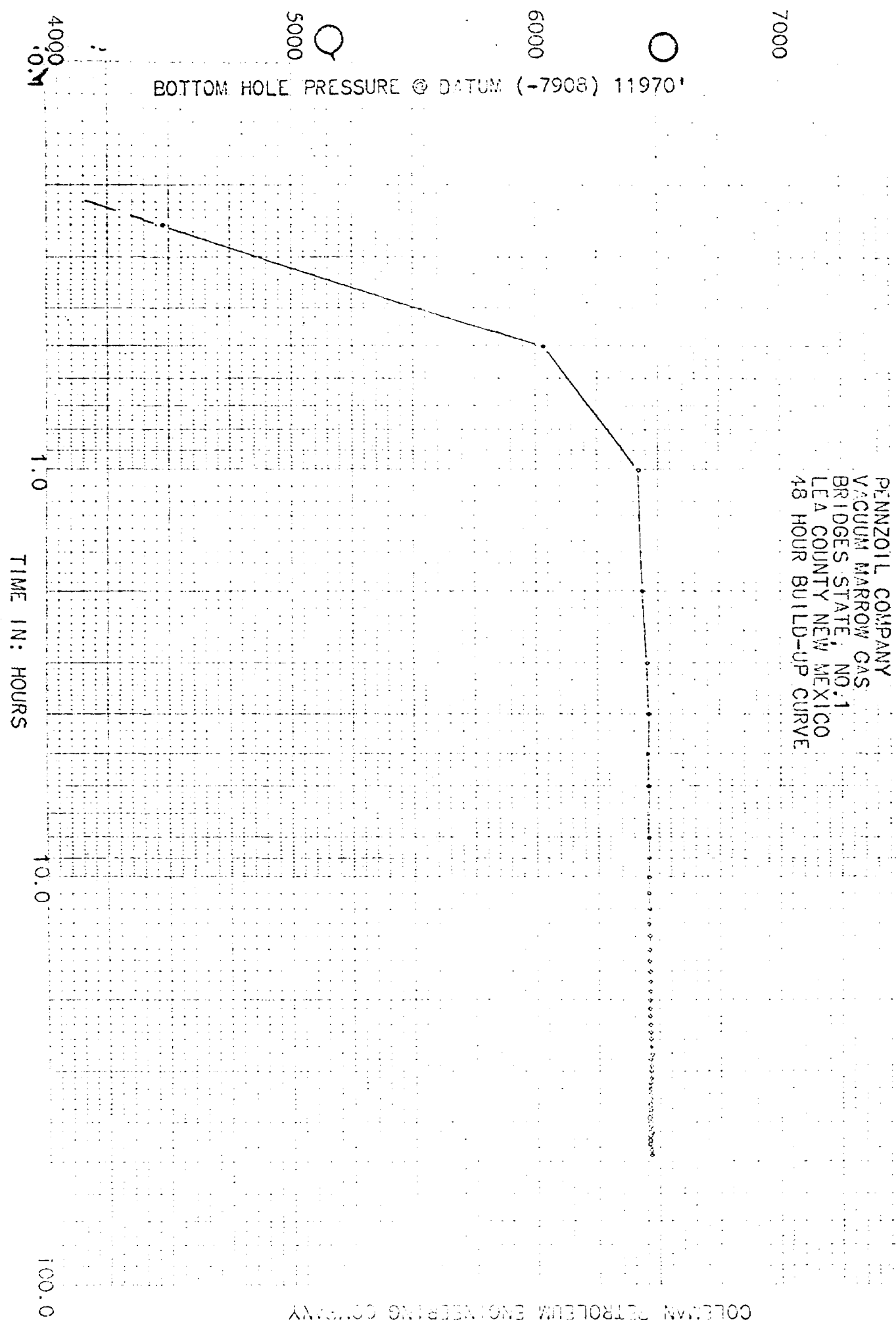
WELL NO. 1  
BRIDGES STATE  
NEW MEXICO

OPERATOR PENNZOIL COMPANY  
FIELD VACUUM FORMATION MARROW GAS  
LEASE BRIDGES STATE W. No. 1  
COUNTY LEA STATE NEW MEXICO  
DATE 4-25-66 TIME 9:00 AM  
Status FLOWING ON TEST  
20/64" CH  
Tub Pres 1561 BHP 1561  
Gas Pres PKR BHP 1561  
Elev. 4062' KB  
Datum (-7908)\*\*  
Temp. @ 1760F  
Cal. No. A3131N Chart No. 1

Depth	Pressure	Gradient
0	1561	-
1000	1618	.057
2000	1715	.097
4000	1839	.062
6000	2013	.087
8000	2165	.076
10000	2329	.082
11350	2557	.123
11970(-7908)	2572* **	(.123)

\* EXTRAPOLATED PRESSURE  
\*\* MID POINT OF CASING PERFORATIONS





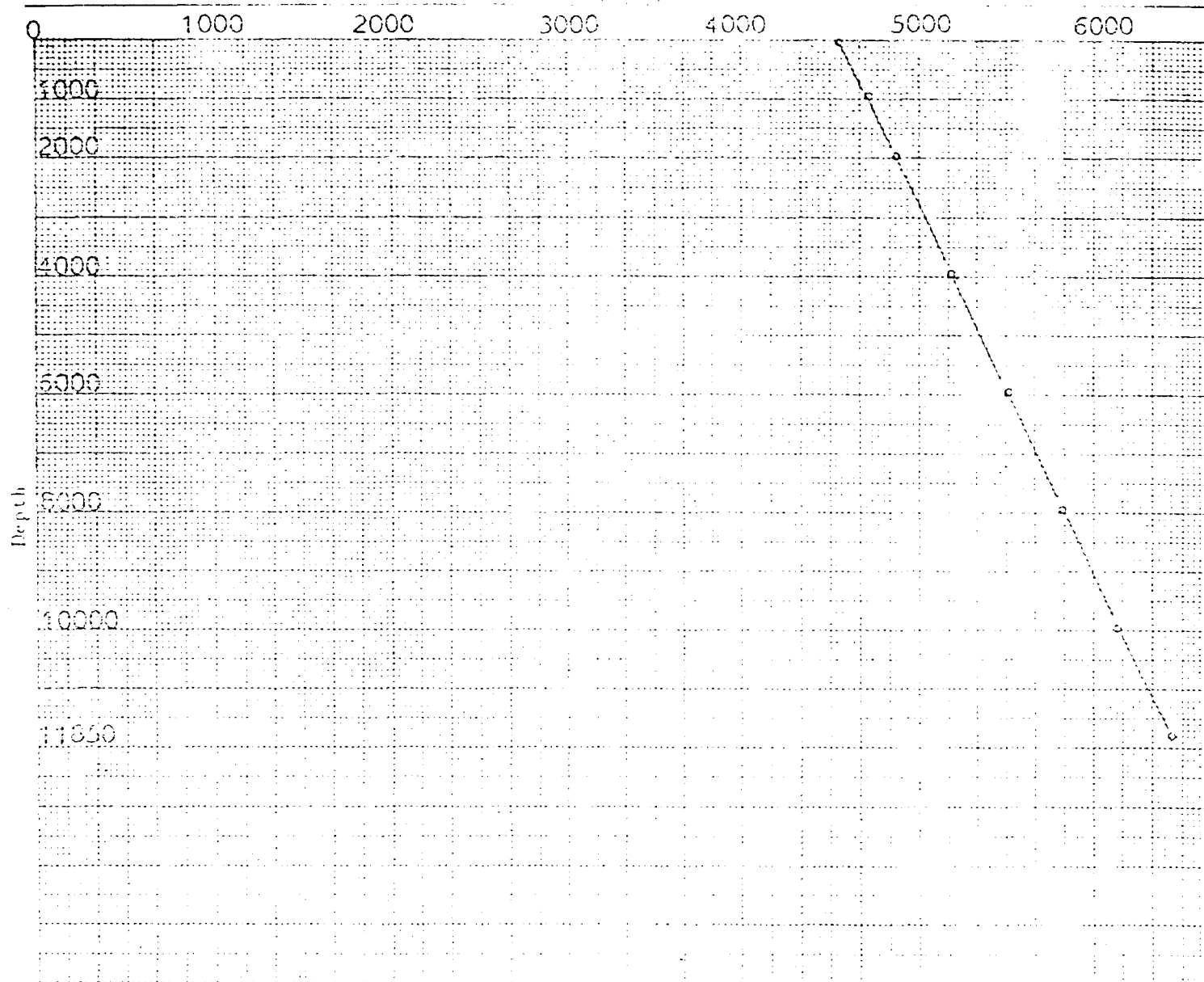
COLEMAN PETROLEUM ENGINEERING COMPANY



OPERATOR PENNZOIL COMPANY  
FIELD VACUUM NORMA NARROW GAS  
LEASE BRIDGES STATE Well No. 1  
COUNTY LEA STATE NEW MEXICO  
DATE 4-27-66 TIME 10:00 AM  
Status SHUT IN Test depth 11850'  
Time S. 148.0 HRS Last test date 4-11-66  
Tab Pres 4559 BHP last test 6721  
Gas Pres PKR BHP change 267# Loss  
Elev. 4062' KB Flow top NONE  
Datum (-7908)\*\* Water top NONE  
Temp. @ 176°F Run by CATES  
Cat. No A3131N Chart No 2

0	4559	-
1000	4716	.157
2000	4873	.157
4000	5159	.158
6000	5505	.158
8000	5823	.159
10000	6141	.159
11850	6435	.159
11970(-7908)	6454* **	(.159)

\* EXTRAPOLATED PRESSURE  
\*\* MID POINT OF CASING PERFORATIONS



CASE 3411: Application of SEC OPER-  
ATING for a waterflood project,  
Lea County, New Mexico.