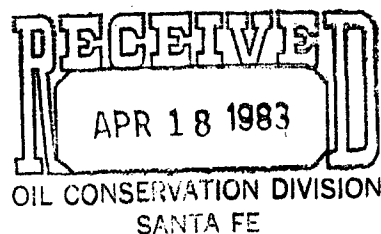


ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0149
Jerry L. Tweed
District Engineer



CERTIFIED
RETURN RECEIPT
REQUESTED

March 30, 1983

Mr. Joe D. Ramey
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Application for Downhole Commingling of the Jalmat and
Langlie Mattix Pools
Duthie Andrews WN No. 4
Section 19B, T23S, R37E
Lea County, New Mexico

ARCO oil and Gas Company respectfully requests administrative approval under the provisions of Rule 303-C to downhole commingle the Jalmat and Langlie Mattix pools of the Duthie Andrews WN No. 4. This well is located in Section 19, T-23-S, R-37-E, of Lea County, New Mexico.

In 1975 the Duthie Andrews WN No. 4 was initially completed in the Jalmat pool; however, insufficient test rates (post frac maximum - 108 MCFD) resulted in squeezing the Jalmat and completing in the Langlie Mattix. ARCO Oil and Gas Company would like to re-enter the Jalmat and requests approval to downhole commingle the Jalmat with the Langlie Mattix pool. The option to dual complete the well is unacceptable since the GOR of the Langlie Mattix makes pumping below a packer very difficult. Thus, the downhole commingling is necessary to permit efficient, economical production from both zones. The Duthie Andrews WN Nos. 1 and 4 are simultaneously dedicated to a 320-acre non-standard Jalmat gas proration unit by Administrative Order No. NSP-999.


Since the Jalmat formation produces no oil or water, the Langlie Mattix oil production will continue to be rod-pumped up the tubing with the gases from the Jalmat and Langlie Mattix being commingled in the annulus. Since only the gases will actually be downhole commingled, the small liquid production from the Langlie Mattix should not damage the Jalmat zone. Results from an offset, E. L. Steeler No. 5, show no problem with fluid incompatibility when commingling the Jalmat and Langlie Mattix. The E. L. Steeler No. 5 has downhole commingled the Jalmat and Langlie Mattix for over a year and is located 2640 feet south of the Duthie Andrews WN No. 4.

Mr. Joe D. Ramey
Page 2
March 30, 1983

No crossflow between zones is expected. Based on a pressure survey performed in June, 1981 on the offset, E. L. Steeler No. 5, the Langlie Mattix bottom hole pressure is 183 psig. When the Jalmat gas zone of Duthie Andrews WN No. 4 was first tested in 1975, the shut in tubing pressure was 175 psig. This corrects to a bottom hole pressure of 193 psig at -130 feet subsea, the measurement depth of the Langlie Mattix. The current bottom hole pressure of the Jalmat is expected to be between 120-150 psig.

Ownership of the zones to be commingled is common, including working interest, royalty, and overriding royalty. Attached is the information requested by Rule 303-C for downhole commingling applications. Offsets are being notified by registered mail with a copy of this application. We believe this request is justified in the interest of conservation, to prevent offset drainage, and to protect correlative rights. Thank you for your consideration.

Yours very truly,

A handwritten signature in cursive script, appearing to read "J L Tweed".

J. L. Tweed

JLT/PR:dmm
Attachments

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0149
Jerry L. Tweed
District Engineer



March 30, 1983

OFFSET OPERATORS
(See Attached List)

Dear Sirs:

Application for Downhole Commingling of the Jalmat
and Langlie Mattix Pools
Duthie Andrews WN No. 4
Section 19B, T23S, R37E
Lea County, New Mexico

ARCO Oil and Gas Company respectfully requests your waiver
of the attached application to the New Mexico Oil Conser-
vation Commission. We applied for downhole commingling of
the Jalmat and Langlie Mattix pools of the Duthie Andrews
WN No. 4.

If you have no objections to this application, please
indicate your approval of our intentions by signing both
copies of this request. Kindly return one copy to ARCO and
forward the other to Mr. Joe Ramey in the addressed envelopes
enclosed.

We appreciate your prompt reply to this request.

Yours very truly,

J. L. Tweed

JLT/PR:dmm
Atts.

Agreed to this _____ day of _____, 1983.

Signed _____

Title _____

Information for Downhole Commingling

(a) Operator: ARCO Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702

(b) Lease, Well, Location, and Pools:

Duthie Andrews WN No. 4
660' FNL & 1980' FEL
Section 19, T23S, R37E

Commingled Pools: Jalmat and Langlie Mattix

(c) Acreage Dedication and Offset Ownership:

(See Attachments)

(d) 24-hour Productivity Test:

(See Attached C-116)

(e) Decline Curves and Completion Resume:

(See Attachments)

(f) Bottom Hole Pressures:

Based on offset measurements, the bottom hole pressure of the Langlie Mattix is approximately 183 psig. The bottom hole pressure of the Jalmat is expected to be between 120-150 psig.

(g) Fluid Incompatibility:

Since the Jalmat produces no oil or water, only the gases from the two zones are actually downhole commingled. The gases have similar compositions. No fluid incompatibility has been observed from an offset, E. L. Steeler No. 5, which has downhole commingled the Jalmat and Langlie Mattix for over a year.

(h) Value of Commingled Fluids:

The Jalmat and Langlie Mattix gases are classified under the same pricing category. Combined gas streams will have the same value as separated gas streams. Also, the gas purchaser is common.

(i) Allocation of Production:

Jalmat Gas	67%
Langlie Mattix Gas	33%
Langlie Mattix Oil	100%

The gas allocation was based on an expected 200 MCFD from the Jalmat combined with 100 MCFD from the Langlie Mattix. All oil production will be allocated to the Langlie Mattix.

(j) All offset operators have been notified by registered mail of the proposed commingling and given a copy of this application.

OFFSET OPERATORS

Conoco, Inc.
P. O. Box 1959
Midland, Texas 79702

Samedan Oil Company
900 Wall Towers East
Midland, Texas 79702

James L. Evans
P. O. Box 1125
Eunice, New Mexico 88231

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702

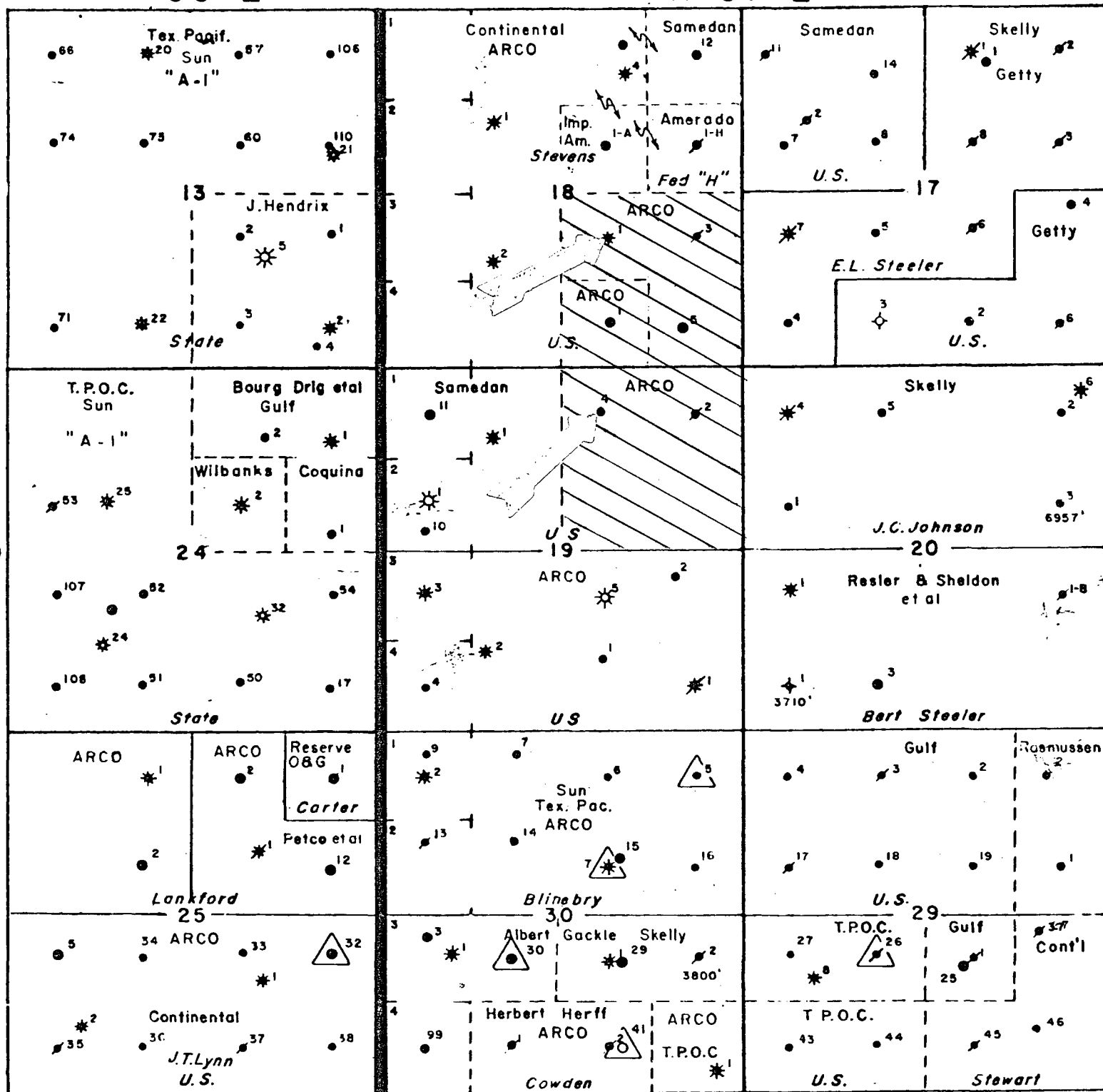
Doyle Hartman
500 N. Main
Midland, Texas 79702

John H. Hendrix Corporation
525 Midland Tower
Midland, Texas 79702

Imperial American Management Company
215 Mid-America Building
Midland, Texas 79701

R 36 E

R 37 E



320-acre non-standard JALMAT gas proration unit dedicated to Duthie Andrews WN Nos. 1 and 4

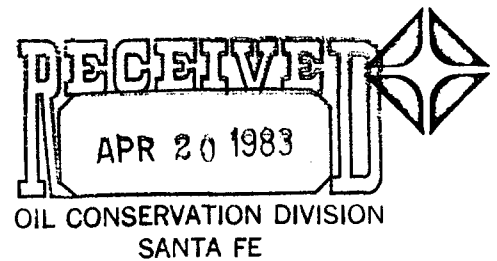
ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Permian District Midland, Texas

JALMAT GAS ZONE
LEA COUNTY, NEW MEXICO

SCALE 1" = 2000'

By P. RICHMOND	Drawn By	Date 6 - 82
Date 6 - 82	Revised By	Date
Dept. WEST AREA ENGR.	Dwg. No.	

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0149
Jerry L. Tweed
District Engineer



March 30, 1983

James L. Evans
P. O. Box 1125
Eunice, New Mexico 88231

Dear Sirs:

Application for Downhole Commingling of the Jalmat
and Langlie Mattix Pools
Duthie Andrews WN No. 4
Section 19B, T23S, R37E
Lea County, New Mexico

ARCO Oil and Gas Company respectfully requests your waiver of the attached application to the New Mexico Oil Conservation Commission. We applied for downhole commingling of the Jalmat and Langlie Mattix pools of the Duthie Andrews WN No. 4.

If you have no objections to this application, please indicate your approval of our intentions by signing both copies of this request. Kindly return one copy to ARCO and forward the other to Mr. Joe Ramey in the addressed envelopes enclosed.

We appreciate your prompt reply to this request.

Yours very truly,

J. L. Tweed

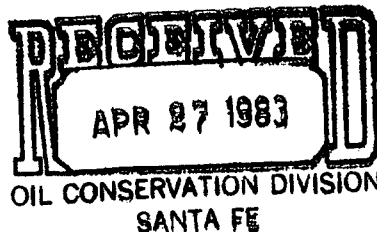
JLT/PR:dmm
Atts.

Agreed to this 17th day of April, 1983.

Signed James L. Evans

Title Operator

ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0149
Jerry L. Tweed
District Engineer



March 30, 1983

Getty Oil Company
P. O. Box 1231
Midland, Texas 79702

Dear Sirs:

Application for Downhole Commingling of the Jalmat
and Langlie Mattix Pools
Duthie Andrews WN No. 4
Section 19B, T23S, R37E
Lea County, New Mexico

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WN No. 4.

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copies of this request. Kindly return one copy to ARCO and
forward the other to Mr. Joe Ramey in the addressed envelopes
enclosed.

We appreciate your prompt reply to this request.

Yours very truly,

J. L. Tweed

JLT/PR:dmm
Atts.

Agreed to this 21st day of April, 1983.

Signed

J. R. HOWARD

Title

DISTRICT ENGINEER

GAS-OIL RATIO TESTS

Operator		Pool		County		Lea								
ARCO Oil and Gas Company		Langlie Mattix 7R On		Lea										
Division of Atlantic Richfield Co.														
P.O. Box 1710, Hobbs, New Mexico 88240														
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	Completion			Special <input checked="" type="checkbox"/>	GAS - OIL RATIO CU.FT/BBLS
		U	S	T						R	WATER BBLs.	GRAV. OIL		
Duthie Andrews WN	4	B	19	23S	37E	4-3-83	P	4	24	2	37.5	4	75	18,750
Productivity test for commingling down hole per Rule 303-C.														

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 Division.

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.

Well original and one copy of this report to the district office of the New Mexico Oil Conservation Division 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.

[Signature]
(Signature)

Engrg. Tech. Spec.

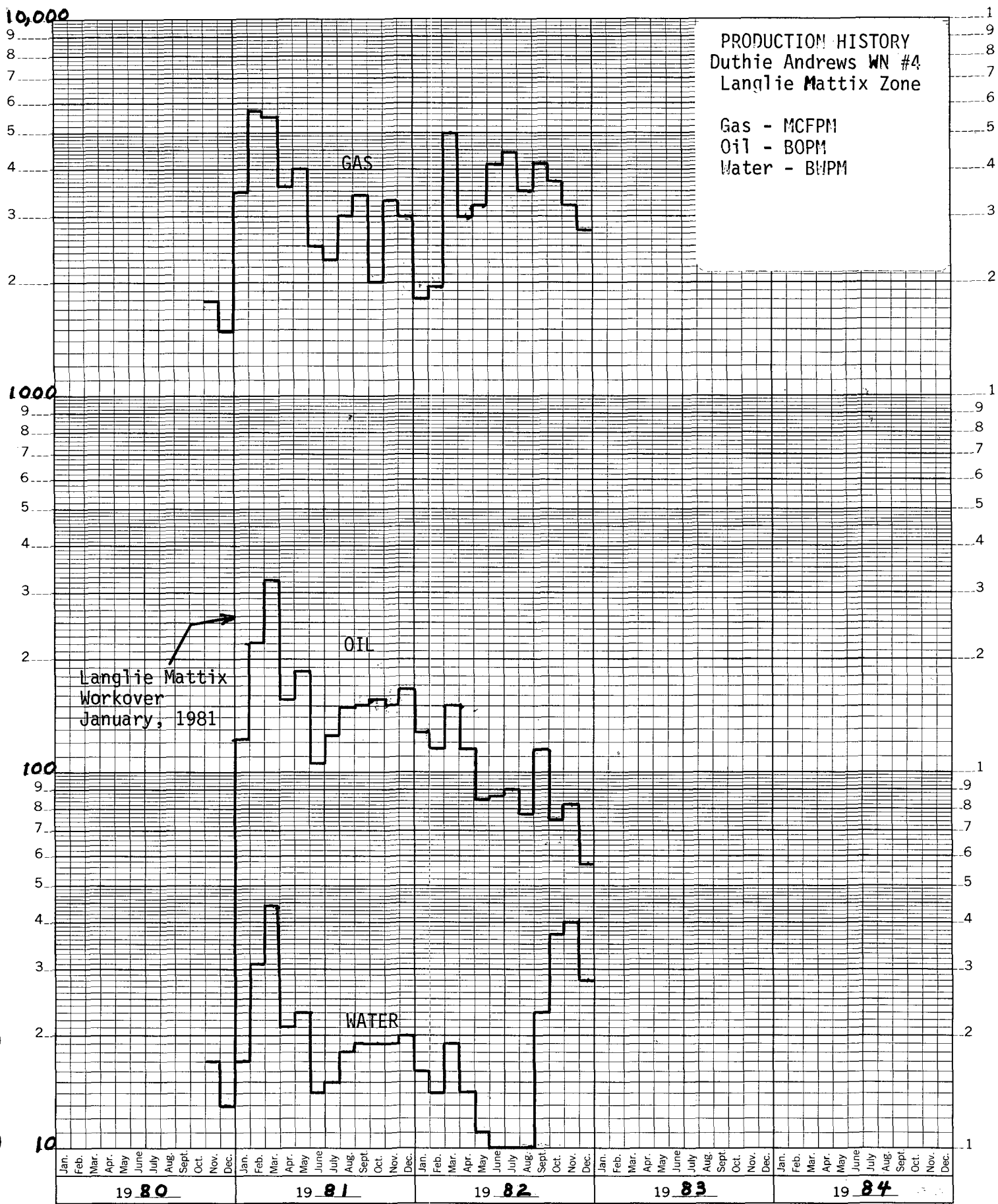
(Title)

4/4/83

(Date)

5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690



WELL DATA

Field Jalmat and Langlie Mattix
 Company ARCO Oil and Gas Company
 Lease Duthie Andrews WN
 Well No. 4

County Lea
 Location 660 FNL & 1980' FEL of
Sec. 19, T23S, R37E

TD 3710 PBD 3695
 Casing 8 5/8 @ 418
4 1/2 @ 3710

Elevation 3328
 Logs GR-CNL-CDL-DLL

Completion Date 3-2-76
 Completion Interval 3463-3606'

Initial or Workover initial
 Completion Zone Langlie Mattix-Queen

Initial Potential
3 BOPD + 3 BWPD + 574 MCFD (Queen)

Remarks
The Jalmat-Yates (2895-3035') was initially perforated and
stimulated; however, it was later squeezed after unsatisfactory
test rates.

Porosity Interval:

Interval Open:

Loco Hills _____
 Metex _____
 Square Lake _____
 Premier _____
 Vacuum _____
 Lovington _____
 Jackson _____

History
Date

8/3/75	Spudded
8/14/75	Acidize Jalmat (2895-3035) w/1500 gals 7 1/2% HCl
8/15/75	Acidize Jalmat (2895-3035) w/2500 gals. 12% HCl
	and 6% HF mud acid overflushed w/2000 gals. 3% HCl.
8/20/75	Fracture Jalmat (2895-3035) w/20,000 gals. gelled water
	(3% HCl) + 40,000 lbs. 20/40 sand.
8/21-9/8	Tested Jalmat w/maximum rate of 108 MCFD.
11/11/75	Squeezed Jalmat (2895-3035)
11/17/75	Acidize Langlie Mattix (3463-3606) w/1500 gals. 15% HCl.
	Fracture Langlie Mattix (3463-3606) w/15,000 gallons
	gelled water and 37,500 lbs. 20/40 sd.
1/6/81	Perforate additional Langlie Mattix zones.
1/7/81	Acidize Langlie Mattix (3386-3684 OA) w/3000 gals. MCA acid.

WELL DATA

Page 2

History
Date

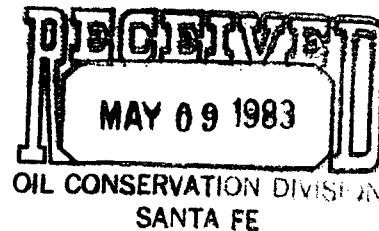
1/08/81

Fracture Langlie Mattix (3386-3684 OA) w/15,000
gals. x-link gel + 15,000 gals. CO₂ + 27,000 lbs.
20/40 sand + 30,000 lbs. 10/20 sand.



Mark K. Mosley
Division Manager
Production Department
Hobbs Division
North American Production

Conoco Inc.
P. O. Box 460
726 E. Michigan
Hobbs, NM 88240
(505) 393-4141



May 3, 1983

New Mexico Oil Conservation Division
Department of Energy and Minerals
P. O. Box 2088
Santa Fe, NM 87501

Attention: Joe Ramey

Gentlemen:

Application for Downhole Commingling, ARCO's Duthie Andrews WN No. 4,
Lea County, New Mexico

Conoco Inc., as offset operator, has approved ARCO's letter ballot as shown above. One copy is attached and one copy is being returned to ARCO.

Yours very truly,

HAI:mhe

CC w/Attach. ARCO, Attn. J. L. Tweed

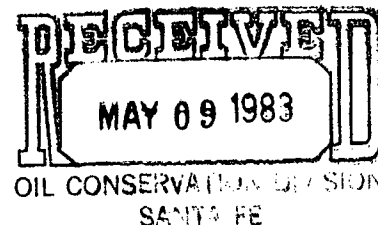
ARCO Oil and Gas Company
Permian District
Post Office Box 1610
Midland, Texas 79702
Telephone 915 684 0149
Jerry L. Tweed
District Engineer

APR 19 1983



March 30, 1983

Conoco, Inc.
P. O. Box 1959
Midland, Texas 79702



Dear Sirs:

Application for Downhole Commingling of the Jalmat
and Langlie Mattix Pools
Duthie Andrews WN No. 4
Section 19B, T23S, R37E
Lea County, New Mexico

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Yours very truly,

J. L. Tweed

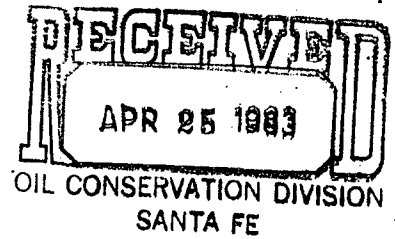
JLT/PR:dmm
Atts.

Agreed to this 3rd day of May, 1983.

Signed

Title Division Manager

OIL CONSERVATION DIVISION
DISTRICT 1



OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

DATE April 20, 1983

RE: Proposed MC
Proposed DHC X
Proposed NSL
Proposed NSP
Proposed SWD
Proposed WFX
Proposed PMX

Gentlemen:

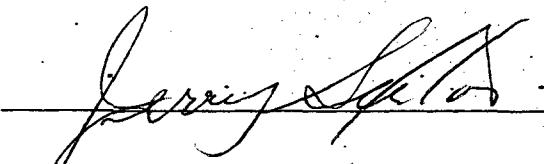
I have examined the application for the:

ARCO Oil & Gas Co. Duthie Andrews WN #4-B 19-23-37
Operator Lease and Well No. Unit, S - T - R

and my recommendations are as follows:

Under the present situation for gas, I'm not sure we should approve any oil
and gas zones for DHC--J.S.

Yours very truly,


/mc