

RELEASE 5-19-93

OIL CONSERVATION DIVISION  
RECEIVED

# Mobil Exploration & Producing U.S. Inc.

APR 23 1993 9 11

as agent for Mobil Producing Texas & N.M. Inc.

HOUSTON DIVISION  
12450 GREENSPOINT DRIVE  
HOUSTON, TEXAS 77060-1991

April 23, 1993

State of New Mexico Energy  
and Mineral Department  
Oil Conservation Division

William J. Lemay  
Director

*3 wells*

MOBIL PRODUCING TEXAS & N.M. INC.  
REQUEST FOR EXCEPTION TO RULE  
303-A DOWN HOLE COMMINGLING  
UPPER PENNSYLVANIAN AND WOLFCAMP  
ZONES ~~LOVINGTON DEEP AMACO~~  
~~STATE #3, KRITTI STATE 31 #1,~~  
~~LOVINGTON DEEP YATES STATE #1~~  
LEA COUNTY, N.M.

Gentlemen:

Mobil Producing Texas and New Mexico, Inc. (MPTM) respectfully request your approval to down hole commingle the production from the Upper Pennsylvanian and Wolfcamp zones in the captioned wells. Each zone is classified as an oil zone. In support of this request, required information is attached.

If you need additional information, please contact the undersigned at (713)775-2125.

Sincerely,

*Sheena Mathews*

Sheena Mathews  
Environmental & Regulatory  
Engineer

MOBIL EXPLORATION & PRODUCING U.S.

LOVINGTON DEEP AMOCO STATE #3

DOWNHOLE COMMINGLING REQUIRED DATA

1. (a) Well involves a oil zone.
  1. Combined daily production from oil zones before commingling as determined in accordance with section D, paragraphs 4 and 5 of rule 303-C does not exceed 80 bbls/day limitation with the perforations of lowermost pool at greater than 10,000 ft.
  2. Artificial lift will be used to bring fluid from both zones.
  3. Neither zone produced more water than the combined oil limitation as determined in 1(a)1.
  4. Combining fluid from both zones does not result in the formation of precipitates at the formation.
  5. Value of the crude will not be reduced by commingling.
  6. Ownership is common.
  7. Commingling will not jeopardize efficiency of future secondary recovery operations.
2. (a) Mobil Exploration & Producing U.S.  
12450 Greenspoint Dr.  
Houston, Tx 77060-1991
- (b) Lovington Deep Amoco State #3  
Sec 6, T-17S, R-36E  
Lea County, New Mexico  
Upper Pennsylvanian and Wolfcamp zones.
- (c) Ownership plat (attached).
- (d) A most current 24-hr test of the Wolfcamp is 20 BOPD and 3 BWPD. Production on the Upper Pennsylvanian immediately prior to recompletion to the Wolfcamp is 9 BOPD and 0 BWPD.
- (e) Production curves for both zones (attached).

- (f) Bottom hole pressures for each zone (attached).
- (g) Each zone is oil and there is no evidence of incompatibility.
- (h) Test the Wolfcamp prior to commingling, then test the commingled production. Allocate initial test production to the Wolfcamp. Allocated the differential of the commingled production and the Wolfcamp to the Upper Pennsylvanian.
- (i) Researched offset acreage and Mobil is the only operator in this field.

**B.P. PATERNOSTRO**  
 Multiphase Curve Analysis  
 Rate vs Time  
(c) 1989 SoftSearch, Inc

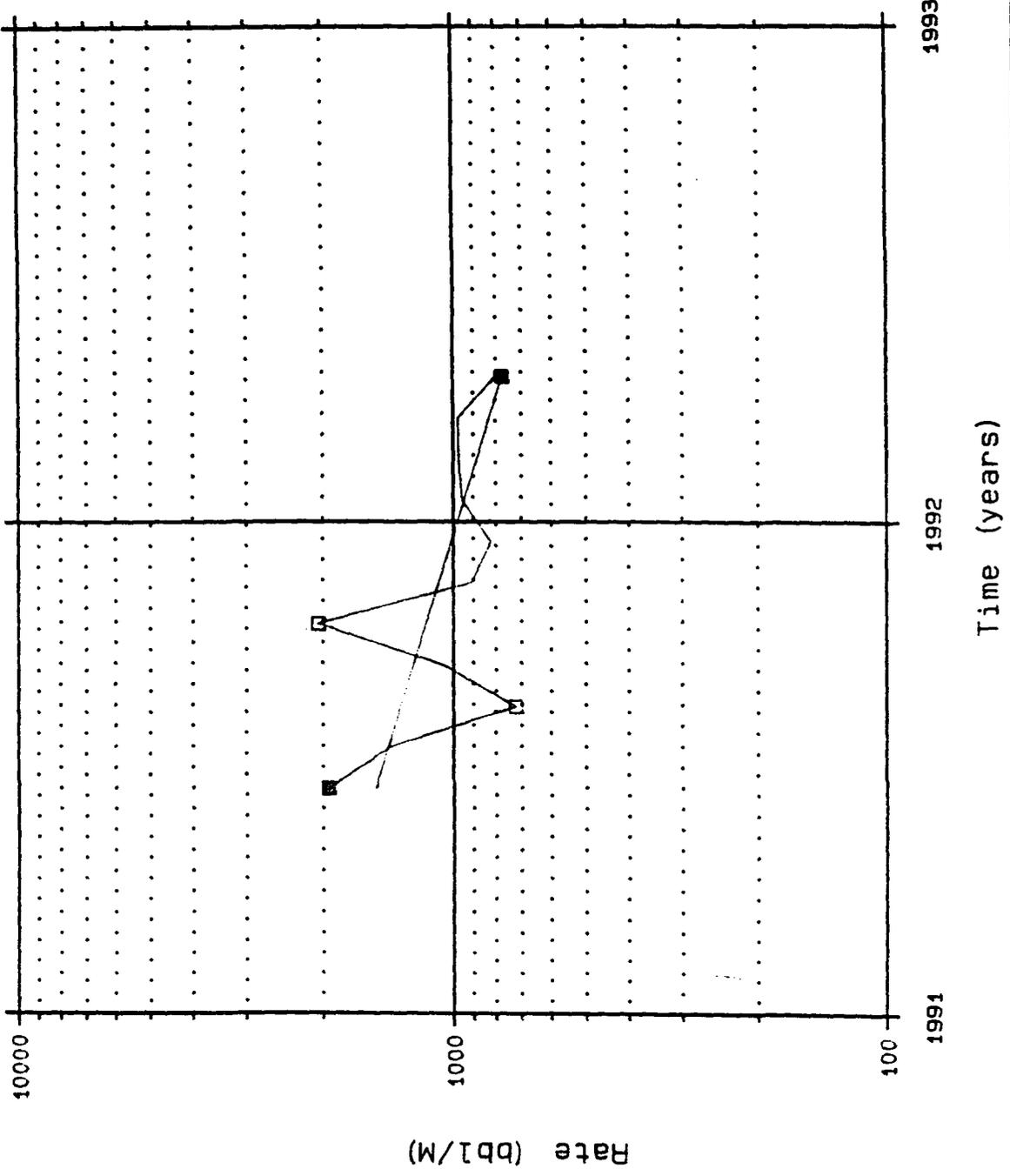
**LD AMOCO ST. #3**  
 UPPER WOLFCAMP SAND  
 PRODUCTION DECLINE FIT

6/04/1992

Project: LD AM ST3-WOLF

**Production Curves**

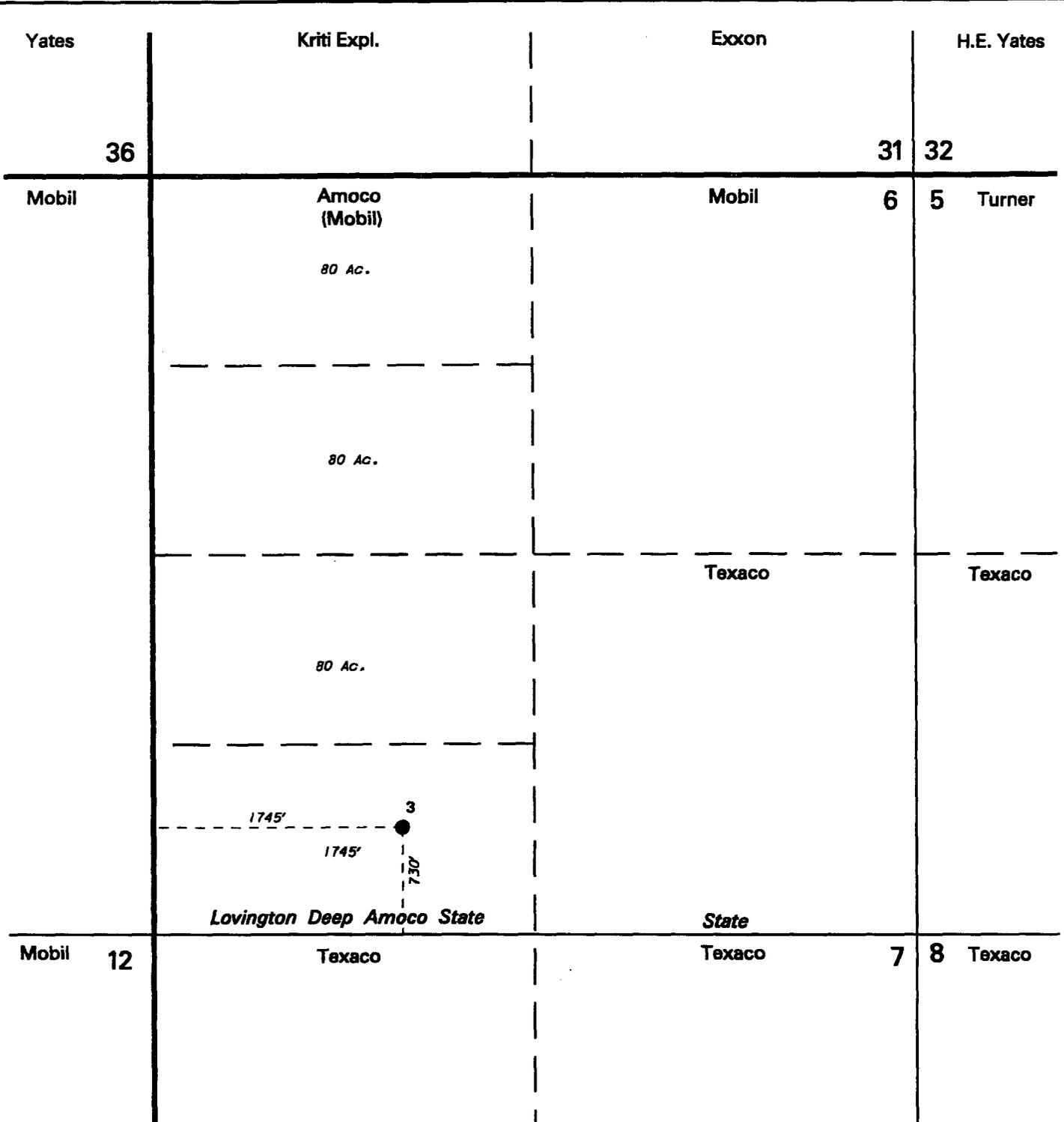
OIL: ■ OIL DATA  
 0 History 6/91 - 4/92  
 1 Const Percent 6/91 - 4/92  
 G1 : 1570.061 BBL/M  
 D1 : 55.255 %  
 G2 : 751.222 BBL/M  
 Np : 12.216 MBBL



Lovington Deep Amoco State #3

Lovington Deep Amoco State #3 produced from the Upper Pennsylvanian for a short period of time. There insufficient data to provide a decline curve for this zone in this well.

THIS DRAWING AND ALL INFORMATION THEREON IS THE PROPERTY OF MOBIL PRODUCING TEXAS & NEW MEXICO INC. AND SHALL NOT BE COPIED OR USED EXCEPT FOR THE PURPOSE FOR WHICH IT IS EXPRESSLY FURNISHED. THE DRAWING AND ANY COPIES THEREON (PARTIAL OR COMPLETE) SHALL BE RETURNED TO THE OWNER ON DEMAND.



RESERVE \_\_\_\_\_ PERMIT DEPTH \_\_\_\_\_

SPECIAL INSTRUCTIONS \_\_\_\_\_

THE STATE OF TEXAS  
COUNTY OF Midland

I hereby certify that this plat truly represents conditions as they actually exist on this lease; that said plat which is drawn to the scale indicated hereon, is to the best of my knowledge true and correct; that it accurately shows said lease with all wells on same; that number and location of said wells are as indicated hereon; and that this plat correctly reflects all pertinent and required data.

## Mobil Exploration & Producing U.S. Inc. Midland

LEASE Lovington Deep Amoco State  
 WELL NO. 3 DATE \_\_\_\_\_ 19 93  
 \_\_\_\_\_ LEASE NO. \_\_\_\_\_  
 TOTAL ACRES IN LEASE 309.85 ACRES COVERED BY PLAT 309.85  
 DESCRIPTION West 2/3 of Section 6, T-17-S, R-36-E

6 Miles SW form Lovington, NM.  
Lea County, New Mexico

DRAWN <u>SDB2140</u>	DATE <u>8-2-91</u>	FIELD <u>South Shoe Bar-</u>
SCALE <u>1" = 1000'</u>	FILE NO <u>29</u>	<u>Wolfcamp</u>

# LIVINGSTON DEEP STATE #2 (PENN)

<b>DEEP_2</b> <b>MEPLUS</b> <b>LARRY</b> <b>05-04-1993</b>		<b>Production</b> 16.0 BOPD 2.0 BWPD 28 MCF/D	<b>Casing</b> dp/dt <del>1750.0</del> psi 4.5 mins	<b>Casing(Psig)= 230.0</b>
<b>WELL DATA</b> 40.0 API Oil 1.05 Water SG Gas SG:0.83 Velocity= 1147 Ft/Sec	<b>VOGEL IPR ANALYSIS</b> PBHP/SBHP=0.93 Efficiency=11% Max Producing Rate 139.6 BOPD 17.4 BWPD	<b>Gas/Liq</b> PSIG= 319	<b>Annular Gas Flow</b> (MCF/D)= 0.0	<b>100% Liquid</b>
<b>Temperature:</b> 70 F Surface 130 F Bottom 2.375 Tubing 5.500 Casing	<b>Reservoir Pressure</b> 500 psia <b>Test Method-</b> EST. <b>0 day Shut-In</b> <b>Test date: 5-3-93</b>	<b>Liquid @</b> 10488 ft	<b>SBHP(PSIA)</b> = 500	
<b>Total Liquid above Pump= 401 Ft</b> <b>Gas-Free Liquid above Pump= 401 Ft</b>		<b>Datum</b> @10889	<b>PRHP(Psia)</b> = 467.2	

	Fluid Level Above THE pump	Csg pressure
5-3-92	0'	30*
4 Hours	95'	70*
24 Hours	401'	230*

**Mobil Exploration & Producing U.S. Inc.**  
as Agent for MOBIL PRODUCING TX & NM INC.

May 10, 1993

HOUSTON DIVISION  
12450 GREENSPOINT DRIVE  
HOUSTON, TEXAS 77060-1991State of New Mexico Energy  
and Minerals Department  
Oil Conservation Division

Att: Ben Stone

**DOWNHOLE COMMINGLING  
SOUTH SHOEBAR FIELD  
LEA COUNTY, NM.**

Dear Mr. Stone,

As per our conversation on May 20, 1993, I am enclosing information you requested to complete the application for the downhole commingling of Upper Pennsylvanian and Wolfcamp Zones in the South Shoobar Field. I am sending a copy of the G-116 for the Lovington Deep Amoco State #3 (Sec. 6, T-17S, R-36E), Lovington Deep Yates State #1 (Sec. 36, T-36S, R-35E), and Kriti State 31 #1 (Sec. 31, T-16S, R-36E). Currently, the Wolfcamp and Upper Pennsylvanian are surface commingled. Total value of the crude will not be reduced by downhole commingling (Pennsylvanian 45 API gravity and Wolfcamp 41 API gravity @ 60). Static bottom hole pressure for both zones is approximately 500 psia (see attached fluid level tests). Allocation of production for the Kriti State #1 should be approximately 75% Wolfcamp and 25% Upper Pennsylvanian, Lovington Deep Amoco State #3 should be approximately 60% Wolfcamp and 40% Upper Pennsylvanian, and Lovington Deep Yates State #1 should be approximately 75% Wolfcamp and 25% Upper Pennsylvanian.

Thank you for your assistance in this matter. If you require additional information, please contact me at (713) 775-2125.

Sincerely,

*Sheena Mathews*Sheena Mathews  
Env/Reg Engineer/SM  
Attachments

# TRANSMITTAL SHEET

**Mobil Exploration & Producing U. S. Inc.**  
**12450 Greenspoint Drive**  
**Houston, TX 77060-1991**

**ENV/REG/LP**



**Date:** 5/21/93

**To:** Ben Stone

**Location:** nmoco

**Phone No.:** \_\_\_\_\_

**Fax No.:** \_\_\_\_\_

**From:** Sheena Mathews

**Location:** \_\_\_\_\_

**Phone No.:** \_\_\_\_\_

**No. of Pages:** 8 (Including this sheet)

**Note:**  
Thanks for your help!  
Sheena

**If trouble receiving, please call sender above or BM 8-334-2187 or 713-775-2187.**

Submit 2 copies to Appropriate District Office.  
DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240  
DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210  
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

**OIL CONSERVATION DIVISION**  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

**GAS - OIL RATIO TEST**

Operator: Mobil Producing Texas & New Mexico Inc. Pod: Shoe Bar Upper Penn, South  
Address: 12450 Greenspoint Drive U. S. Inc. County: Lea

LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	TYPE OF TEST - (N)	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL	
		U	S	T							WATER BBLS	GRAV. OIL	OIL BBLS		GAS MCF
Lovington Deep Amoco State	1	E	6	17	36	9/5/92	P	30		24	3	39.5	15	59	3933
Lovington Deep State	1	A	1	17	35	9/14/92	P	30		24	3	41.1	8	70	8750
Lovington Deep State	2	T	1	17	35	9/8/92	P	35		24	2	41.1	19	47	2474

Scheduled  Completion  Special

**Instructions:**

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.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

Signature: *Carla Chapa Ghazizadeh*

Printed name and title: Carla Chapa Ghazizadeh, Env. & Reg. Tech. Asst.

Date: 10/23/92 Telephone No: (713) 775-2092

**DISTRICT I**  
 P.O. Box 1980, Hobbs, NM 88240  
**DISTRICT II**  
 P.O. Drawer DD, Artesia, NM 88210  
**DISTRICT III**  
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico  
 Energy, Minerals and Natural Resources Department

**OIL CONSERVATION DIVISION**  
 P.O. Box 2088  
 Santa Fe, New Mexico 87504-2088

**GAS - OIL RATIO TEST**

Operator: Mobil Producing Texas & New Mexico Inc. Pool: Shoe Bar Wolfcamp, South County: Lea  
 Address: 12450 Greenspoint Drive Type of Test: (X) Scheduled:  Completion:  Special:

LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	STATUS	CHOKESIZE	TBG PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU FT/BBL	
		U	S	T							R	WATER BRLS.		GRAV. OIL
Kritti State 31	1	M	31	16	9/20/92	P	35		24	14	45.2	24	45	1875
Lovington Deep Amoco State	3	N	6	17	9/18/92	P	30		24	1	41.1	22	45	2045
Lovington Deep State	3	G	1	17	9/17/92	P	40		24	131	41.1	95	228	2400
Lovington Deep Tates State	1	P	36	16	9/09/92	P	30		24	4	41.1	4	6	1500

**Instructions:**

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.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

*Carla Chapa Ghazizadeh*  
 Signature

Carla Chapa Ghazizadeh, Env. & Reg. Tech. Asst.  
 Printed name and title

Date: 10/23/92 (713) 775-2092  
 Telephone No.



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

RECEIVED  
STATE OF NEW MEXICO  
MAY 21 1991

MAY 21 1991

BRUCE KING  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**AMENDED COMMINGLING ORDER PLC-75**

Mobil Exploration & Production U.S., Inc.  
P.O. Box 633  
Midland, TX 79702

Attention: G. N. Miller

The above-named company is hereby authorized to commingle South Shoe Barr Devonian, South Shoe Bar Upper Penn and Undesignated Wolfcamp Pool production from the following leases:

LEASE NAME: Lovington Deep State Lease  
DESCRIPTION: N/2 NE/4, SW/4 NE/4, N/2 SE/4 Section 1, Township 17 South, Range 35 East, NMPM;

LEASE NAME: Lovington Deep Amoco State Lease  
DESCRIPTION: S/2 NW/4, N/2 SE/4 Section 6, Township 17 South, Range 36 East, NMPM; and

LEASE NAME: Lovington Deep Yates State Lease  
DESCRIPTION: E/2 SE/4 Section 36, Township 16 South, Range 35 East, NMPM.

All in Lea County, New Mexico.

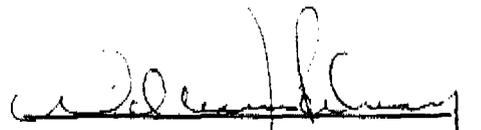
Production from each lease by well tests. (All commingled production must be of marginal nature; further, the operator shall notify the Santa Fe office of the Division in the event any well in the commingled battery becomes capable of top allowable production, at which time the Division will amend this order or take such other action as may be appropriate.

NOTE: This installation shall be installed and operated in accordance with the applicable provisions of Rule 309-B of the Division Rules and Regulations and the Division "Manual for the Installation and Operation of Commingling Facilities." It is the responsibility of the producer to notify the transporter of this commingling authority.

REMARKS: Should the Lovington Deep State Well No. 3 be capable of production in excess of top unit allowable, said production shall be separately metered prior to commingling.

*Amended Administrative Order PLC-75  
Mobil Exploration and Production US, Inc.  
January 9, 1991  
Page 2*

DONE at Santa Fe, New Mexico, on this 9th day of January, 1991.

  
WILLIAM J. LEMAY,  
Division Director

cc: Oil Conservation Division - Hobbs  
NM State Land Office - Santa Fe