



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

BRUCE KING  
GOVERNOR

January 25, 1994

POST OFFICE BOX 1980  
HOBBS, NEW MEXICO 88241-1980  
(505) 393-6161

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

RE: Proposed:

MC \_\_\_\_\_  
DHC X \_\_\_\_\_  
NSL \_\_\_\_\_  
NSP \_\_\_\_\_  
SWD \_\_\_\_\_  
WFX \_\_\_\_\_  
PMX \_\_\_\_\_

Gentlemen:

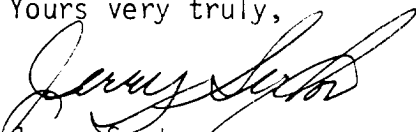
I have examined the application for the:

Marathon Oil Co.	Lou Worthan	#17-E	11-22-37
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Yours very truly,

  
Jerry Sexton  
Supervisor, District 1

/ed

Houston Division  
Production Operations, United States



**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

January 13, 1994

Mr. David Catanach  
Energy and Mineral Department  
Oil Conservation Division  
PO Box 2088  
Santa Fe, NM 87501

RE: Request for Exception to Rule 303-A  
Downhole Commingling  
Marathon Oil Company  
Lou Worthan Well No. 17  
Unit E, 2150' FNL & 350' FWL  
Section 11, T-22-S, R-37-E  
Drinkard and Wantz Abo  
Drinkard Field  
Lea County, New Mexico

Dear Mr. Catanach:

Marathon Oil Company requests administrative approval for an exception to Rule 303-A to permit the downhole commingling of production in the above subject well from the Drinkard and Wantz Abo pools in Lea County, New Mexico.

Currently, the well is dual completed with the Drinkard flowing up the casing and the Wantz Abo flowing up the tubing with a set of Abo perfs isolated by a retrievable bridge plug that is to be removed during the commingling process. Allowing the commingling of the two zones, both formations can be rod pumped, thus allowing both formations to be produced in an unloaded state. Due to the low permeability of the two formations, the producing pressure (Pwf) is expected to be  $\pm 60$  psi or less. This method of artificial lift will extend the life of the well by producing the well to a lower depletion pressure and minimize any associated waste.

Enclosed is pertinent data supporting this application as outlined in Rule 303-A. If additional information is necessary, please contact me at (505) 393-7106.

Sincerely,

A handwritten signature in cursive script, appearing to read 'S.P. Guidry'.

S.P. Guidry  
Northwest Operations  
Production Superintendent

SPG:RDG/9407/kc

Attachments

# **OFFSET OPERATORS**

## **LOU WORTHAN LEASE LEA COUNTY, NEW MEXICO**

Exxon Company USA  
P. O. Box 1600  
Midland, TX 79702-1600  
Attn: Land Department

Shell Western E&P  
P. O. Box 576  
Houston, TX 77001-0576  
Attn: Land Department

Oxy USA Inc.  
P. O. Box 50250  
Midland, TX 79705-0250  
Attn: Land Department

Southwest Royalties, Inc.  
P. O. Drawer 11390  
Midland, TX 79702-1390  
Attn: Jon M. Tate

John H. Hendrix  
223 West Wall, Suite 525  
Midland, TX 79701

Chevron USA Inc.  
P. O. Box 1150  
Midland, TX 79702-1150  
Attn: Land Department

American Exploration Company  
1331 Lamar, Ste 900  
Houston, TX 77010-3086

Amerada Hess Corporation  
1201 Louisiana, Ste 700  
Houston, TX 77002  
Attn: Randy Pharr

Mobil Exploration & Producing U.S. Inc.  
P. O. Box 633  
Midland, TX 79702-0633  
Attn: Larry Coppedge

Texaco Exploration & Production  
P. O. Box 3109  
Midland, TX 79702-3109  
Attn: Land Department

Shell Oil Company  
P. O. Box 2463  
Houston, TX 77252-2463  
Attn: Land Department

Submit 3 Copies  
to Appropriate  
District Office

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-103  
Revised 1-1-89

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

WELL API NO. 30-025-254050000
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No. N/A
7. Lease Name or Unit Agreement Name Lou Worthan
8. Well No. 17
9. Pool name or Wildcat Drinkard/Wantz Abo

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. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Dual Gas Well	
2. Name of Operator Marathon Oil Company	
3. Address of Operator PO Box 2409 Hobbs, NM 88240 (505) 393-7106	
4. Well Location Unit Letter E : 2150 Feet From The North Line and 350 Feet From The West Line Section 11 Township 22-S Range 37-E NMPM Lea County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3368' GR	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐  
OTHER: Remove RBP and Downhole Commingle ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐  
CASING TEST AND CEMENT JOB ☐  
OTHER: ☐

12. 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.

Marathon Oil Company proposes the removal of a retrievable bridge plug (RBP) that isolates a lower set of Wantz Abo perfs (6930-7049') and requests authorization to downhole commingle the Drinkard and Wantz Abo formations. The well will then be rod pumped to remove liquids and produce the well to a lower depletion pressure thus minimizing waste.

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

SIGNATURE Rick D. Gaddis TITLE Petroleum Engineer DATE 01/21/94  
TYPE OR PRINT NAME Rick D. Gaddis TELEPHONE NO. (505) 393-7106

(This space for State Use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

## **REQUEST FOR EXCEPTION TO RULE 303-A**

### **LOU WORTHAN WELL NO. 17** **DRINKARD FIELD**

- (A) Marathon Oil Company  
PO Box 2409  
Hobbs, NM 88240
- (B) Lou Worthan Well No. 17  
Unit E, 2150' FNL & 350' FWL  
Section 11, T-22-S, R-37-E  
Lea County, New Mexico  
Commingled Zones: Drinkard Gas  
Wantz Abo Gas
- (C) A plat of the area is attached showing the lease and offset operations. Also attached is a C-102 for each formation.
- (D) The Form C-116 for each of the Drinkard and Wantz Abo formations are attached. The allocated production for each pool will be based upon the current production declines and the latest GOR tests.
- (E) Production curves for both the Drinkard and Wantz Abo are attached.
- (F) Estimated bottomhole pressure for each zone:  
Drinkard - 552 psi  
Wantz Abo - 1326 psi  
\* During pumping operations the Pwf is expected to be  $\pm 60$  psi for each zone.
- (G) Marathon has commingled the fluids at the surface and has encountered no incompatibility problems.
- (H) If the downhole commingling is approved, the artificial lift system (rod pumping) will increase current levels of production by maintaining the formations in an unloaded state and increase ultimate recoveries for each zone, thus avoiding waste. The value of the produced hydrocarbons will not be altered by downhole commingling.

(I) Production from the latest GOR test shows as follows:

<u>FORMATION</u>	<u>OIL (BPD) *</u>	<u>GAS (MCFD)</u>	<u>WATER (BPD) *</u>
Drinkard	0.5	29	0
Wantz Abo	<u>1.0</u>	<u>109</u>	<u>0.5</u>
TOTAL	<u>1.5</u>	<u>138</u>	<u>0.5</u>

\* Although the GOR test shows no liquid production, the Wantz Abo will produce liquids, if swabbed.

Allocated percentages should be:

<u>FORMATION</u>	<u>OIL (%)</u>	<u>GAS (%)</u>	<u>WATER (%)</u>
Drinkard	33.3	10.0	0
Wantz Abo**	<u>66.7</u>	<u>90.0</u>	<u>100</u>
TOTAL	<u>100.0</u>	<u>100.0</u>	<u>100</u>

\*\* Gas percentages was increased due to the inclusion of the previously isolated lower ABO Zone.

- (J) Ownership of the two pools to be commingled are in common and correlative rights will not be violated.
- (K) By copy of this letter, we are notifying all offset operators of the proposed commingling.

Submit to Appropriate  
District Office  
State Lease - 4 copies  
Fee Lease - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

**OIL CONSERVATION DIVISION**

**DISTRICT I**  
P.O. Box 1980, Hobbs, NM 88240

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

**DISTRICT II**  
P.O. Drawer DD, Artesia, NM 88210

**DISTRICT III**  
1000 Rio Brazos Rd., Aztec, NM 87410

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

All Distances must be from the outer boundaries of the section

Operator Marathon Oil Company			Lease Lou Worthan		Well No. 17
Unit Letter E	Section 11	Township 22-S	Range 37-E	County Lea	
Actual Footage Location of Well: 2150 feet from the North line and 350 feet from the West line					
Ground level Elev. 3368'	Producing Formation Drinkard		Pool Drinkard	Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.

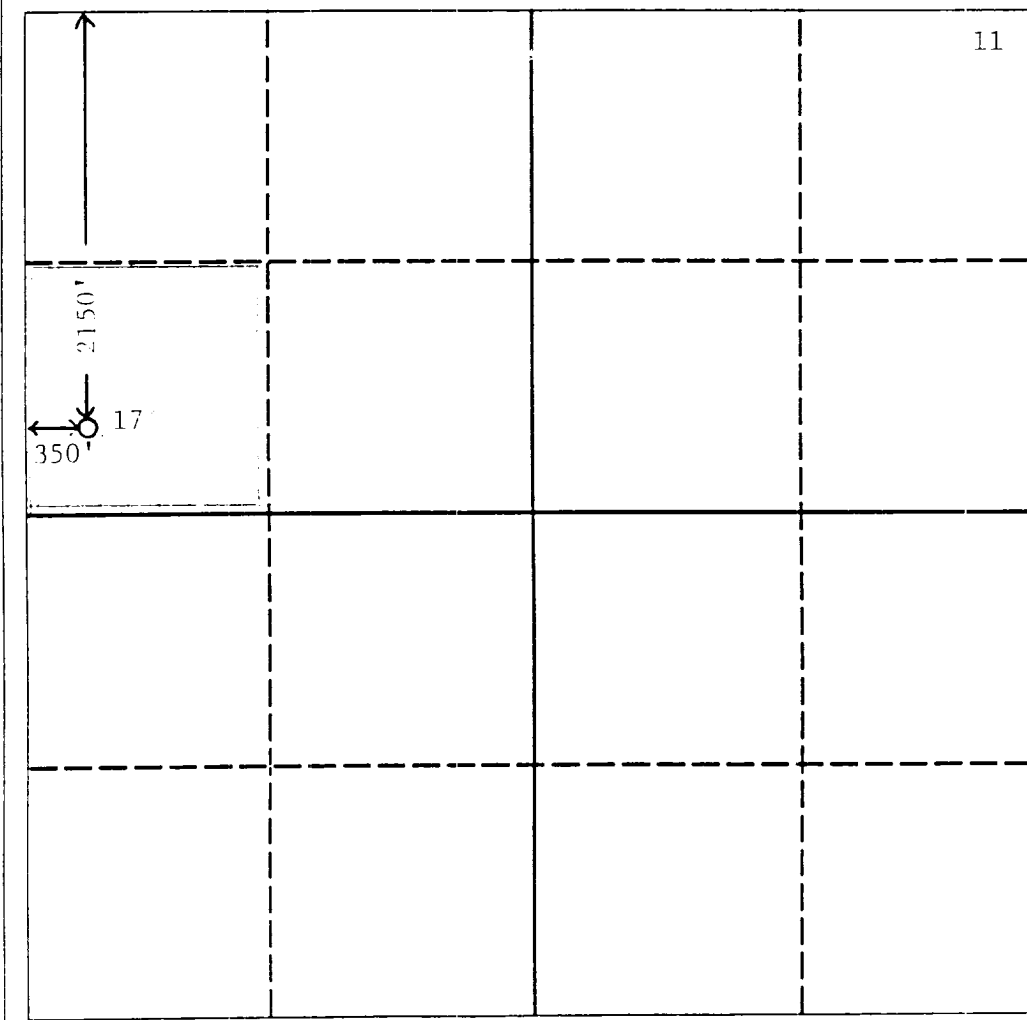
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation \_\_\_\_\_

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



**OPERATOR CERTIFICATION**

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

Signature

*Rick D. Gaddis*

Printed Name

Rick D. Gaddis

Position

Petroleum Engineer

Company

Marathon Oil Company

Date

January 21, 1994

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Signature & Seal of  
Professional Surveyor

See Original C-102

Certificate No.

Submit to Appropriate  
District Office  
State Lease - 4 copies  
Fee Lease - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

OIL CONSERVATION DIVISION

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Marathon Oil Company			Lease Lou Worthan		Well No. 17
Unit Letter E	Section 11	Township 22-S	Range 37-E	County Lea	NMPM
Actual Footage Location of Well: 2150 feet from the North line and 350 feet from the West line					
Ground level Elev. 3368'	Producing Formation Abo		Pool Wantz Abo	Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes

☐ No

If answer is "yes" type of consolidation

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

OPERATOR CERTIFICATION

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

Signature

*Rick D. Gaddis*

Printed Name

Rick D. Gaddis

Position

Petroleum Engineer

Company

Marathon Oil Company

Date

January 21, 1994

SURVEYOR CERTIFICATION

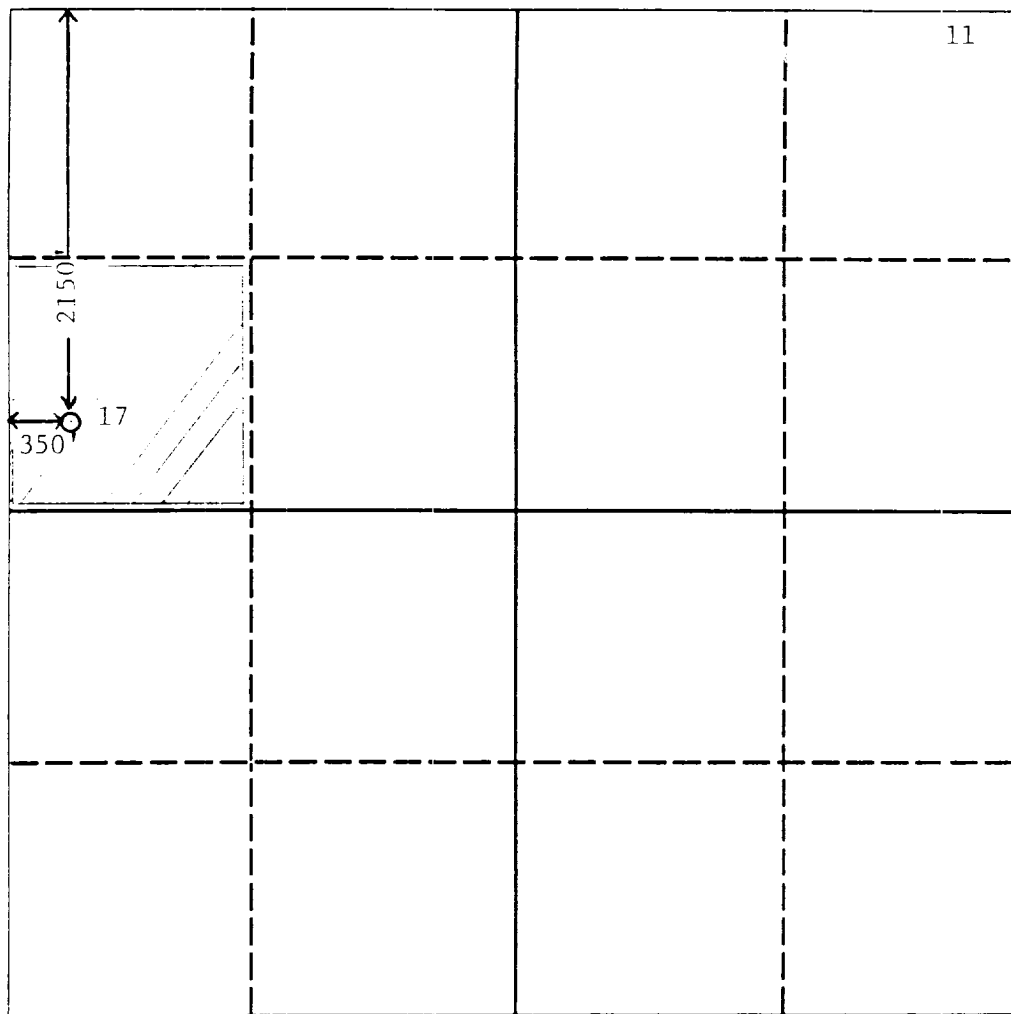
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Signature & Seal of  
Professional Surveyor

See Original C-102

Certificate No.



0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0



# OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

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

## GAS - OIL RATIO TEST

Operator Marathon Oil Company		Pool Drinkard		County Lea											
Address PO Box 2409 Hobbs, NM 88240		TYPE OF TEST - (X)	Scheduled <input type="checkbox"/>	Completion <input type="checkbox"/>	Special <input checked="" type="checkbox"/>										
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKES SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BL.		
		U	S	T						R	WATER BBL.S.	GRAV. OIL		OIL BBL.S.	GAS M.C.F.
Lou Worthan	17	E	11	22S	37E	01/10/94	Open	40	N/A	24	0	-	0	29	-

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



Signature

Rick D. Gaddis, Petroleum Engineer

Printed name and title

January 21, 1994 (505) 393-7106

Date

Telephone No.

### 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.)

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

State of New Mexico

Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-116  
Revised 1/1/89

### GAS - OIL RATIO TEST

Operator	Marathon Oil Company	Pool	Wantz Abo	County	Lea				
Address	PO Box 2409, Hobbs, NM 88240	(505) 393-7106	TYPE OF TEST - (X)	Scheduled	Completion				
LEASE NAME	WELL NO.	LOCATION	DATE OF TEST	CHOKE SIZE	IBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST	GAS - OIL RATIO
		U S T R						WATER BBL.S. GRAV. OIL OIL BBL.S. GAS M.C.F.	CU FT/BBL
Lou Worthan	17	E 11 22S 37E	01/10/94	Open	40	N/A	24	0 0 0	109 -

#### 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.

*Rick D. Gaddis*

Signature

Rick D. Gaddis, Petroleum Engineer

Printed name and title

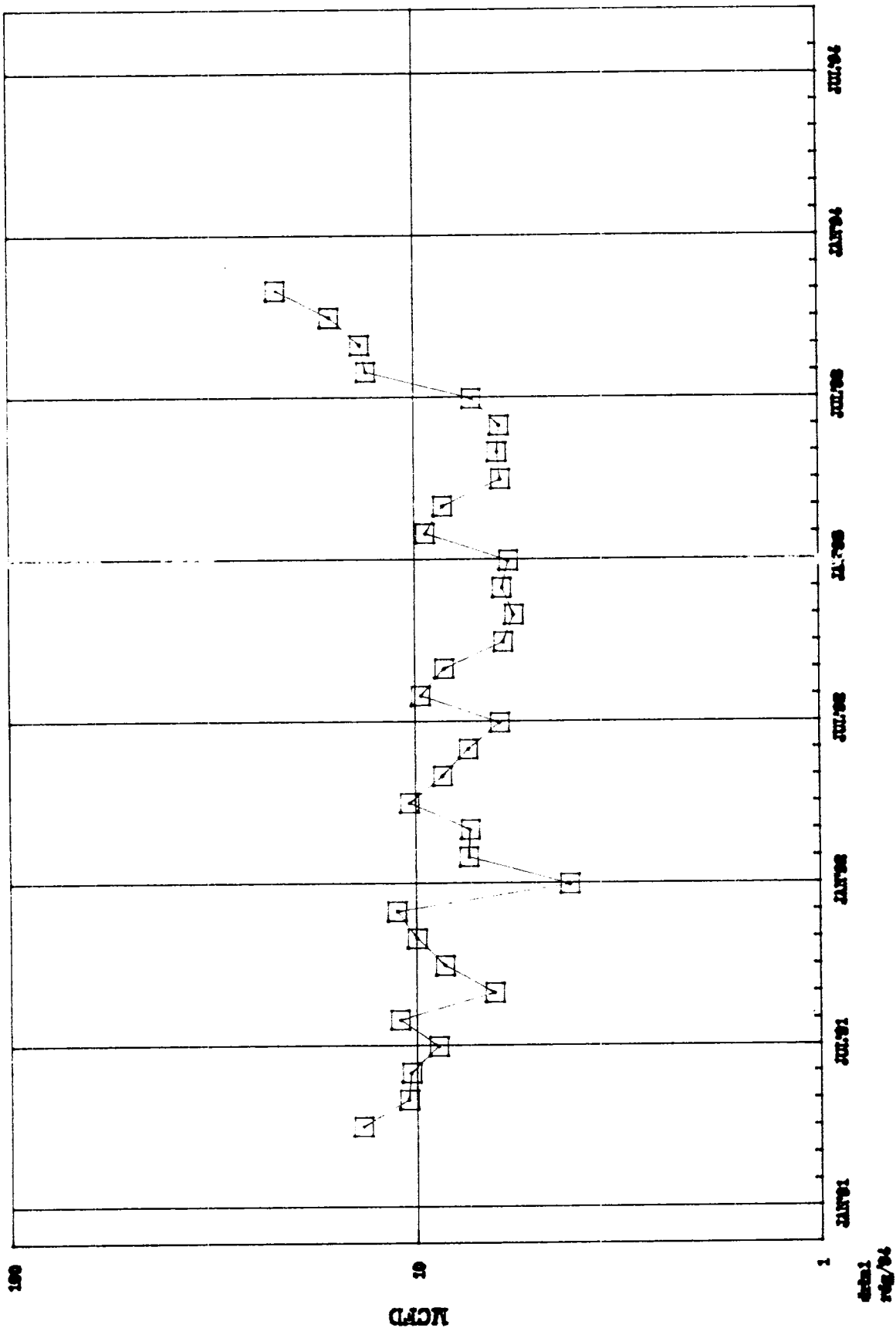
January 21, 1994 (505) 393-7106

Date

Telephone No.

# LOU WORTHAN WELL No. 17

Daily Drinkard Gas Production



Houston Division  
Production Operations, United States



**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

January 21, 1994

Offset Operators  
Lou Worthan Well No. 17  
(Mailing List Attached)

RE: Request for Exception to Rule 303-A  
Downhole Commingling  
Lou Worthan Well No. 17  
Unit E, 2150' FNL & 350' FWL  
Drinkard and Wantz Abo Formation  
Drinkard Field  
Lea County, New Mexico

Gentlemen:

Marathon Oil Company has filed an application with the New Mexico Oil Conservation Division to downhole commingle the above captioned well. Enclosed, please find a copy of the application as outlined in Rule 303-A.

If you are in agreement and waive all objections to the downhole commingling, please sign and return one copy to Marathon Oil Company at the above address.

Sincerely,

A handwritten signature in cursive script, appearing to read 'S.P. Guidry'.

S.P. Guidry  
Northwest Operations  
Production Superintendent

SPG:RDG/9406/kc  
Attachment

-----  
Agreed and accepted this \_\_\_\_\_ day of \_\_\_\_\_, 1994 by  
\_\_\_\_\_ as representative of \_\_\_\_\_.

January 21, 1994

Offset Operators  
Lou Worthan Well No. 17  
(Mailing List Attached)

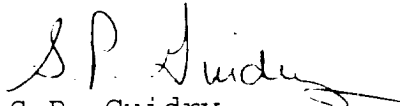
RE: Request for Exception to Rule 303-A  
Downhole Commingling  
Lou Worthan Well No. 17  
Unit E, 2150' FNL & 350' FWL  
Drinkard and Wantz Abo Formation  
Drinkard Field  
Lea County, New Mexico

Gentlemen:

Marathon Oil Company has filed an application with the New Mexico Oil Conservation Division to downhole commingle the above captioned well. Enclosed, please find a copy of the application as outlined in Rule 303-A.

If you are in agreement and waive all objections to the downhole commingling, please sign and return one copy to Marathon Oil Company at the above address.

Sincerely,



S.P. Guidry  
Northwest Operations  
Production Superintendent

SPG:RDG/9406/kc  
Attachment

-----  
Agreed and accepted this \_\_\_\_\_ day of \_\_\_\_\_, 1994 by  
\_\_\_\_\_ as representative of \_\_\_\_\_.

# PROPOSED WELL CONFIGURATION

## LOU WORTHAN WELL NO. 17 DRINKARD FIELD

2150' FNL & 350' FWL  
SECTION 11, T-22S, R-37E  
LEA COUNTY, NEW MEXICO

TD: 7550'    PBD: 7169'  
KB: 3382'    GL: 3370'

SURFACE: 9 5/8", 32#, H-40 &  
36#, K-55 set at 1240'. Cmt  
with 475 sxs.

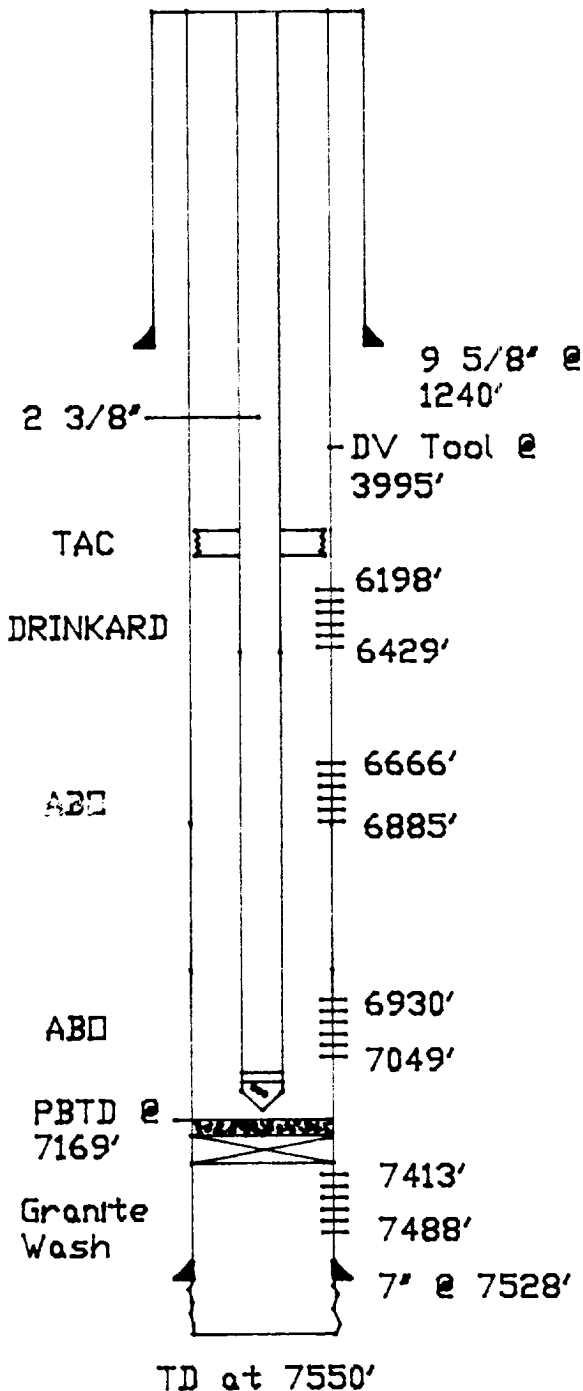
PRODUCTION: 7", 23 & 29# set  
at 7528'. Cmt w/ 2150 sxs.  
DV-Tool at 3995'.

TUBING: 2 3/8", 4.7#, J-55 to  
7150', TAC at 6175'.

### PRESENT COMPLETIONS:

Drinkard: 6198-6288' (24 holes)  
6315-6429' (23 holes)

Wantz Abo: 6666-6885' (24 holes)  
6930-7064' (25 holes)



**HISTORY:** Drilled December, 1976 as Granite Wash prospect. The GW was unproductive resulting in the well being completed as a Drinkard/Wantz Abo Dual Completion. The Wantz Abo (6984-7064') was acidized & pot. at 4 BD & 968 MCFD. The Drinkard (6198-6288') was acidized and frac'd w/ 7500# of 100 mesh & 30,000# of 20-40 sand. The Drinkard pot. at 859 MCFD. In May 1985, additional perms (6666-6885', 6930-7049') were shot in the Wantz Abo. These perms were treated w/ acid then acid frac'd w/ 20% HCL and 43 tons CO2. Also at this time the Drinkard had additional perf's (6315-6429') shot and acidized.

LOU WORTHAN WELL NO. 17  
DRINKARD FIELD

2150' FNL & 350' FWL  
SECTION 11, T-22S, R-37E  
LEA COUNTY, NEW MEXICO

TD: 7550' PBD: 7169'  
KB: 3382' GL: 3370'

SURFACE: 9 5/8", 32#, H-40 &  
36#, K-55 set at 1240'. Cmt  
with 475 sxs.

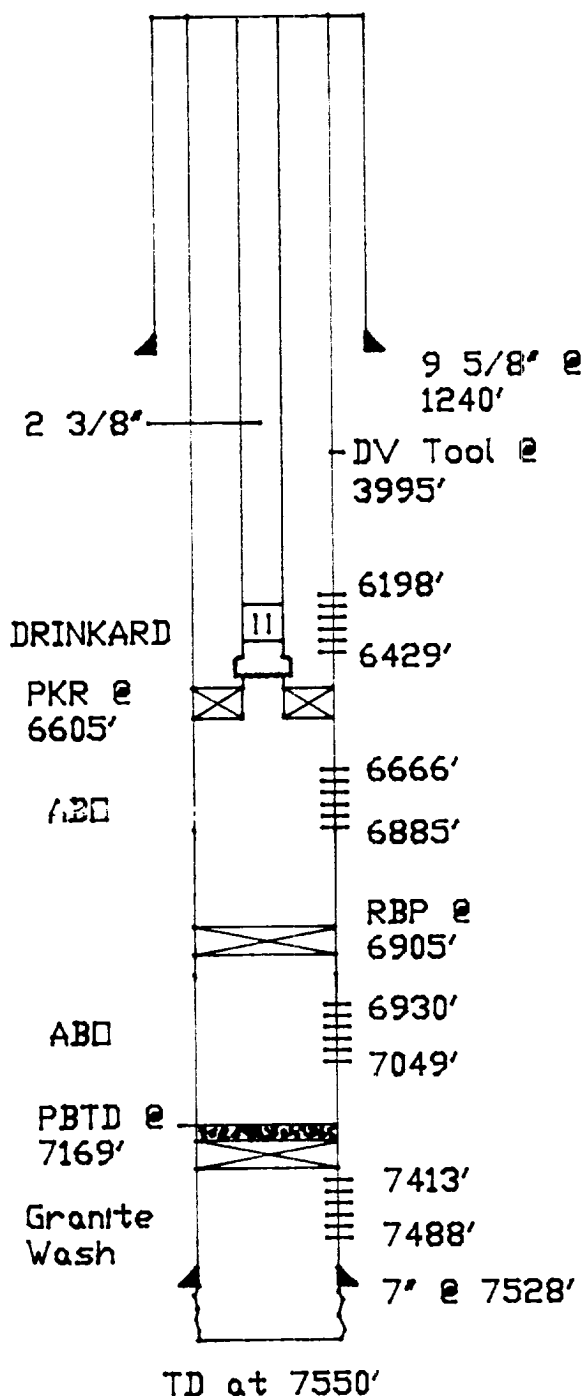
PRODUCTION: 7", 23 & 29# set  
at 7528'. Cmt w/ 2150 sxs.  
DV-Tool at 3995'.

TUBING: 2 3/8", 4.7#, J-55 to  
6368', Baker Sliding sleeve,  
2 3/8" to 6599', Baker On-  
off Tool w/ 1.78" profile,  
6' N-80 sub and 7" Baker  
Lok-Set Packer.

PRESENT COMPLETIONS:

Drinkard: 6198-6288' (24 holes)  
6315-6429' (23 holes)

Wantz Abo: 6666-6885 (24 holes)



HISTORY: Drilled December, 1976 as Granite Wash prospect. The GW was unproductive resulting in the well being completed as a Drinkard/Wantz Abo Dual Completion. The Wantz Abo (6984-7064') was acidized & pot. at 4 BD & 968 MCFD. The Drinkard (6198-6288') was acidized and frac'd w/ 7500# of 100 mesh & 30,000# of 20-40 sand. The Drinkard pot. at 859 MCFD. In May 1985, additional perms (6666-6885', 6930-7049') were shot in the Wantz Abo. These perms were treated w/ acid then acid frac'd w/ 20% HCL and 43 tons CO<sub>2</sub>. Also at this time the Drinkard had additional perf's (6315-6429') shot and acidized.

LAND PLAT DRINKARD AREA



# LOU WORTHAN WELL No. 17

Daily Netiz Abo Gas Production

