

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF CONTINENTAL OIL COMPANY FOR
AN ADMINISTRATIVE ORDER APPROVING
COMMINGLING OF PRODUCTION IN
JICARILLA 28 WELL NO. 1 LOCATED
IN THE UNDESIGNATED GALLUP AND
UNDESIGNATED DAKOTA POOLS, RIO
ARRIBA COUNTY, NEW MEXICO

CAUSE NO. _____
ORDER NO. _____
DOCKET NO. _____

DHC-57
Due Sept 20

A P P L I C A T I O N

COMES NOW CONTINENTAL OIL COMPANY, a Delaware corporation, (hereinafter called "Applicant"), authorized to do business in the State of New Mexico, and makes application to the Secretary-Director of the State of New Mexico Oil Conservation Commission for approval to commingle in the well bore the Undesignated Gallup and the Undesignated Dakota zones in the dually completed Jicarilla 28 Well No. 1 in accordance with Rule 303 C as set out in Case No. 4104, Order No. R-3845.

In support of this application, Applicant respectfully states and shows as follows:

1. Attached as Exhibit "A" is a map showing all drilling, producing and plugged and abandoned wells in the sixteen section Continental Oil Company West Lindrith Block which is outlined in red. The red arrow on Exhibit "A" points to Jicarilla 28 Lease, Well No. 1, located in the SE $\frac{1}{4}$ of Section 28, Township 25 North, Range 4 West, Rio Arriba County, New Mexico.

2. Applicant operates eleven (11) dually completed Gallup-Dakota wells in the West Lindrith Block and has location for over forty (40) additional similar wells on 160 acre spacing. The present wells as now operated are commingled down hole in accordance with Rule 112 A, Section VI. The average projected ultimate recovery from the aforementioned eleven wells is 60,000 barrels of oil and 450 MMCF gas using present producing methods. The eleven wells on an average will fail by \$6,000 per well to repay drilling, completing and operating costs. This payout basis is before federal income taxes.

3. The present method of operating commingled zones in the aforementioned wells will lead to early abandonment of the wells due to uneconomic low rates of production.

4. Applicant's engineers have calculated that by removing the present check valve, gas lift valve and packer from the well bore, shown on Exhibit "B", attached, the operating pressure can be reduced and both daily production and ultimate oil recovery can be increased. The production from Jicarilla 28 Well No. 1 during July, 1970, totaled 388 barrels of oil and 7,091 MCF of gas. It is estimated that if this application is approved, production from the well will increase to 18 barrels of oil per day. Reserves for an average commingled well at Jicarilla will be increased by approximately 15,000 barrels of oil. With such increases in production and reserves, the Jicarilla commingled wells would return a small profit to the owner prior to abandonment. If proposed improved stimulation procedures are successful and the present type of commingling application is approved for all of the aforementioned eleven wells, Continental Oil Company has plans to drill an additional ten wells on the West Lindrith Block after the economic projections are confirmed through actual production.

5. Removal of the packer, gas lift valve and check valve from the well bore and equipping Jicarilla 28 Well No. 1 as shown on Exhibit "C", will enable the operator to operate the well five additional producing days per year and reduce operating costs by an estimated \$500 per year. The present packer leakage tests with the contract wire line services required for such tests now require an average of five days down time and the aforementioned \$500 for contract services. Elimination of the packer leakage tests requirement by the Commission will increase the profitability of operations in the West Lindrith Area.

6. Continental Oil Company, whose address is 152 North Durbin Street, Casper, Wyoming 82601, is the operator of the well for which this application is made.

7. The Jicarilla 28 Lease covers a four section block of Jicarilla Apache Indian leases including Sections 27, 28, 33 and 34, Township 25 North, Range 4 West, Rio Arriba County, New Mexico. Jicarilla 28 Well No. 1 is located 1,980 feet from the south line and 1,980 feet from the east line of Section 28, Township 25 North, Range 4 West, Rio Arriba County.

8. Jicarilla 28 Well No. 1 is completed in the Undesignated Gallup and Undesignated Dakota pools. Both zones are classified as oil producing zones. The well is now commingled in accordance with the New Mexico Oil Conservation Commission Order No. 2824-A.

9. Attached as Exhibits "D₁" and "D₂" are C-116 forms for 24 hour productivity tests dated August 2, 1970 for the Gallup and Dakota zones. The tests are the latest in Applicant's files for the Jicarilla 28 Well No. 1.

10. Attached as Exhibits "E₁", "E₂" and "E₃" are production decline curves for Jicarilla 28 Well No. 1. Exhibit "E₁" is a curve for the Dakota zone; Exhibit "E₂" is a curve for the Gallup zone; and Exhibit "E₃" is a production decline curve for the total production from the well. The curves show both oil and gas production.

11. Jicarilla 28 Well No. 1 is now artificially lifted from both zones through use of an intermittent plunger lift. The estimated shut-in stabilized bottom hole pressure is 1,500 psi for the Gallup zone and 2,100 psi for the Dakota zone. The operating bottom hole pressure for a similar installation has been measured at Jicarilla 28 Well No. 6. There the operating pressure, at 7,188 feet KB, was found to vary from a low of 425 psi to a high of 850 psi during operation of the plunger lift and gas lift valves. Applicant states that due to the extremely low permeability values for both zones, no significant volume of oil or gas will migrate from the high pressure Dakota zone to the lower pressure Gallup zone during normal operations or when the well is shut-in for short periods during emergencies.

12. Oil produced from the Gallup zone has a gravity of 44.4 degrees API and oil from the Dakota zone has a gravity of 48.4 degrees API. The two crude oils are compatible in the well bore and they have been produced as a commingled stream in the past with no problems.

13. Continental Oil Company owns all of the working interest for the Gallup and Dakota zones under the Jicarilla 28 Lease. The Jicarilla Apache Indian Tribe retained a 12½ percent royalty interest under the Jicarilla 28 Lease. There are no overriding royalty interest owners for the subject lease. The ownership of the royalty interest and the working interest for both the Gallup and Dakota production from the Jicarilla 28 Lease is common.

14. Attached as Exhibit "F" is a computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams. This computation is similar to computations submitted to the Commission for previous applications.

15. Applicant states that in its opinion down hole commingling of production from the Gallup and Dakota zones, as herein proposed, will not in any way jeopardize the efficiency of any future secondary recovery operation for either the Gallup or Dakota zones.

16. Applicant has notified all offset operators and the United States Geological Survey of this application in writing by mailing such parties copies of this application at the same time the application was mailed to the New Mexico Oil Conservation Commission.

17. Granting the application herein requested will be in the public interests, protect correlative rights and increase the ultimate recovery of valuable natural resources.

For the foregoing reasons, Applicant hereby requests approval of the down hole commingling of production in the well bore at Jicarilla 28 Well No. 1.

WHEREFORE, Applicant requests that this matter be considered by the Secretary-Director of the New Mexico Oil Conservation Commission and that this application be granted.

Respectfully submitted,

CONTINENTAL OIL COMPANY

By John W. Wolfe
for W. C. Blackburn
Division Manager

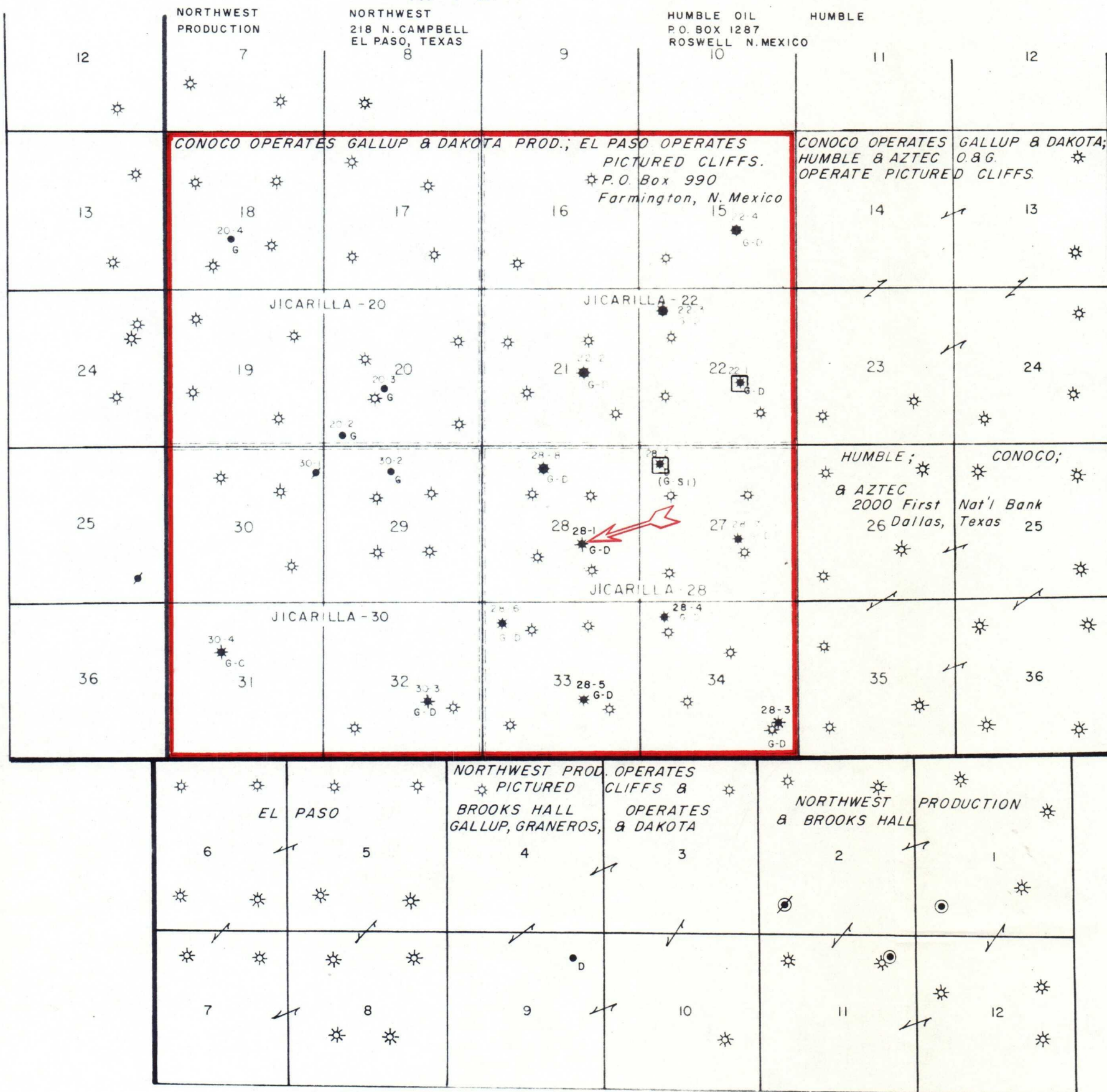


Subscribed and sworn to before me this 28th day of August, 1970, by John W. Wolfe, Jr.

My commission expires _____ My commission expires April 23, 1973

Mary J. Aragon
Notary Public

R. 4 W.



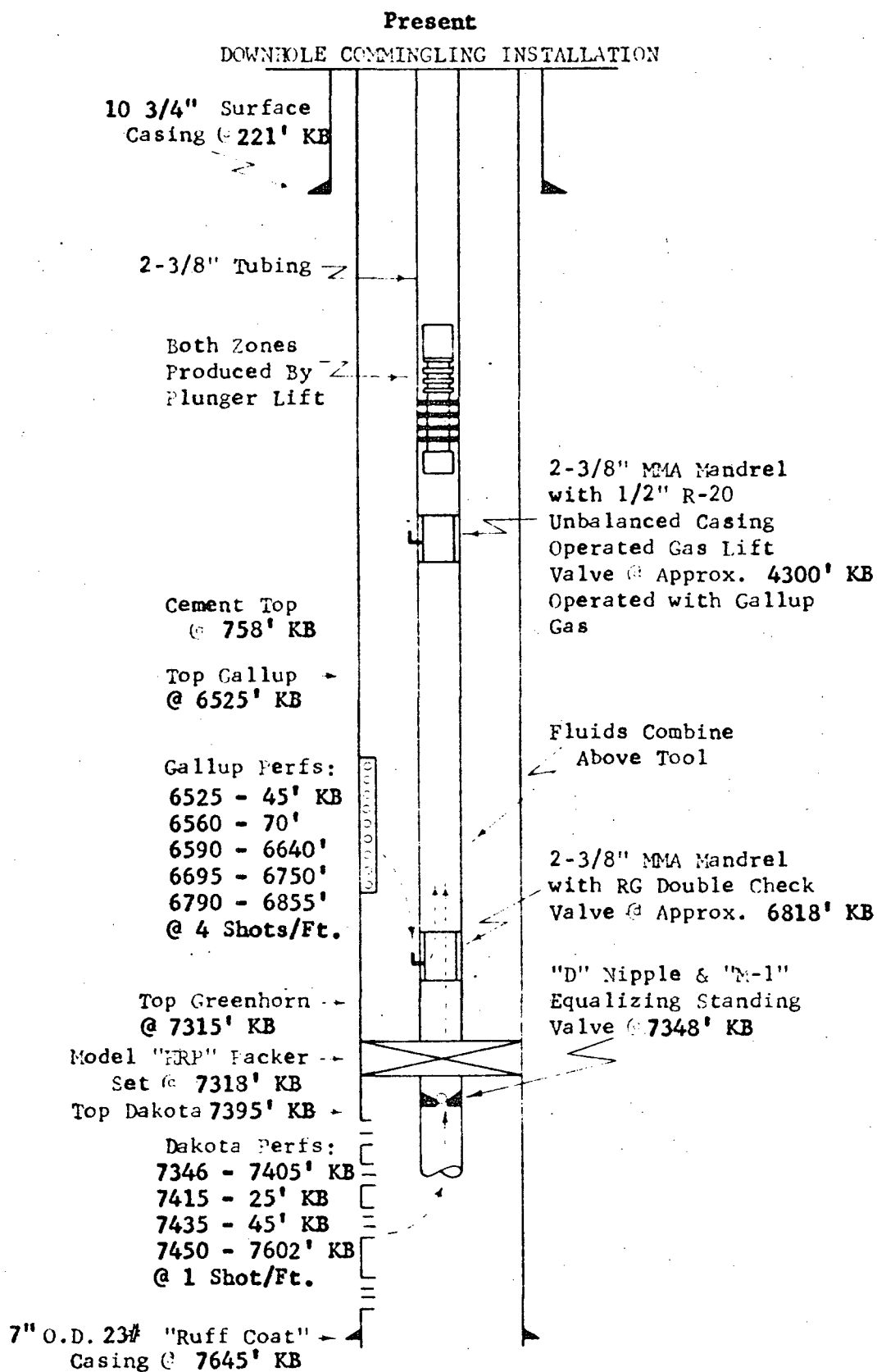
- LEGEND -

- G GALLUP PRODUCING WELL
- D DAKOTA PRODUCING WELL
- ★ G-C GALLUP (Oil)-CHACRA (Gas) DUAL
- ★ G-D GALLUP (Oil)-DAKOTA (Oil) DUAL
- ★ GAS PRODUCING WELL (ICTURED CLIFFS)
- ⚡ SHUT-IN WELL
- ⊙ DUAL GALLUP - GRANEROS
- ⊠ GALLUP (Oil)-DAKOTA (Oil)-Seperate Strings of Casing.

WEST LINDRITH BLOCK
JICARILLA APACHE LEASES
 Rio Arriba County, New Mexico

EXHIBIT "A"

Engineer: J.A. Mozza Drawn by: NFD 12-12-67
 PRODUCTION DEPARTMENT
 CONTINENTAL OIL COMPANY 1-69
 8-70



| <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> CONTINENTAL OIL COMPANY PRODUCTION DEPARTMENT CASPER DIVISION </div> </div> | | |
|--|-------------------------------|----------------------|
| Field/Unit: | WEST LINDRITH | |
| Structure: | Exhibit "B" | Contour Int. |
| Isopach | | Contour Int. |
| Other: | 28-1 Well. | |
| County: Rio Arriba | State: New Mexico | |
| Engineer: J. A. Mazza | Geology by: | Date: 8-25-70 |
| Drafted by: RWJ | Well Status Posted to: | |
| SCALE = No Scale | | |

**PROPOSED
DOWNHOLE COMMINGLING INSTALLATION**

GL Elevation: +6926'
KB Elevation: +6938'

10-3/4" Surface
Casing @ 221' KB

Cemented with 200 Sacks
Regular to Surface

Cement Top @ 758' KB

2-3/8" Tubing

Both Zones
Produced By
Plunger Lift

Stage Collar at 3338' KB

Cement Top
@ 3150' KB

Top Gallup
6525' KB

Gallup Perfs:
6525' - 45' KB
6560' - 70'
6590' - 6640'
6695' - 6750'
6790' - 6855'
@ 4 Shots/Ft.

Top Greenhorn
7315' KB

Top Dakota 7395' KB

Dakota Perfs:
7396' - 7405' KB
7415' - 25'
7435' - 45'
7450' - 7602'
7606' - 7617'
@ 1 Shot/Ft.

"D" Nipple & "M-1" Equalizing
Standing Valve at 7612' KB

Tubing At 7642' KB

PBTD At 7624' KB

TD At 7650' KB

7" O.D. 23# Casing @ 7645' KB
Cemented with 300 Sacks Regular
300 Sacks Stratocrete

Centralizers Located 10' & 60' Above Casing Setting
Depth and 90' Thereafter to 6555' KB; Also One Cen-
tralizer 30' Above and 30' Below Stage Collar.

CONTINENTAL OIL COMPANY
PRODUCTION DEPARTMENT
Casper, Wyoming



**WEST LINDRITH
EXHIBIT "C"**

Proposed Downhole Commingling Installation—Jicarilla 28-1

County: Rio Arriba

State: New Mexico

Engineer: J.A. Mozzo

Draftsman: B.S.

Date: 8-24-70

Scale = No Scale

Well Status Posted to:

NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS

C-115
Revised 1-1-65

| | | | | | |
|------------------------------|--|---|--|--------------|--|
| Operator | | Pool | | County | |
| Continental Oil Company | | Undesignated Gallup | | Rio Arriba | |
| Address | | 152 North Durbin, Casper, Wyoming 82601 | | TEST - (X) | |
| LEASE NAME | | Jicarilla 28 | | DATE OF TEST | |
| WELL NO. | | U | | S | |
| LOCATION | | T | | R | |
| DATE OF TEST | | 8-02-70 | | P | |
| CHOKE SIZE | | 25N | | 4W | |
| TBG. PRESS. | | 25N | | 4W | |
| DAILY ALLOWABLE | | 8-06-70 | | P | |
| LENGTH OF TEST HOURS | | 8-08-70 | | P | |
| WATER BBLs. | | 8-10-70 | | P | |
| GRAV. OIL BBLs. | | 8-12-70 | | P | |
| OIL BBLs. | | 8-14-70 | | P | |
| GAS M.C.F. | | 8-16-70 | | P | |
| GAS - OIL RATIO CU. FT./BBL. | | 24 | | 0 | |
| PROD. DURING TEST | | 13 | | 99 | |
| GAS - OIL RATIO | | 7 | | 28 | |
| GAS - OIL RATIO | | 5 | | 23 | |
| GAS - OIL RATIO | | 22 | | 90 | |
| GAS - OIL RATIO | | 5 | | 91 | |
| GAS - OIL RATIO | | 5 | | 40 | |
| GAS - OIL RATIO | | 27 | | 67 | |
| GAS - OIL RATIO | | 24 | | 2431 | |

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

EXHIBIT "D"

Original Signed By
C. H. CALVERT

Senior Analyst

8-27-70

M0000(2), File, WS

(Date)

OS 116.
Nov 1941-1-1-6,5

(fare)

EXHIBIT "F"

JICARILLA 28 WELL NO. 1
UNIT LETTER J, SECTION 28, T25N, R4W
RIO ARriba COUNTY, NEW MEXICO

Commingling Data
Month of July, 1970

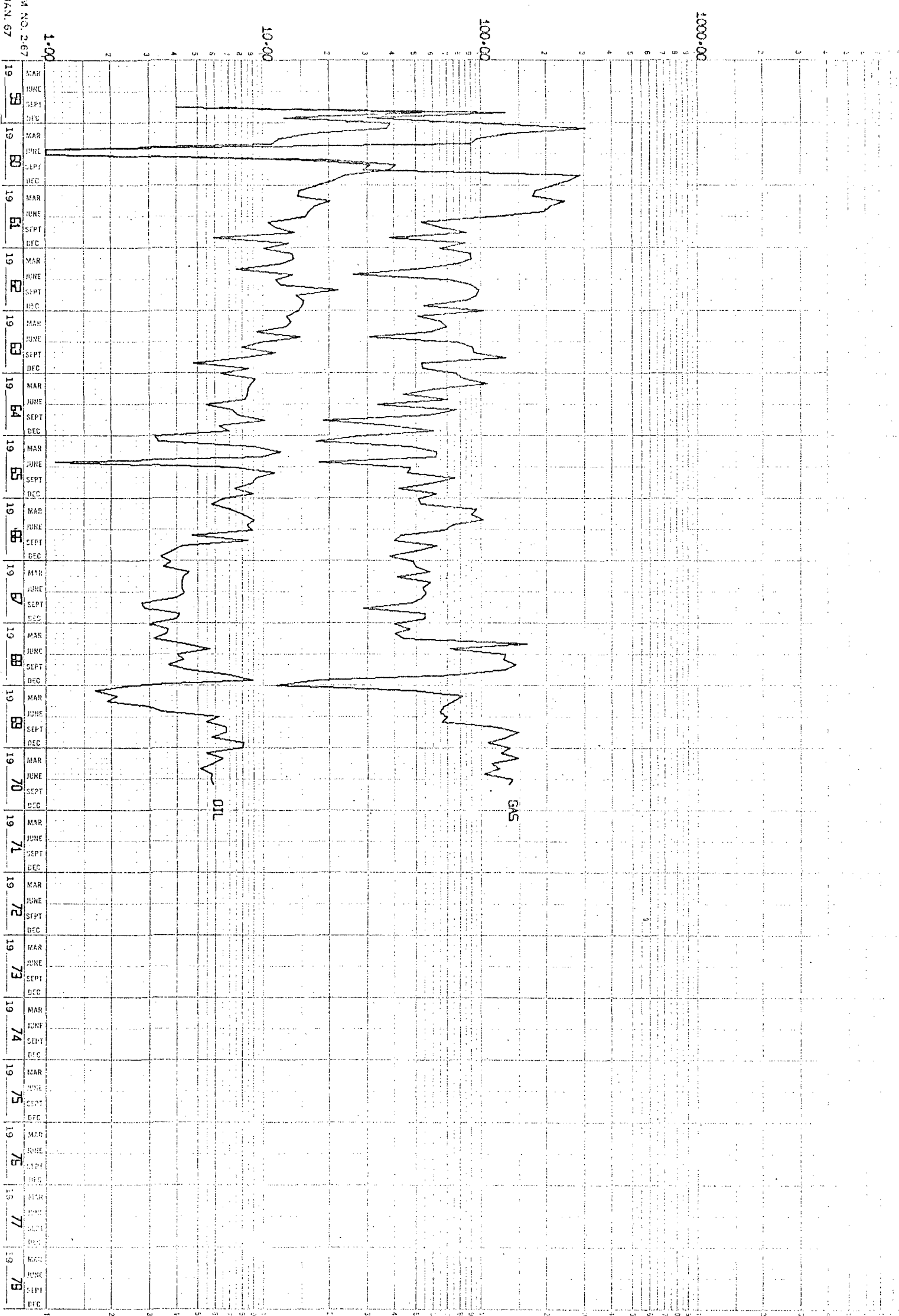
| <u>Producing Data</u> | <u>Gravity</u> | <u>Value</u> | <u>Volume</u> |
|-----------------------|----------------|--------------|---------------|
| Gallup | 44.4 | \$2.85 | 207 BOPM |
| Dakota | 48.4 | 2.85 | 181 BOPM |
| Commingled | 46.0 | 2.85 | 388 BOPM |

Crude Purchaser: Shell Pipeline Company - Farmington, New Mexico

Royalty Interest Owner: Jicarilla Apache Tribe

Date: August 26, 1970

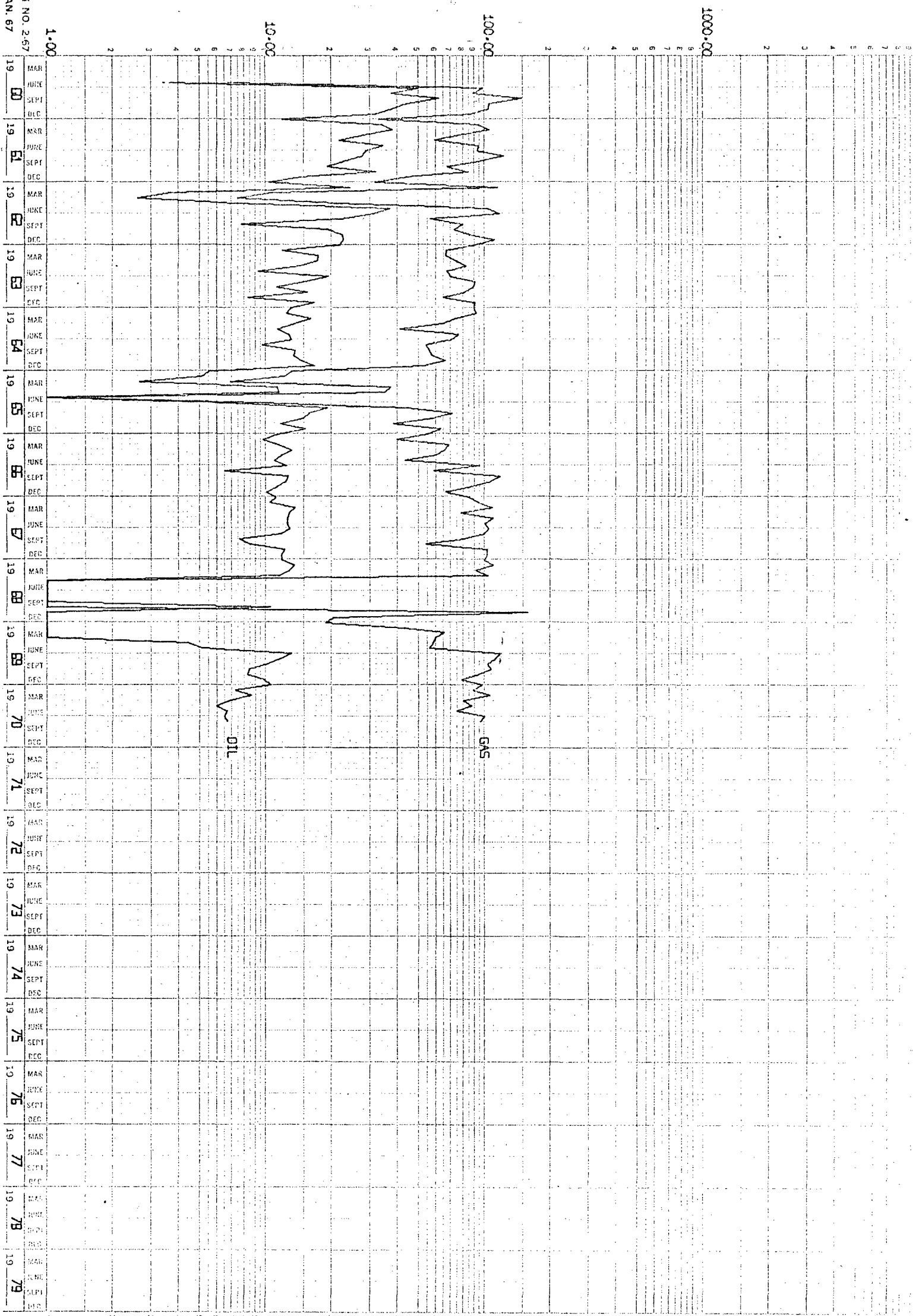
BBLS OR MCF/DAY



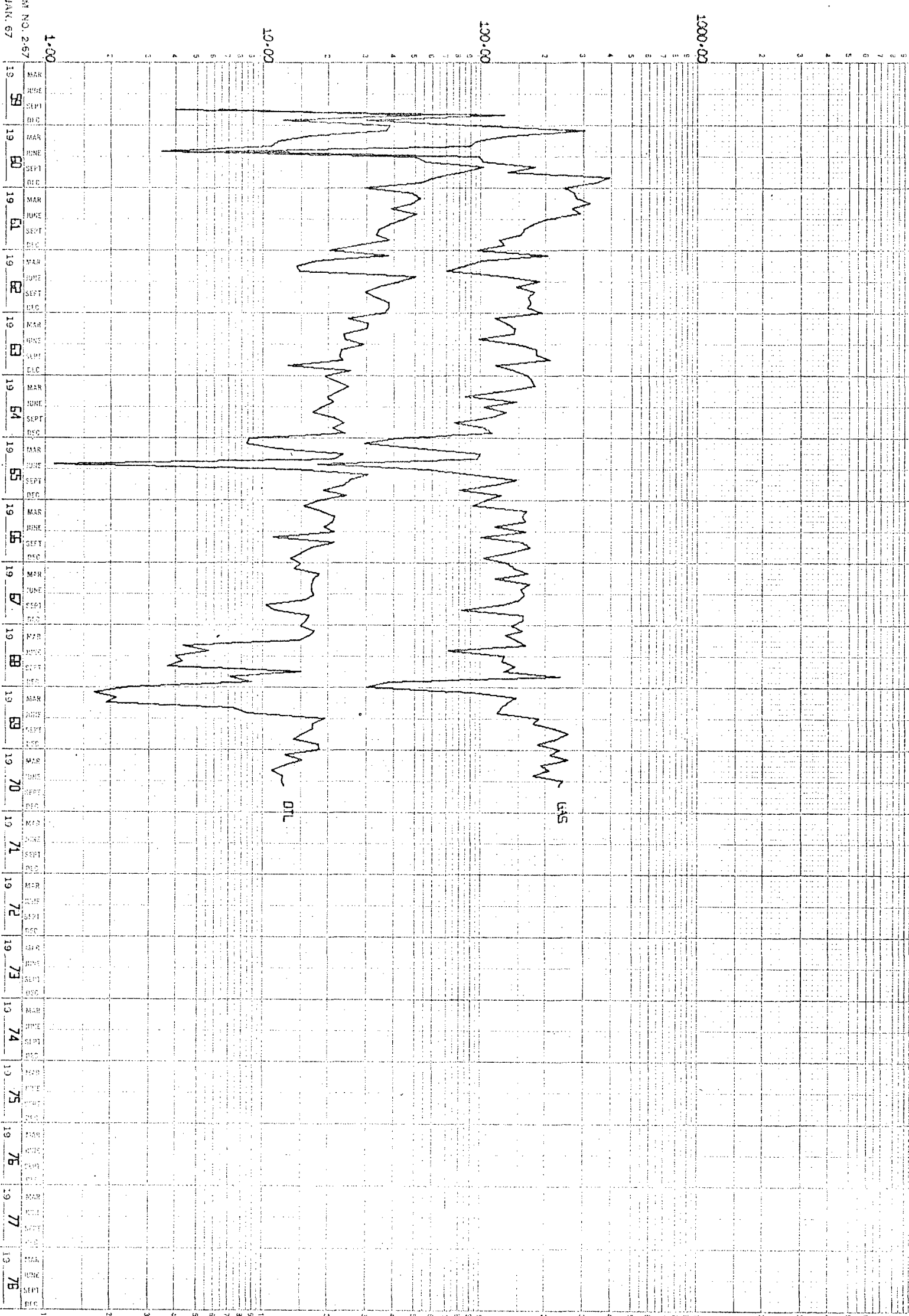
BBL'S OR MCF/DAY

FORM NO. 2-67

J.



BBL'S OR MCF/DAY



PRENTICE WATTS
VICE PRESIDENT
PRODUCTION

AZTEC OIL & GAS COMPANY
2000 FIRST NATIONAL BANK BUILDING
DALLAS, TEXAS 75202

August 31, 1970

RECEIVED
SEP 2 AM 8 09

New Mexico Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico 87501

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

Gentlemen:

Continental Oil Company has supplied us with copies of applications for down hole commingling of Gallup oil and Dakota oil zones in their Jicarilla "28" Well Nos. 1 and 5.

As an owner of a lease offsetting Continental's Jicarilla "28" lease, Aztec Oil & Gas Company has no objections to the proposed down hole commingling in Jicarilla "28" Well Nos. 1 and 5.

Very truly yours,



L. M. Stevens

LMS:bjr