

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

DHC - 62
New Sept 28

IN THE MATTER OF THE APPLICATION)
OF CONTINENTAL OIL COMPANY FOR)
AN ADMINISTRATIVE ORDER APPROVING)
COMMINGLING OF PRODUCTION IN)
JICARILLA 28 WELL NO. 4 LOCATED)
IN THE UNDESIGNATED GALLUP AND)
UNDESIGNATED DAKOTA POOLS, RIO)
ARRIBA COUNTY, NEW MEXICO)

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

RECEIVED 000

A P P L I C A T I O N

70 SEP 8 AM 9 57

COMES NOW CONTINENTAL OIL COMPANY, a Delaware corporation, (herein-
after 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 com-
pleted Jicarilla 28 Well No. 4 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. 4, located in the NW¼ of Section 34,
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) addi-
tional 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. 4 during July, 1970, totaled 181 barrels of oil and 1,515 MCF of gas. It is estimated that if this application is approved, production from the well will increase to 12 barrels of oil per day. Reserves will be increased by 13,500 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. 4 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. 4 is located 485 feet from the north line and 760 feet from the west line of Section 34, Township 25 North, Range 4 West, Rio Arriba County.

8. Jicarilla 28 Well No. 4 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. 1841.

9. Attached as Exhibits "D₁" and "D₂" are C-116 forms for 24 hour productivity tests dated August 8, 1970 for the Gallup and Dakota zones. The tests are the latest tests in Applicant's file for the Jicarilla 28 Well No. 4.

10. Attached as Exhibits "E₁", "E₂" and "E₃" are production decline curves for Jicarilla 28 Well No. 4. 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. 4 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 43.7 degrees API and oil from the Dakota zone has a gravity of 46.8 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.

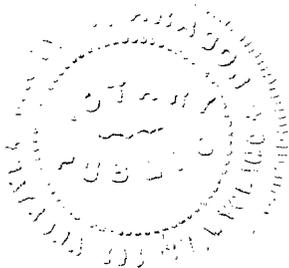
For the foregoing reasons, Applicant hereby requests approval of the down hole commingling of production in the well bore at Jicarilla 28 Well No. 4.

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 W. C. Blackburn

W. C. Blackburn
Division Manager

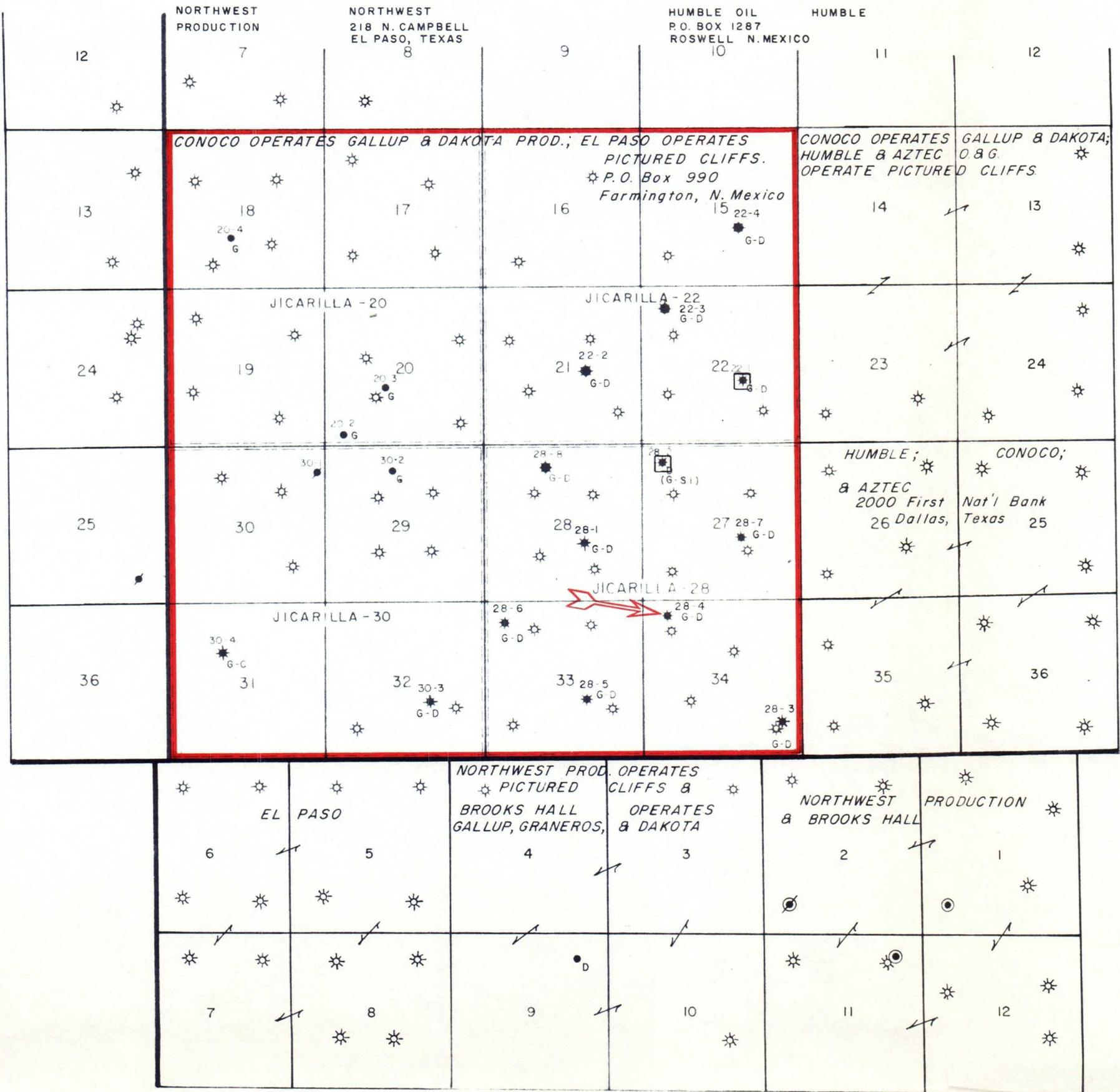


Subscribed and sworn to before me this 4th day of September, 1970, by W. C. Blackburn

My commission expires _____ My commission expires April 23, 1973

Mary E. Aragon
Notary Public

R. 4 W.



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N

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24
N

- LEGEND -

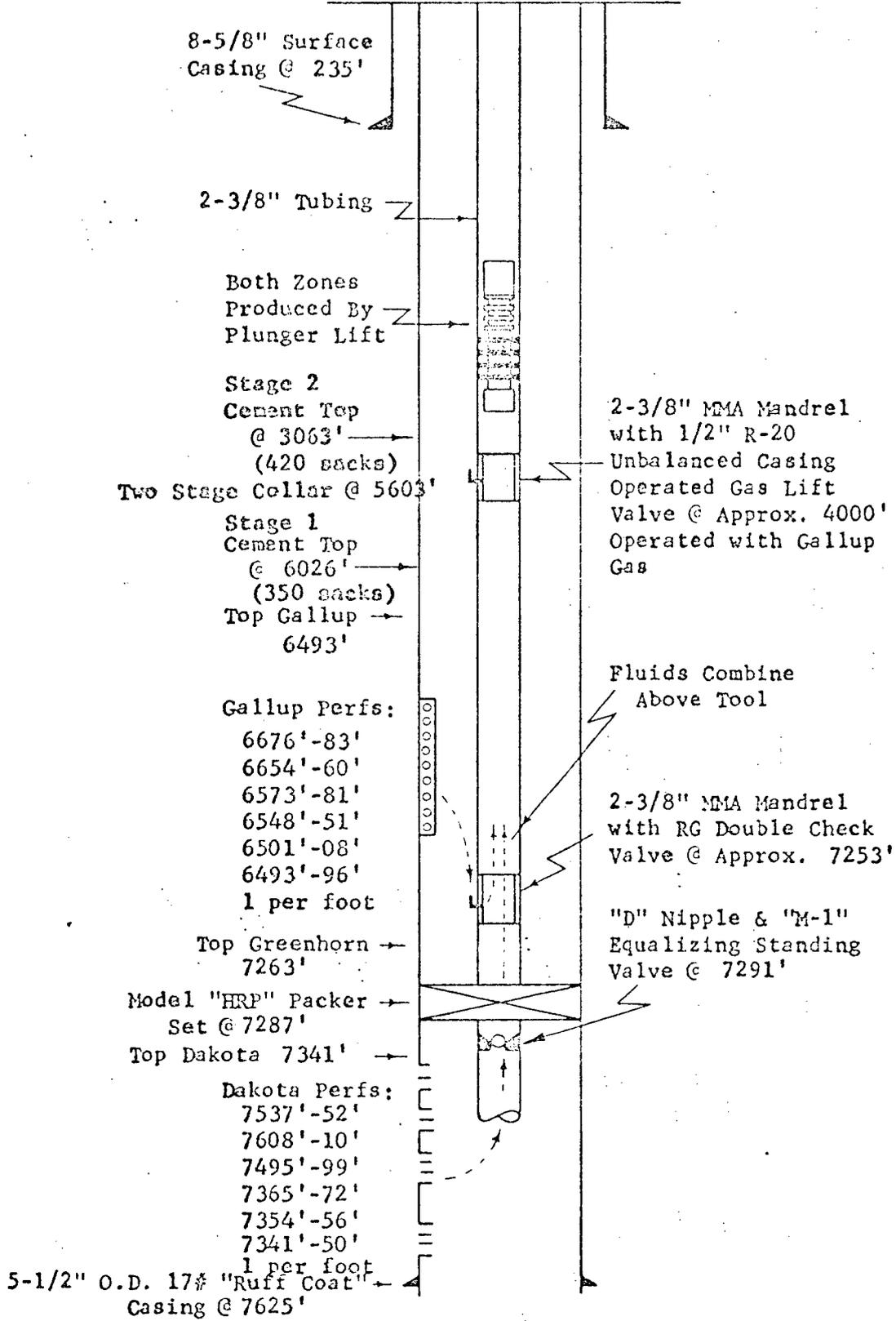
- _G GALLUP PRODUCING WELL
- _D DAKOTA PRODUCING WELL
- ★_{G-D} GALLUP(Oil)-CHACRA(Gas) DUAL
GALLUP(Oil)-DAKOTA(Oil) DUAL
- ★ GAS PRODUCING WELL
(PICTURED CLIFFS)
- ⊘ SHUT-IN WELL
- ⊙ DUAL GALLUP-GRANEROS
- ⊠ GALLUP(Oil)-DAKOTA(Oil)-Separate
Strings of Casing.

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

EXHIBIT "A"

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

DOWNHOLE COMMINGLING INSTALLATION



CONTINENTAL OIL COMPANY
 PRODUCTION DEPARTMENT
 CASPER DIVISION

Field/Unit:

WEST LINDRITH

Structure:

Exhibit B

Contour Int.

Isopach:

Contour Int.

Other:

Downhole Commingling Installation - Jicarilla 28-4 Well.

County: Rio Arriba

State: New Mexico

Engineer: J. A. Mazza

Geology by:

Date: 11-18-68

Drafted by: RWJ

Well Status Posted to:

SCALE = No Scale

**PROPOSED
DOWNHOLE COMMINGLING INSTALLATION**

GL Elevation: +6900'
KB Elevation: +6922'

8 5/8" Surface
Casing @ 235' KB

Cemented With 175 Sacks
Regular To Surface

2 3/8" Tubing

Cement Top At 3183' KB

Both Zones Produced
By Plunger Lift

Stage Collar @ 5603' KB
Cemented With 120 Sacks
Liteweight and 300 Sacks
50-50 Pozmix A

Cement Top At 6026' KB

Top Gallup At 6493' KB

Callup Perfs:
6676 - 83' KB
6654 - 60'
6573 - 81'
6548 - 51'
6501 - 02'
6493 - 96'
@ 1 Shot/Ft.

Tubing At 7380' KB

Top Greenhorn At 7263' KB

Top Dakota At 7341' KB

Dakota Perfs:
7537 - 52' KB
7608 - 10'
7495 - 99'
7341 - 50'
7365 - 72'
7354 - 56'
@ 1 Shot/Ft.

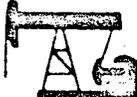
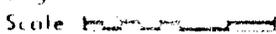
PBD At 7590' KB

"D" Nipple & "M-1" Equalizing
Standing Valve at 7350' KB

5 1/2" O.D. 17# Ruff-Cote Casing @
7625' KB. Cemented With 350 Sacks
Of 50-50 Pozmix A

TD At 7625' KB

Centralizers Located 10' & 60' Above Casing Setting
Depth and Every 90' Thereafter to 6475' KB; Also
One Centralizer 30' Above and 30' Below Stage Collar.

CONTINENTAL OIL COMPANY		
PRODUCTION DEPARTMENT Casper, Wyoming		
WEST LINDRITH		
EXHIBIT "C"		
Proposed Downhole Commingling Installation - Jicarilla 28-4		
County: Rio Arriba	State: New Mexico	
Engineer: J.A. March	Draftsman: B.S.	Date: 8-24-70
Scale:  No Scale	Well Status Posted to	

NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS

Form No. 1-1-65

Operator		Pool		County										
Continental Oil Company		Undesignated Gallup		Rio Arriba										
Address		TEST - (X)		Scheduled <input checked="" type="checkbox"/>		Completion <input type="checkbox"/>		Special <input type="checkbox"/>						
152 North Durbin, Casper, Wyoming		82601												
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	STATE	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU. FT./BBL.
		U	S	T							R	WATER BBL.S.	GRAV. OIL	
Jicartilla 28	1	J	28	25N	4W	8-02-70	P			24	0	13	99	7615
	2	D	27	25N	4W	OPB				24	0	7	28	4000
	3	P	34	25N	4W	8-06-70	P			24	0	5	23	4600
	4	D	34	25N	4W	8-08-70	P			24	0	5	23	4600
	5	J	32	25N	4W	8-10-70	P			24	0	22	90	4091
	6	D	33	25N	4W	8-12-70	P			24	0	5	91	18200
	7	J	27	25N	4W	8-14-70	P			24	0	5	40	8000
	8	C	28	25N	4W	8-16-70	P			24	0	27	67	2431

EXHIBIT "D1"

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.

Original Signed By

C. H. GARDNER

(Signature)

Senior Analyst

(Title)

8-27-70

(Date)

NMOC(2), File, MS

NEW MEXICO OIL CONSERVATION COMMISSION
GAS - OIL RATIO TESTS

G-116
Revised 1-1-65

Operator		Pool		County										
Continental Oil Company		Undesignated Dakota		Rio Arriba										
Address		TEST - (X)		Scheduled		Special								
152 North Durbin, Casper, Wyoming 82601		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>								
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	TYPE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PRODUCTION DURING TEST			GAS - OIL RATIO CU. FT./BBL.
		U	S	T							R	WATER BBL.S.	PROD. OIL BBL.S.	
Jicarella 28	1	J	28	25N	4W	8-02-70	P			24	0	12	211	17583
	2	D	27	25N	4W	8-05-70	P			24	3	5	110	22000
	3	P	34	25N	4W	8-06-70	P			24	0	14	172	12286
	4	D	34	25N	4W	8-08-70	P			24	0	2	44	27500
	5	J	32	25N	4W	8-10-70	P			24	3	23	120	5217
	6	D	33	25N	4W	8-12-70	P			24	0	17	89	5235
	7	J	27	25N	4W	8-14-70	P			24	1	19	190	10000
	8	C	28	25N	4W	8-16-70	P			24	1	21	78	3714

EXHIBIT "D2"

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.

Original Signed By
C. H. GAURIEL

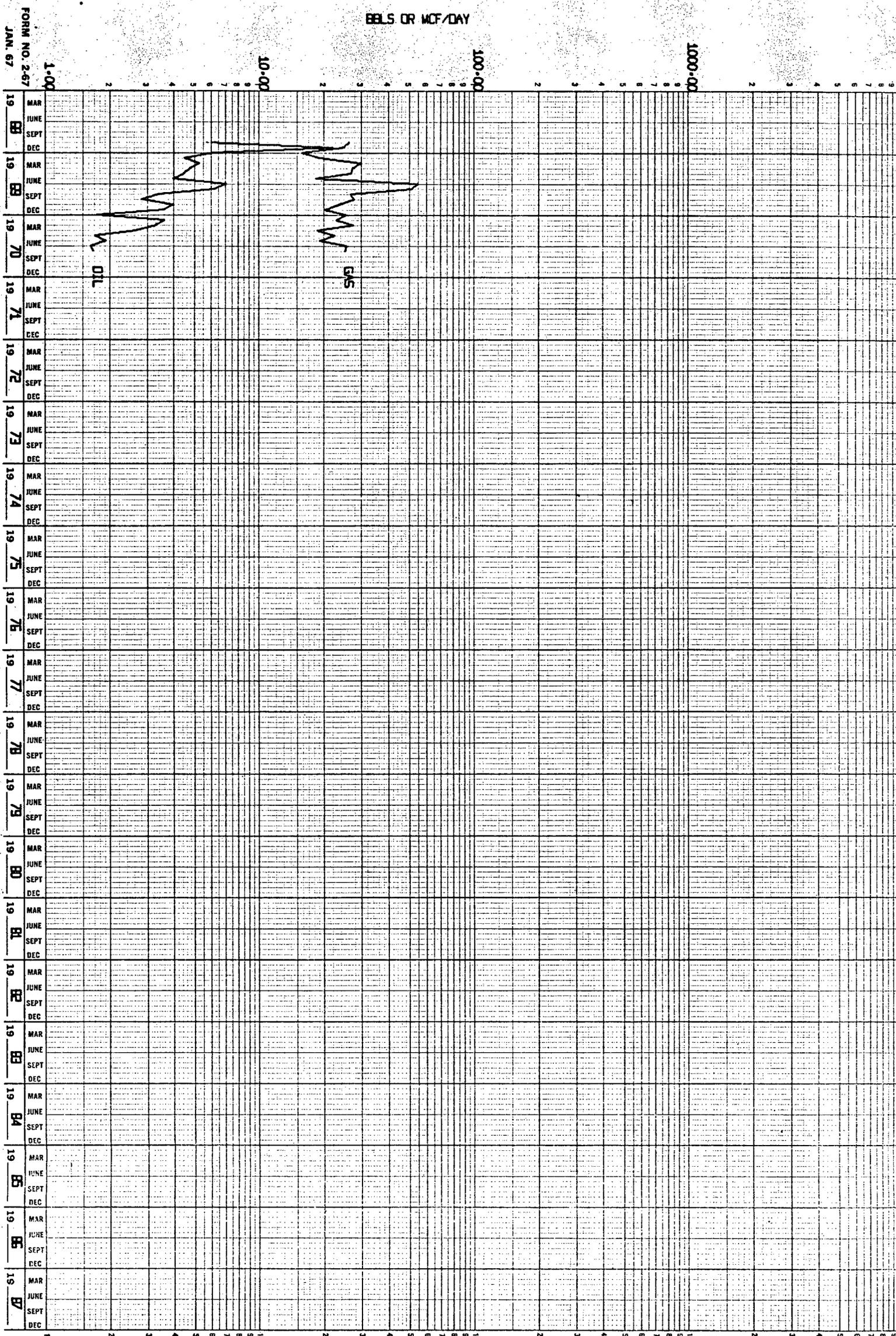
Senior Analyst

MMOCC(2), File, WS

8-27-70

(Date)

BBL'S OR MCF/DAY



BBL5 OR MCF/DAY

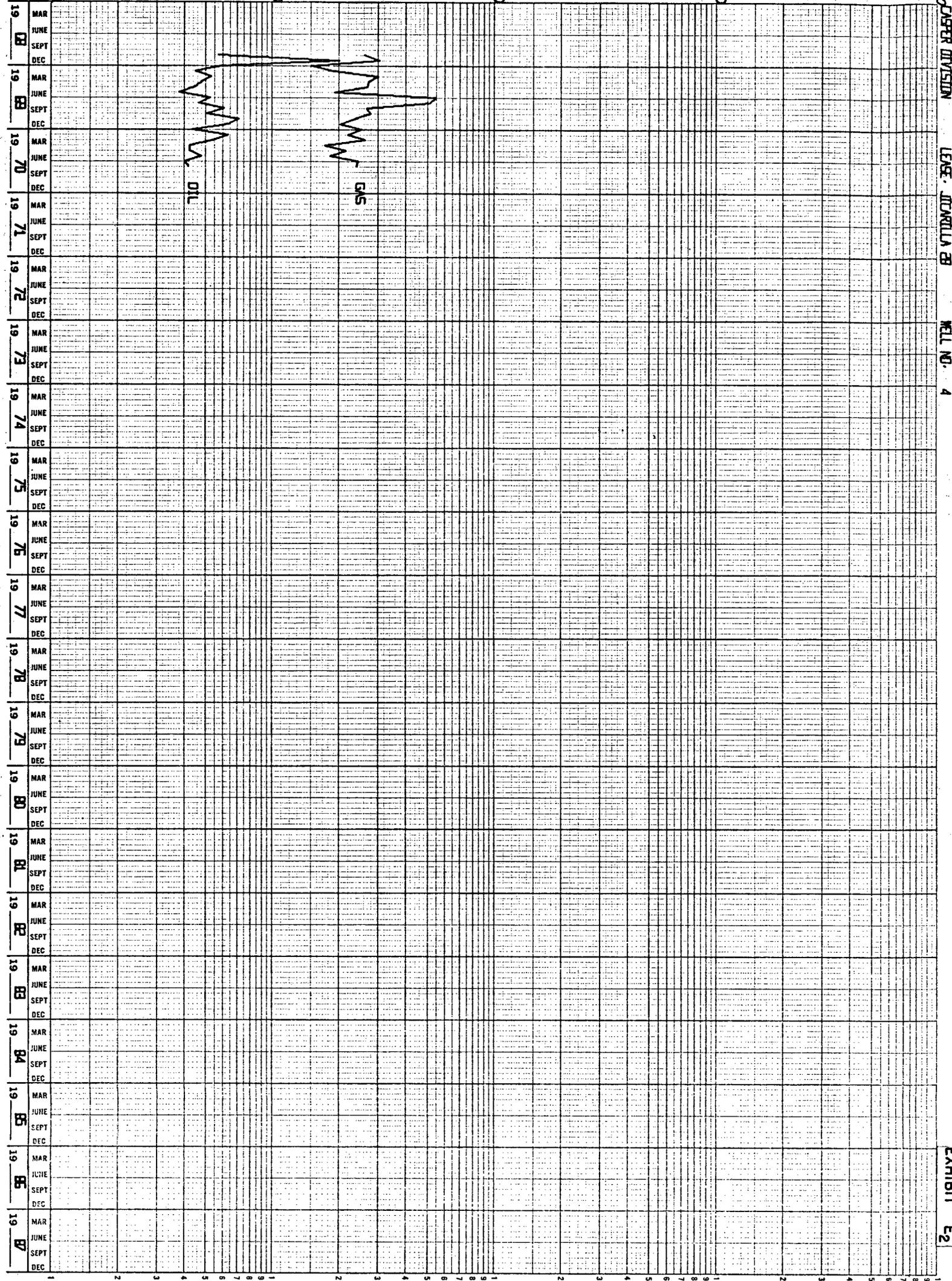
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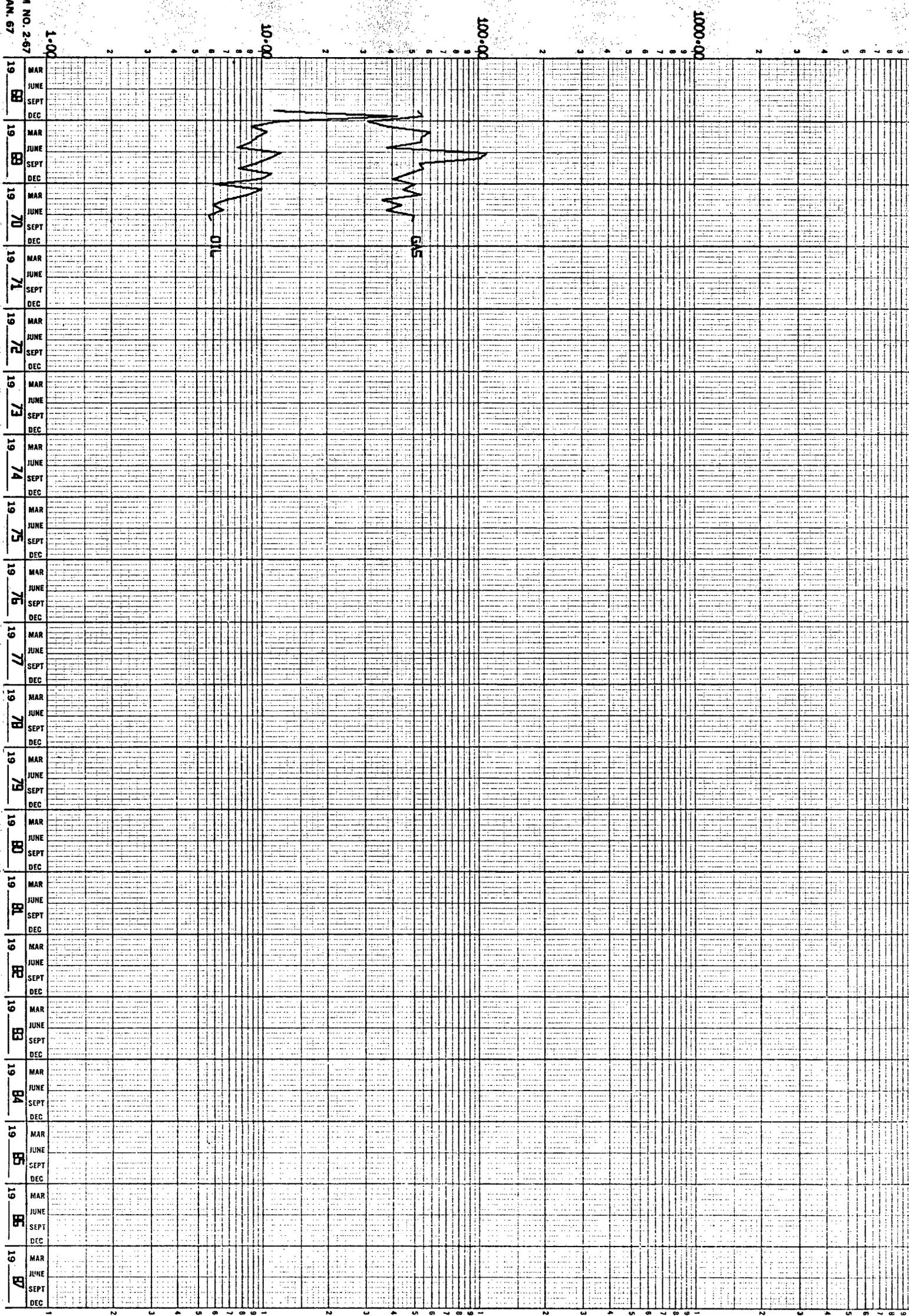
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FORM NO. 2-67
JAN. 67



19 67 MAR JUNE SEPT DEC
 19 68 MAR JUNE SEPT DEC
 19 69 MAR JUNE SEPT DEC
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BELS OR MCF/DAY



JICARILLA 28 WELL NO. 4
UNIT LETTER D, SECTION 34, 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	43.7	\$2.85	129 BOPM
Dakota	46.8	2.85	52 BOPM
Commingled	45.4	2.85	181 BOPM

Crude Purchaser: Shell Pipeline Company - Farmington, New Mexico

Royalty Interest Owner: Jicarilla Apache Tribe

Date: September 2, 1970