



WESTERN DIVISION OFFICE • WALL TOWERS WEST - MIDLAND, TEXAS • PHONE (915) 682-7316  
MAILING ADDRESS: P. O. DRAWER 1828 MIDLAND, TEXAS 79701

23 AM 8 26  
770 1100

DHC-75

Due Dec 14

November 16, 1970

Oil Conservation Commission  
State of New Mexico  
P. O. Box 2088  
Santa Fe, New Mexico 87501

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

Re: Gallagher "8" State No. 1  
Vacuum Northwest Penn & Wolfcamp Fields  
Lea County, New Mexico

Gentlemen:

Pennzoil United, Inc., hereby seeks the approval of the Oil Conservation Commission for down-hole commingling for the above captioned well, under the provisions of Rule 303, C of the Commission's Rules and Regulations.

This well was spudded on August 31, 1968 and reached a total depth of 11,825 feet on October 26, 1968. During the drilling of the well, oil was recovered on drill stem tests in both the lower Wolfcamp and Penn formations. The well was completed by setting 4 1/2-inch casing at 11,824 feet and perforating the Penn at 11,712-725 feet. On potential test the well flowed 433 BOPD, FTP 800# with a gas:oil ratio of 880 CFPB. The well was produced by flowing until April, 1970 when it was necessary to put it on the pump. The well was pumped for several months and then re-completed to the Wolfcamp. During June, 1970 average production from the Penn zone was 10 BOPD and no water.

The re-completion was accomplished by perforating 10,929-939 feet and treating with 5,500 gallons of acid. A bridge plug was set at 11,050 feet to separate the Wolfcamp and Penn completions. The Wolfcamp completion did not flow and has now produced for about 3 months on the pump. Average production for October, 1970 was 7 BOPD and approximately 25 BWPD. A plat is attached which shows the location of this well and other wells completed in the Vacuum Northwest Penn and Wolfcamp Fields.

In accordance with Rule 303, C, 2, the following data is submitted in support of this application:

(a) Operator: Pennzoil United, Inc.  
P. O. Drawer 1828  
Midland, Texas 79701

(b) Well Name and Location:

Gallagher "8" State No. 1  
660 FNL & 510 FWL of Sec. 8, T-17-S, R-34-E  
Lea County, New Mexico

(c) Pool Names:

Vacuum, Northwest Penn Field  
Vacuum, Northwest Wolfcamp Field

The well is not and has never been a dual completion.

(d) Production Tests:

Penn - June, 1970, Pump 10 BOPD, no water, GOR 2348 CFPB  
Wolfcamp - October, 1970, Pump 7 BOPD, 25 BWP, GOR 6080 CFPB

(e) A production decline curve is attached for the Penn zone. During the last two months of production from the Penn zone, the well pumped an average of 8.08 BOPD, no water.

During October, the Wolfcamp zone pumped an average of 6.71 BOPD plus 25 BWP. It is recommended that this production data be used as the basis for allocating 55% of the well's commingled production to the Penn and 45% to the Wolfcamp.

Forms C-103 and C-105 are attached which contain a complete summary of the well's completion history.

(f) Estimated Bottom Hole Pressure:

| <u>Penn:</u>     | <u>Date</u> | <u>BHP</u> | <u>Cum.</u><br><u>Production</u> | <u>Remarks</u>  |
|------------------|-------------|------------|----------------------------------|---|
|                  | 11-68       | 7900 psi   | 0 B0                             | Estimated based on offset wells.  |
|                  | 12-10-68    | 6405 psi   | 5,314 B0                         | 73 hrs S.I.   |
|                  | 7-28-69     | 2918 psi   | 28,044 B0                        | 75 hrs. S.I.  |
|                  | 11-70       | 2000 psi   | 35,000 B0                        | Estimated based on BHP vs. cumulative oil production curve.   |
| <u>Wolfcamp:</u> |             |            |                                  |   |
|                  | 11-68       | 3790 psi   | 0 B0                             | Based on drill stem test.   |
|                  | 11-70       | 2900 psi   | 659 B0                           | Estimated based on BHP vs. cumulative oil production curve for Sinclair "6" State No. 1 (BHP 2790 psi after producing 1027 B0). |

The above estimated pressures for the Penn and Wolfcamp reservoirs are static shut-in bottom hole pressures, and due to the low permeability of these reservoirs it would take several days for the pressure to build-up to these values after the well is shut in. If this application is approved, it is planned to pump the well with the pump set at approximately 11,690 feet. The pump will be of sufficient capacity to handle all the fluid entering the well bore. Under this condition the producing bottom hole pressure in the well bore for both zones will be very low and will for all practical purposes be equalized. Unless the well were shut down for several days, allowing the fluid level in the well bore to build-up, there would be little chance for cross-flow to take place between the zones.

- (g) Attached are copies of the Permian Corporation's run tickets which show the gravities of the oil for both zones - 38.7<sup>0</sup> API for the Penn and 39.7<sup>0</sup> API for the Wolfcamp. Also attached is a copy of an analysis of water recovered from the Wolfcamp zone. The Penn zone did not make water. Based on the above, no incompatibility problems are anticipated between the fluids produced from these reservoirs.
- (h) The price received for the oil from this well is \$3.31 per barrel for 40<sup>0</sup> API and above with a 2¢ reduction per <sup>0</sup> API below 40<sup>0</sup> API. The average price received for the Penn oil for four months before the re-completion was \$3.2702 per barrel. The average price received for the Wolfcamp oil since the re-completion has been \$3.2766 per barrel.
- (i) By a copy of this application the offset operators shown in the distribution have been notified of this proposed commingling.

Ownership of the Penn and Wolfcamp zones in this well is common as to working interest, royalty interest and overriding royalty interest.

The commingling of these zones will not jeopardize the efficiency of future secondary recovery operations. Neither reservoir is considered to be a prospect for secondary recovery.

It is respectfully requested that this application be approved.

Yours very truly,



B. C. Sinclair  
Petroleum Engineer

cc: NMOCC - Hobbs  
Monsanto Company  
Yates Petroleum Corporation  
Mobil Oil Corporation  
King Resources

Atlantic Richfield Company  
Southern Union Production Company

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# NEW MEXICO OIL CONSERVATION COMMISSION

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

NOV 23 AM 9 26

|  |
|--|
| 5a. Indicate Type of Lease<br>State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> |
| 5. State Oil & Gas Lease No.<br>E - 1085   |
| 7. Unit Agreement Name   |
| 8. Farm or Lease Name<br>Gallagher "8" State   |
| 9. Well No.<br>1   |
| 10. Field and Pool, or Wildcat<br>N.W. Vacuum Wolfcamp   |
| 12. County<br>Lea  |

|  |  |
|--|--|
| <b>SUNDRY NOTICES AND REPORTS ON WELLS</b><br><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> |  |
| 1. <input checked="" type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER-  |  |
| 2. Name of Operator<br>Pennzoil United, Inc.   |  |
| 3. Address of Operator<br>P. O. Drawer 1828 - Midland, Texas 79701   |  |
| 4. Location of Well<br>UNIT LETTER <u>D</u> <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>510</u> FEET FROM<br>THE <u>West</u> LINE, SECTION <u>8</u> TOWNSHIP <u>17-S</u> RANGE <u>34-E</u> NMPM.                         |  |
| 15. Elevation (Show whether DF, RT, GR, etc.)<br>4106 GL   |  |

|  |  |
|--|--|
| 16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data   |  |
| NOTICE OF INTENTION TO:<br>PERFORM REMEDIAL WORK <input type="checkbox"/><br>TEMPORARILY ABANDON <input type="checkbox"/><br>PULL OR ALTER CASING <input type="checkbox"/><br>OTHER <input type="checkbox"/> | SUBSEQUENT REPORT OF:<br>REMEDIAL WORK <input type="checkbox"/><br>COMMENCE DRILLING OPNS. <input type="checkbox"/><br>CASING TEST AND CEMENT JOB <input type="checkbox"/><br>OTHER <u>Plug back to Wolfcamp from Penn</u> <input checked="" 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.

8-5-70 Set BP @ 11,050'. Jet perf 2 holes at fllowing depths: 10,929-930', 931', 939', 977, & 978'.

8-6-70 Treated pfs. w/500 gals mud acid. Swabbed dry.

8-8-70 Re-treated w/1500 gals retarded acid. Swabbed all load of 79 bbls.

8-9-70 Swabbed 10 B0 & 70 BXW

8-10-70 Swabbed 5 B0 & 72 BXW

8-13-70 Squeezed all pfs. w/50 sx Incor cement. Maximum squeeze pressure 4,000#

8-14-70 Drilled out good cement through perforated interval.

8-15-70 Re-perforate 2 holes @ following depths: 10,929, 930, 931, 938, & 939'. Treated w/500 gals mud acid

8-16-70 Swabbed load & swbd dry. Re-treated w/2,000 gals 15% NE acid + 3,000 gals re-tarded acid. Swabbed back all load.

8-17-70 Swbd. 2 B0 & 66 BXW

8-20-70 Put well on pump

8-21-70 to 10-28-70. Testing on pump.

10-28-70 Completed potential test. Pumped 8.28 B0 + 25 BW 24 hrs, GOR 6080.

|  |   |                     |
|--|---|---------------------|
| 18. I hereby certify that the information above is true and complete to the best of my knowledge and belief. |   |                     |
| SIGNED <u>Charles H. Brown</u>   | TITLE <u>Mgr. Drilling &amp; Production</u> | DATE <u>11-5-70</u> |
| APPROVED BY <u>[Signature]</u>   | TITLE <u>SUPERVISOR</u>                     | DATE <u>11-5-70</u> |
| CONDITIONS OF APPROVAL, IF ANY:  |   |                     |

106 File

70 NOV 23 PM 8 26

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101  
Revised 1-1-65

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|  |
|--|
| 5A. Indicate Type of Lease   |
| STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> |
| 5. State Oil & Gas Lease No.   |
| E - 1085   |

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

|   |  |  |  |
|---|--|--|--|
| 1a. Type of Work  |  | 7. Unit Agreement Name                             |  |
| b. Type of Well<br>DRILL <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input checked="" type="checkbox"/>   |  | 8. Farm or Lease Name                              |  |
| OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>               |  | Gallagher "8" State                                |  |
| 2. Name of Operator<br>Pennzoil United, Inc.  |  | 9. Well No.<br>1                                   |  |
| 3. Address of Operator<br>P. O. Drawer 1828 - Midland, Texas 79701  |  | 10. Field and Pool, or Wildcat<br>N.W. Vacuum Penn |  |
| 4. Location of Well<br>UNIT LETTER <u>D</u> LOCATED <u>660</u> FEET FROM THE <u>North</u> LINE<br>AND <u>510</u> FEET FROM THE <u>West</u> LINE OF SEC. <u>8</u> TWP. <u>17-S</u> RGE. <u>34-E</u> NMPM |  | 12. County<br>Lea                                  |  |
| 19. Proposed Depth  |  | 19A. Formation                                     |  |
| 20. Rotary or C.T.  |  |  |  |
| 21. Elevations (Show whether DF, RT, etc.)<br>4106 GL   |  | 22. Approx. Date Work will start<br>Immediately    |  |

## PROPOSED CASING AND CEMENT PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | SACKS OF CEMENT | EST. TOP |
|--------------|----------------|-----------------|---------------|-----------------|----------|
|              |                |                 |               |                 |          |
|              |                |                 |               |                 |          |
|              |                |                 |               |                 |          |

Present zone (11,712-725' Penn) pumping 8 BO & 1 BW per day. - Propose to set BP @ 10,990' and perforate Lower Wolfcamp from 10,929 - 930 - 931 - 939 - 977 and 978'. Manually operated dual preventers will be used. - Operator may later request permission for downhole commingling of these two zones.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE, GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

Signed Charles G. Brown Title Mgr. of Drilling & Prod. Date August 4, 1970

(This space for State Use)

APPROVED BY Leslie A. Clements TITLE Oil & Gas Inspector DATE AUG 6 1970

CONDITIONS OF APPROVAL, IF ANY:

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LAND OFFICE

OPERATOR

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

NOV 13 11 21 AM '66

Form C-105  
Revised 1-1-65

5a. Indicate Type of Lease

State ☒ Fee ☐

5. State Oil &amp; Gas Lease No.

E - 1085

7. Unit Agreement Name

8. Farm or Lease Name

Gallagher "8" State

9. Well No.

1

10. Field and Pool, or Wildcat

Wildcat

12. County

Lea

1a. TYPE OF WELL

OIL WELL ☒GAS WELL ☐DRY ☐

OTHER

b. TYPE OF COMPLETION

NEW WELL ☒WORK OVER ☐DEEPEN ☐PLUG BACK ☐DIFF. RESVR. ☐

OTHER

2. Name of Operator

Pennzoil United, Inc.

3. Address of Operator

P. O. Drawer 1828 - Midland, Texas 79701

4. Location of Well

UNIT LETTER D LOCATED 660 FEET FROM THE North LINE AND 510 FEET FROMTHE West LINE OF SEC. 8 TWP. 17-S RGE. 34-E NMPM

15. Date Spudded

8-31-68

16. Date T.D. Reached

10-26-68

17. Date Compl. (Ready to Prod.)

11-8-68

18. Elevations (DF, RKB, RT, GR, etc.)

4106' GL

19. Elev. Casinghead

4106'

20. Total Depth

11,825'

21. Plug Back T.D.

11,770'

22. If Multiple Compl., How Many

23. Intervals Drilled By Rotary Tools

0 - 11,825'

Cable Tools

24. Producing Interval(s), of this completion - Top, Bottom, Name

11,712 - 11,725' Cisco

25. Was Directional Survey Made

No

26. Type Electric and Other Logs Run

Sonic, Gamma Ray, Neutron, Electric, Microlog

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#            | 379       | 17 1/2    | 345 SX           | None          |
| 8 5/8"      | 24# & 32#      | 4,312     | 11        | 490 SX           | None          |
| 4 1/2"      | 11.60# & 13.58 | 11,825    | 7 7/8     | 940 SX           | None          |

29. LINER RECORD

| SIZE | TOP | BOTTOM | SACKS CEMENT | SCREEN |
|------|-----|--------|--------------|--------|
|      |     |        |              |        |

30. TUBING RECORD

| SIZE   | DEPTH SET | PACKER SET |
|--------|-----------|------------|
| 2 3/8" | 11,675    | 11,675     |

31. Perforation Record (Interval, size and number)

11,712 - 716' .43" 5 holes  
 11,720 - 721' .43" 2 holes  
 11,723 - 725' .43" 3 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL | AMOUNT AND KIND MATERIAL USED |
|----------------|-------------------------------|
| 11,712 - 725'  | None                          |
|                |                               |
|                |                               |

33. PRODUCTION

Date First Production

11-8-68

Production Method (Flowing, gas lift, pumping - Size and type pump)

Flow

Well Status (Prod. or Shut-in)

Shut - in

Date of Test

11-8-68

Hours Tested

24

Choke Size

16/64"

Prod'n. For Test Period

Oil - Bbl.

433

Gas - MCF

381

Water - Bbl.

0

Gas - Oil Ratio

880:1

Flow Tubing Press.

800

Casing Pressure

Pkr

Calculated 24-Hour Rate

Oil - Bbl.

Gas - MCF

Water - Bbl.

Oil Gravity - API (Corr.)

40.8

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Vented

Test Witnessed By

Rodney C. Boyd

35. List of Attachments

Electric log, Hole deviation, DST results, Forms C-103

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

TITLE Manager of Production

DATE

11-12-68

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

### Northwestern New Mexico

**FORMATION RECORD (Attach additional sheets if necessary)**

| From | To    | Thickness<br>in Feet | Formation                         | From | To | Thickness<br>in Feet | Formation |
|------|-------|----------------------|-----------------------------------|------|----|----------------------|-----------|
| 0    | 300   | 300                  | Surface sand & shale              |      |    |                      |           |
| 300  | 4645  | 4345                 | Sd, Sh, Salt & Anhy &<br>Dolomite |      |    |                      |           |
| 4645 | 6018  | 1373                 | Dolo, Lm & Chert                  |      |    |                      |           |
| 6018 | 8075  | 2057                 | Dolo, Lm & Sand                   |      |    |                      |           |
| 8075 | 9870  | 1795                 | Sh, Lm, Dolo & Anhy               |      |    |                      |           |
| 9870 | 11825 | 1955                 | Lm, Dolo & Shale                  |      |    |                      |           |

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# NEW MEXICO OIL CONSERVATION COMMISSION

Nov 13 11 21 AM '68

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

70 Nov 23 AM 8 26

|                              |  |
|------------------------------|--|
| 5a. Indicate Type of Lease   | State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> |
| 5. State Oil & Gas Lease No. | E - 1085   |

## 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 checked="" type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER-                           | 7. Unit Agreement Name                       |
| 2. Name of Operator<br>Pennzoil United, Inc.  | 8. Farm or Lease Name<br>Gallagher "S" State |
| 3. Address of Operator<br>P. O. Drawer 1328 - Midland, Texas 79701  | 9. Well No.<br>1                             |
| 4. Location of Well<br>UNIT LETTER D FEET FROM THE 660 LINE AND 510 FEET FROM<br>West 8 17-S 34-E<br>THE LINE, SECTION TOWNSHIP RANGE NMPM. | 10. Field and Pool, or Wildcat<br>Wildcat    |
| 15. Elevation (Show whether DF, RT, GR, etc.)<br>4105 GL  | 12. County<br>Lea                            |

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 checked="" 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 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.

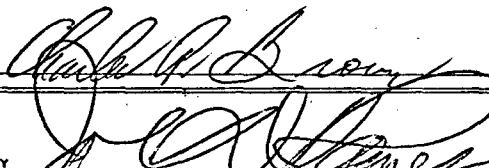
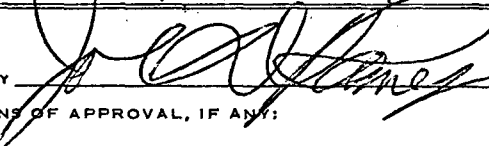
9- 9-68 Start drilling 7 7/8" hole @ 4312'

10-26-68 T. D. 11,825'

10-27-68 Ran 367 jts. of 4 1/2" 11.6# & 13.50# csg. set @ 11,824'. - D.V. tool @ 5112'. Cemented w/740 sx Class "C" 2% gel, 8# salt per sack, 1/4# flocele & 3/4 of 1% CFR-2. Cemented 2nd stage w/200 sx Incor 6% gel, 8# salt per sack & 1/4# flocele. Plug down @ 9:00 P.M. 10-27-68.

11- 4-68 Drill out D.V. tool at 5112'. Test csg. to 2,000 psi held 1 hr O. K. Drill out approximately 300' hard cement 11,470' to 11,770' - Test complete casing string to 2,000 psi for 1 hr held O.K.

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

|   |                             |               |
|---|-----------------------------|---------------|
| SIGNED       | TITLE Manager of Production | DATE 11-12-68 |
| APPROVED BY  | TITLE                       | DATE          |
| CONDITIONS OF APPROVAL, IF ANY:   |                             |               |



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# NEW MEXICO OIL CONSERVATION COMMISSION

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

OCT 7 9 10 AM '68

NOV 23 AM 8:26

|  |
|--|
| 5a. Indicate Type of Lease<br>State <input checked="" type="checkbox"/> Fee <input type="checkbox"/> |
| 5. State Oil & Gas Lease No.<br>E - 1085   |
| 7. Unit Agreement Name   |
| 8. Farm or Lease Name<br>Gallagher "8" State   |
| 9. Well No.<br>1   |
| 10. Field and Pool, or Wildcat<br>Wildcat  |
| 12. County<br>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. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>  |
| 2. Name of Operator<br>Pennzoil United, Inc.  |
| 3. Address of Operator<br>P. O. Drawer 1828 - Midland, Texas 79701  |
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| 15. Elevation (Show whether DF, RT, GR, etc.)<br>4106 GL  |

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 checked="" 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 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 1703.

8-31-68 Spudded 17½" hole at 3:00 P.M. - Drilled to 380' - Ran 11 jts. of 13 3/8" OD, 48# csg. to 379'. - Cement w/195 sx Class "A" 6% gel plus 150 sx Class "A" 2% CaCl. Plug down 10:45 P.M. - Cement circulated O.K.

9-1-68 After 19 hrs WOC, tested csg. w/1,000# for 30 min - O.K.

9-7-68 Drilled 11" hole to 4312' - Ran 8 5/8", 24# & 32# csg. to 4312'. Cement w/340 sx Class "H" 50/50 posmix 6% gel w/ 31# salt per sack plus 150 Sx Class "C" w/8# salt per sack. Plug down at 4:15 P.M. - Ran temperature survey. - Top cement 2970'.

9-8-68 After 24 hrs - Tested csg. w/1400# for 30 min - O.K.

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

SIGNED [Signature] TITLE Drilling Superintendent DATE 10-4-68

APPROVED BY [Signature] TITLE  DATE

CONDITIONS OF APPROVAL, IF ANY:

PRODUCER'S COPY

**THE PERMIAN CORPORATION**  
MIDLAND, TEXAS

|   |     |          |         |   |  |             |  |                        |  |
|---|-----|----------|---------|---|--|-------------|--|------------------------|--|
| OWNER <i>Pennsylvanian</i>  |     |          |         |   |  |             |  |                        |  |
| WELL NOS.   |     |          |         |   |  |             |  |                        |  |
| LEASE <i>Hallager 8</i>   |     |          |         |   |  |             |  |                        |  |
| STATION NO.   | MO. | DAY      | YR.     | RUN TKT. NO.  |  |             |  |                        |  |
| 65  | 10  | 13       | 70      | 1015557   |  |             |  |                        |  |
| LEASE NO.   |     | TANK NO. |         | FIELD   |  |             |  |                        |  |
| 565805  |     | 40745    |         |   |  |             |  |                        |  |
| TANK SIZE   |     | GAUGE    |         | OIL LEVEL   |  | TEMP.       |  | CALCULATIONS           |  |
| 500   |     |          |         |   |  |             |  |                        |  |
| Gau.  | Ft. | In.      | 1/4 In. |   |  |             |  |                        |  |
| 1ST   | 7   | 3        | 0 1/4   | 28  |  | 240.45      |  | 80.28                  |  |
| HGT. OF CON.  |     |          |         | 2ND   |  | 25          |  | 160.17                 |  |
| B. S. & W. LEVEL  |     |          |         | OBS. GRAVITY  |  | TEMPERATURE |  |                        |  |
| 1ST - 5 1/4   |     |          |         | 41.0  |  | 76          |  |                        |  |
| 2ND - 5 1/4   |     |          |         | 3.10%   |  | 39.7        |  | ESTIMATED BBLs. 158.27 |  |
| OIL MOVED BY  |     |          |         | POWER FURNISHED BY  |  |             |  |                        |  |
| Pump Grav. Truck  |     |          |         | P. L. Co. Other   |  |             |  |                        |  |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |     |          |         | <input type="checkbox"/> <input checked="" type="checkbox"/> 100% |  |             |  |                        |  |
| REMARKS <i>988127</i>   |     |          |         |   |  |             |  |                        |  |

|                     |                   |                           |
|---------------------|-------------------|---------------------------|
| TURNED ON           |                   |                           |
| TIME <i>3:05 PM</i> | DATE <i>10-13</i> | GAUGER <i>C. L. Lison</i> |
| OFF SEAL            |                   | OWNERS WITNESS            |
| SHUT OFF            |                   |                           |
| TIME <i>3:30 PM</i> | DATE <i>10-13</i> | GAUGER <i>C. L. Lison</i> |
| ON SEAL             |                   | OWNERS WITNESS            |

PRODUCER'S COPY

**THE PERMIAN CORPORATION**  
MIDLAND, TEXAS

|   |     |          |         |   |  |             |  |                        |  |
|---|-----|----------|---------|---|--|-------------|--|------------------------|--|
| OWNER <i>Pennsylvanian</i>  |     |          |         |   |  |             |  |                        |  |
| WELL NOS.   |     |          |         |   |  |             |  |                        |  |
| LEASE <i>Hallager 8 State</i>   |     |          |         |   |  |             |  |                        |  |
| STATION NO.   | MO. | DAY      | YR.     | RUN TKT. NO.  |  |             |  |                        |  |
| 65  | 5   | 28       | 70      | 1366634   |  |             |  |                        |  |
| LEASE NO.   |     | TANK NO. |         | FIELD   |  |             |  |                        |  |
| 565805  |     | 40745    |         |   |  |             |  |                        |  |
| TANK SIZE   |     | GAUGE    |         | OIL LEVEL   |  | TEMP.       |  | CALCULATIONS           |  |
| 500   |     |          |         |   |  |             |  |                        |  |
| Gau.  | Ft. | In.      | 1/4 In. |   |  |             |  |                        |  |
| 1ST   | 15  | 5        | - 1/4   | 92  |  | 511.01      |  | 44.29                  |  |
| HGT. OF CON.  |     |          |         | 2ND   |  | 14          |  | 466.72                 |  |
| B. S. & W. LEVEL  |     |          |         | OBS. GRAVITY  |  | TEMPERATURE |  |                        |  |
| 1ST - 6 1/4   |     |          |         | 41.0  |  | 90          |  |                        |  |
| 2ND - 6 1/4   |     |          |         | 4.10%   |  | 38.7        |  | ESTIMATED BBLs. 457.47 |  |
| OIL MOVED BY  |     |          |         | POWER FURNISHED BY  |  |             |  |                        |  |
| Pump Grav. Truck  |     |          |         | P. L. Co. Other   |  |             |  |                        |  |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |     |          |         | <input type="checkbox"/> <input checked="" type="checkbox"/> WOTC |  |             |  |                        |  |
| REMARKS <i>980164</i>   |     |          |         |   |  |             |  |                        |  |

|                     |                  |                            |
|---------------------|------------------|----------------------------|
| TURNED ON           |                  |                            |
| TIME <i>1:15 PM</i> | DATE <i>5-28</i> | GAUGER <i>C. Johnson</i>   |
| OFF SEAL            |                  | OWNERS WITNESS             |
| SHUT OFF            |                  |                            |
| TIME <i>3:00 PM</i> | DATE <i>5-29</i> | GAUGER <i>Steve Brooks</i> |
| ON SEAL             |                  | OWNERS WITNESS             |

PRODUCER'S COPY



THE PERMIAN CORPORATION  
MIDLAND, TEXAS

|   |     |   |         |              |  |                        |  |              |  |
|---|-----|---|---------|--------------|--|------------------------|--|--------------|--|
| OWNER <i>Pennsylv United</i>  |     |   |         |              |  |                        |  |              |  |
| WELL NOS.   |     |   |         |              |  |                        |  |              |  |
| LEASE <i>Hallager 8</i>   |     |   |         |              |  |                        |  |              |  |
| STATION NO.   | MO. | DAY   | YR.     | RUN TKT. NO. |  |                        |  |              |  |
| 65  | 10  | 13  | 70      | 1015557      |  |                        |  |              |  |
| LEASE NO.   |     | TANK NO.  |         | FIELD        |  |                        |  |              |  |
| 565805  |     | 40745   |         |              |  |                        |  |              |  |
| TANK SIZE   |     | GAUGE   |         | OIL LEVEL    |  | TEMP.                  |  | CALCULATIONS |  |
| 500   |     |   |         |              |  |                        |  |              |  |
| Gau.  | Ft. | In.   | 1/4 In. |              |  |                        |  |              |  |
| 1   | 7   | 3   | 0 1/4   | 28           |  |                        |  | 240.45       |  |
| HGT. OF CON.  |     |   |         |              |  |                        |  | 80.28        |  |
|   |     |   |         |              |  |                        |  | 160.17       |  |
| B. S. & W. LEVEL  |     | OBS. GRAVITY  |         | TEMPERATURE  |  |                        |  |              |  |
| 1ST - 5 1/4   |     | 41.0  |         | 76           |  |                        |  |              |  |
| 2ND - 5 1/4   |     | 3 1/10 %  |         | 39.7         |  | ESTIMATED BBLs. 158.27 |  |              |  |
| OIL MOVED BY  |     | POWER FURNISHED BY  |         |              |  |                        |  |              |  |
| Pump Grav. Truck  |     | P. L. Co. Other   |         |              |  |                        |  |              |  |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |     | <input type="checkbox"/> <input checked="" type="checkbox"/> 100% |         |              |  |                        |  |              |  |
| REMARKS   |     |   |         |              |  |                        |  |              |  |
| 988127  |     |   |         |              |  |                        |  |              |  |

|           |                |                   |
|-----------|----------------|-------------------|
| TURNED ON |                |                   |
| TIME      | DATE           | GAUGER            |
| 3:05 PM   | 10-13          | <i>C. Johnson</i> |
| OFF SEAL  | OWNERS WITNESS |                   |
| SHUT OFF  |                |                   |
| TIME      | DATE           | GAUGER            |
| 3:30 PM   | 10-13          | <i>C. Johnson</i> |
| ON SEAL   | OWNERS WITNESS |                   |

PRODUCER'S COPY



THE PERMIAN CORPORATION  
MIDLAND, TEXAS

|   |     |   |         |              |  |                        |  |              |  |
|---|-----|---|---------|--------------|--|------------------------|--|--------------|--|
| OWNER <i>Pennsylv United</i>  |     |   |         |              |  |                        |  |              |  |
| WELL NOS.   |     |   |         |              |  |                        |  |              |  |
| LEASE <i>Hallager 8 State</i>   |     |   |         |              |  |                        |  |              |  |
| STATION NO.   | MO. | DAY   | YR.     | RUN TKT. NO. |  |                        |  |              |  |
| 65  | 5   | 28  | 70      | 1366634      |  |                        |  |              |  |
| LEASE NO.   |     | TANK NO.  |         | FIELD        |  |                        |  |              |  |
| 565805  |     | 40745   |         |              |  |                        |  |              |  |
| TANK SIZE   |     | GAUGE   |         | OIL LEVEL    |  | TEMP.                  |  | CALCULATIONS |  |
| 500   |     |   |         |              |  |                        |  |              |  |
| Gau.  | Ft. | In.   | 1/4 In. |              |  |                        |  |              |  |
| 1   | 15  | 5   | - 1/4   | 92           |  |                        |  | 511.01       |  |
| HGT. OF CON.  |     |   |         |              |  |                        |  | 44.29        |  |
|   |     |   |         |              |  |                        |  | 466.72       |  |
| B. S. & W. LEVEL  |     | OBS. GRAVITY  |         | TEMPERATURE  |  |                        |  |              |  |
| 1ST - 6 1/4   |     | 41.0  |         | 90           |  |                        |  |              |  |
| 2ND - 6 1/4   |     | 4 1/10 %  |         | 38.7         |  | ESTIMATED BBLs. 457.47 |  |              |  |
| OIL MOVED BY  |     | POWER FURNISHED BY  |         |              |  |                        |  |              |  |
| Pump Grav. Truck  |     | P. L. Co. Other   |         |              |  |                        |  |              |  |
| <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |     | <input type="checkbox"/> <input checked="" type="checkbox"/> WOTC |         |              |  |                        |  |              |  |
| REMARKS   |     |   |         |              |  |                        |  |              |  |
| 980164  |     |   |         |              |  |                        |  |              |  |

|           |                |                    |
|-----------|----------------|--------------------|
| TURNED ON |                |                    |
| TIME      | DATE           | GAUGER             |
| 1:15 PM   | 5-28           | <i>C. Johnson</i>  |
| OFF SEAL  | OWNERS WITNESS |                    |
| SHUT OFF  |                |                    |
| TIME      | DATE           | GAUGER             |
| 2:00 PM   | 5/29           | <i>Gene Brooks</i> |
| ON SEAL   | OWNERS WITNESS |                    |

## HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY

MIDLAND DIVISION

OCT 16 1968

## LABORATORY WATER ANALYSIS

No. W2-390-68

To Pennzoil ~~MIDLAND~~ United, Inc.

Date October 15, 1968

Box 1828

Midland, Texas 79701

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by \_\_\_\_\_ Date Rec. 10-11-68

Well No. Gallagher St. "8" #1 Depth 10,991.5 Formation Wolfcamp

County Lea Field W/C Source DST #8

|                                  | Sampler     | Top of Rec.     | Pit   |
|----------------------------------|-------------|-----------------|-------|
| Resistivity                      | .130 @ 77 F |                 |       |
| Specific Gravity                 | 1.048       |                 |       |
| pH                               | 6.8         |                 |       |
| Calcium (Ca)                     | 2,750       |                 | *MPL  |
| Magnesium (Mg)                   | 660         |                 |       |
| Chlorides (Cl)                   | 42,500      |                 | 1,500 |
| Sulfates (SO <sub>4</sub> )      | 440         |                 |       |
| Bicarbonates (HCO <sub>3</sub> ) | 245         |                 |       |
| Soluble Iron (Fe)                | 115         |                 |       |
| API Gravity                      |             | 38.5 @ 60 F     |       |
| B S & W                          |             | Less than 0.1 % |       |

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: Frank Whitfield

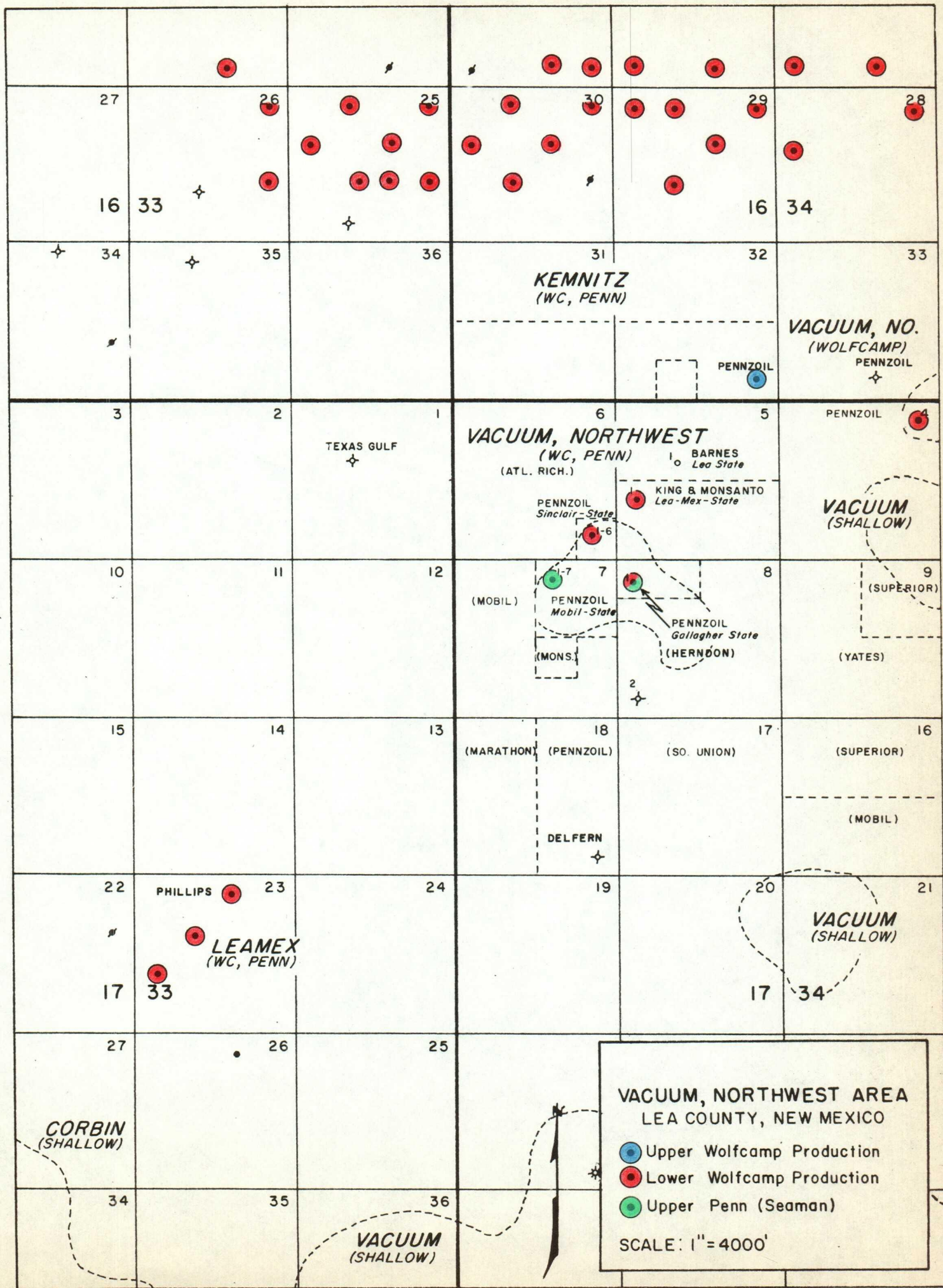
HALLIBURTON COMPANY

cc:

By Frank Whitfield  
DIVISION CHEMIST

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## LEA COUNTY, NEW MEXICO

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19 68

19 69

19 70

19\_71

1972

**K<sub>+</sub>** 5 YEARS BY MONTHS  
X 3 LOG CYCLES

MONTHLY OIL PRODUCTION - BBLs.