

OIL CONSERVATION DIVISION

RECEIVED



**Marathon
Oil Company**

91 JAN 26 AM

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 ± 60 psi or less. This method or 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 that reads '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

OIL CONSERVATION DIVISION
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 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 GAS WELL 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:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: <u>Remove RBP and Downhole Commingle</u> <input checked="" type="checkbox"/>		OTHER: _____ <input type="checkbox"/>	

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 perms (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
(505)
TYPE OR PRINT NAME Rick D. Gaddis TELEPHONE NO. 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
Commingle 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 ± 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
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

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

WELL LOCATION AND ACREAGE DEDICATION PLAT
 All Distances must be from the outer boundaries of the section

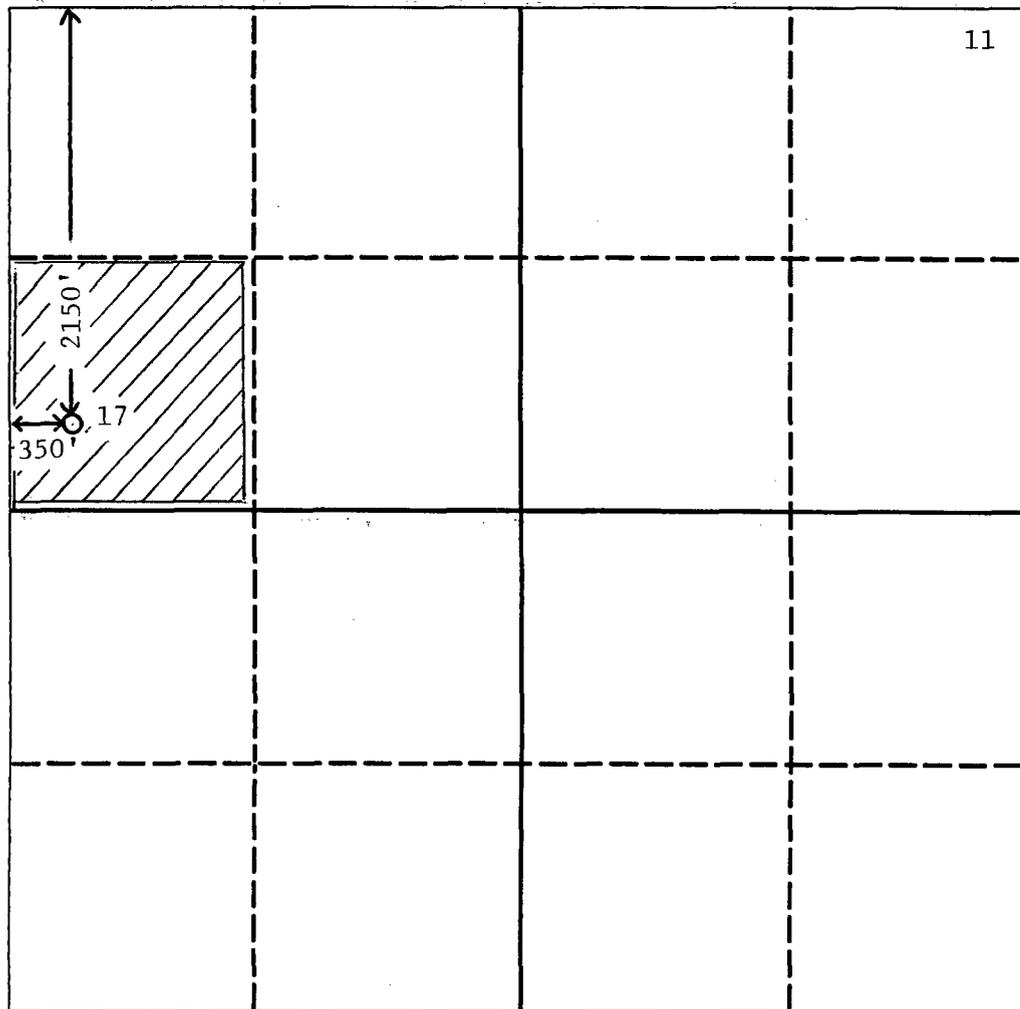
Operator Marathon Oil Company			Lease Lou Worthan			Well No. 17		
Unit Letter E	Section 11	Township 22-S	Range 37-E		County Lea			
Actual Footage Location of Well: 2150 feet from the North line and 350 feet from the West line								
Ground level Elev. 3368'		Producing Formation Drinkard			Pool Drinkard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

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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

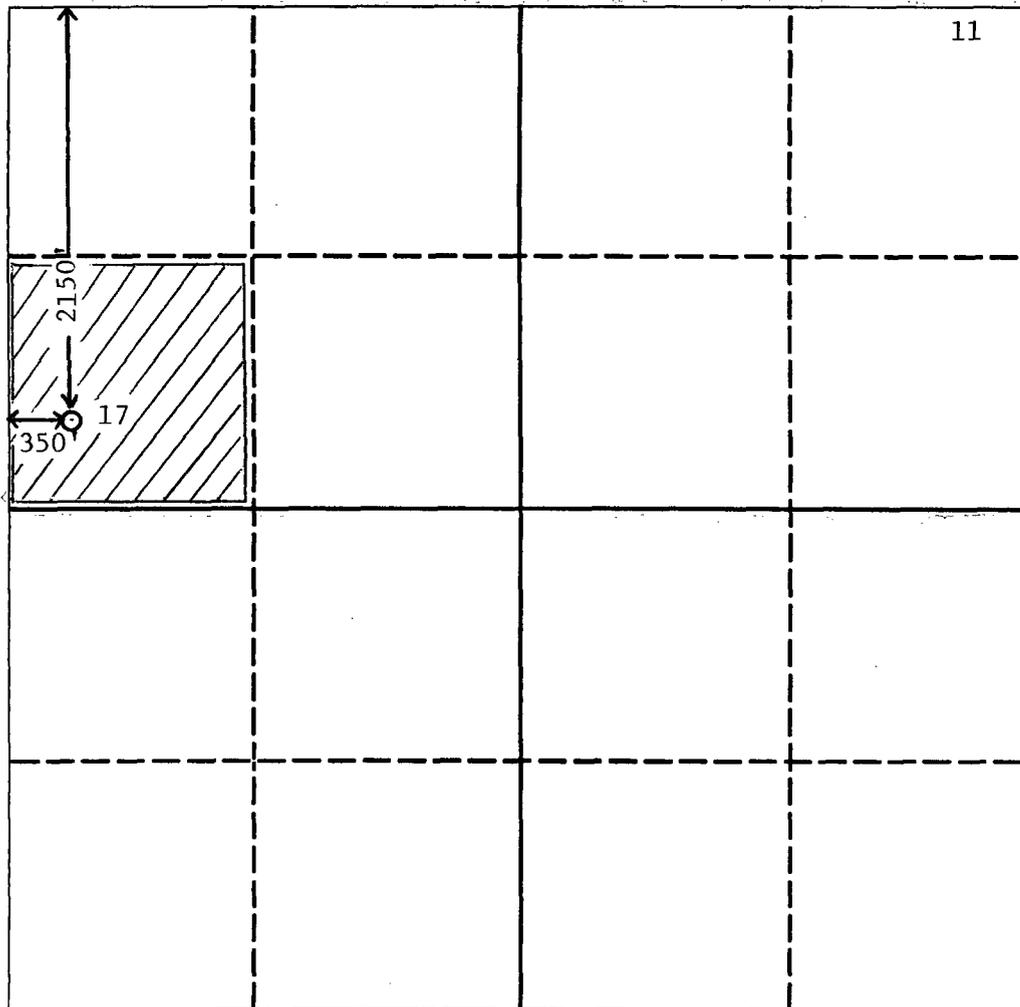
WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

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
-----------------------------	----------------------------	-------------------	--------------------------------

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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

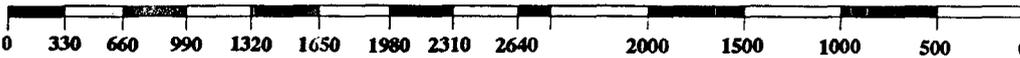
SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Signature & Seal of Professional Surveyor

See Original C-102

Certificate No.



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

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

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"/> Special <input checked="" type="checkbox"/>		Completion <input type="checkbox"/>											
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU./FT/BBL.	
		U	S	T							R	WATER BBL.S.	GRAV. OIL		OIL BBL.S.
Lou Worthan	17	E	11	22S	37E	F	Open	40	N/A	24	0	-	0	29	-

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.

[Handwritten Signature]

Signature

Rick D. Gaddis, Petroleum Engineer

Printed name and title

January 21, 1994 (505) 393-7106

Date

Telephone No.

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 <input type="checkbox"/> Special <input checked="" type="checkbox"/>												
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS M.C.F.	GAS - OIL RATIO CU FT/BBL.		
		U	S	T							R	WATER BBL.S.			GRAV. OIL	
Lou Worthan	17	E	11	22S	37E	01/10/94	F	Open	40	N/A	24	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

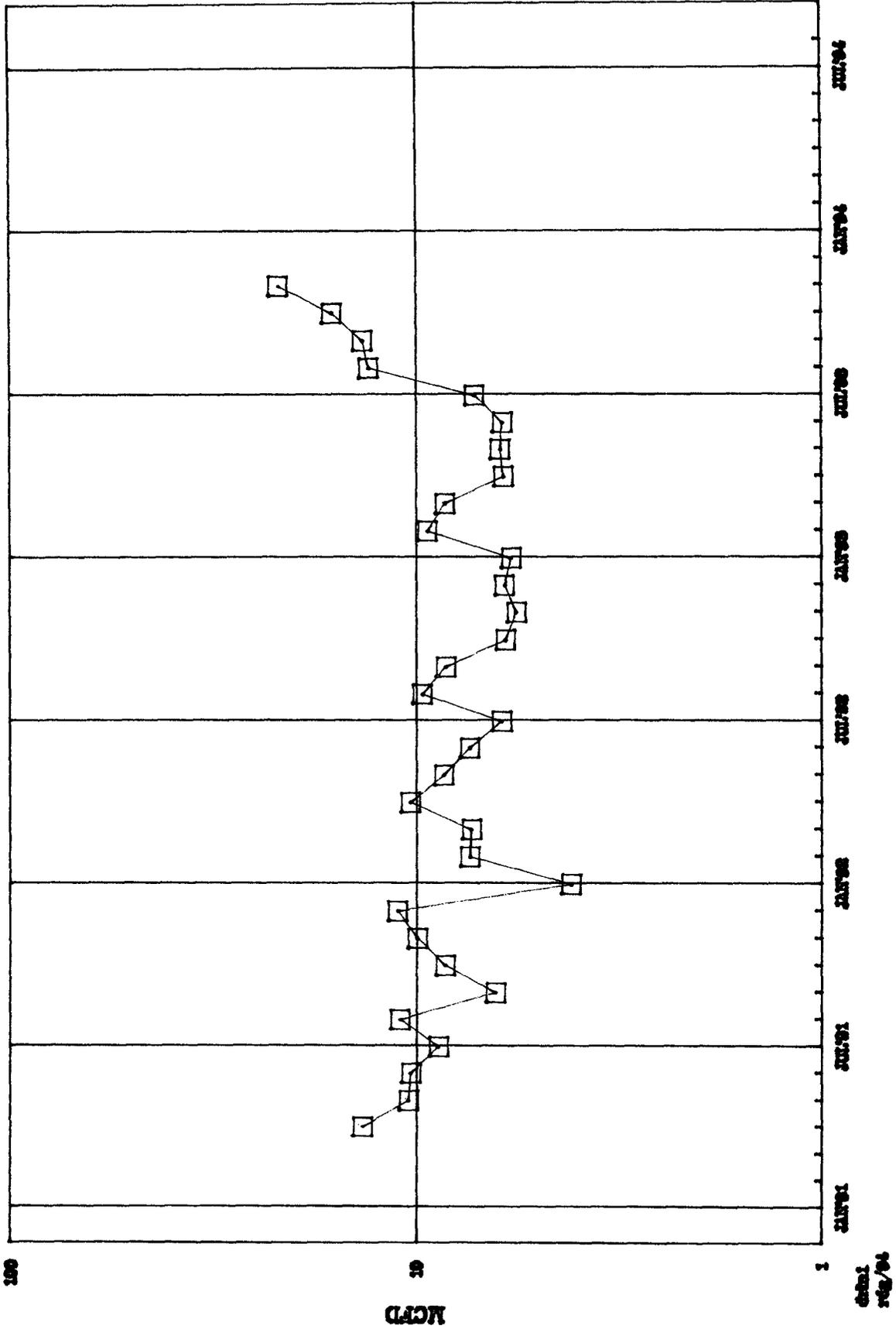
Rick D. Gaddis, Petroleum Engineer

Printed name and title
 January 21, 1994 (505) 393-7106

Date Telephone No.

LOU WORTHAN WELL No. 17

Daily Drinkard Gas Production





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 that reads '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)

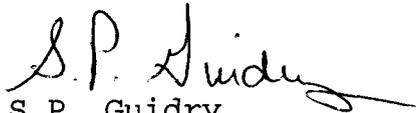
RE: Request for Exception to Rule 303-A
Downhole Commingling
Lou Worthan Well No. 17
Unit E, 2150' FNL & 350' FWL
Drinkard and Wantz Abo Formation
Drinkard Field
Lea County, New Mexico

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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.

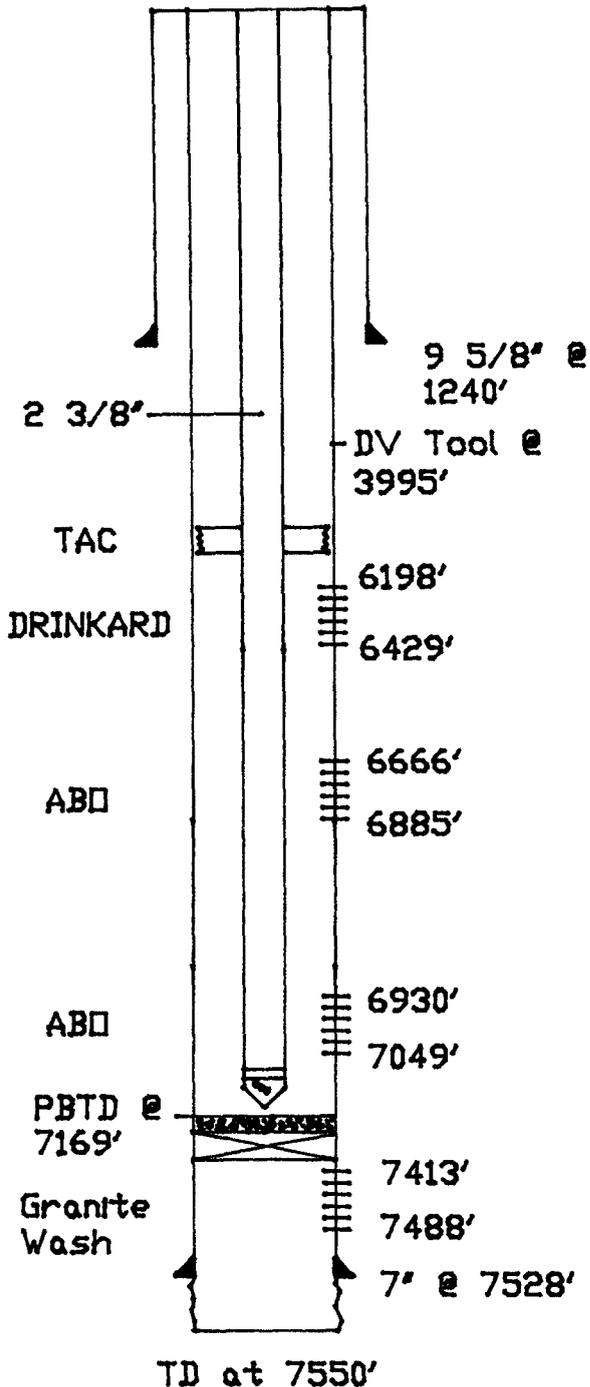
PRODUCTION: 7", 23 & 29# set
at 7528'. Cmt w/ 2150 sxs.
DV-Tool at 3995'.

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 BO & 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 perfs (6666-6885', 6930-7049') were shot in the Wantz Abo. These perfs 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.

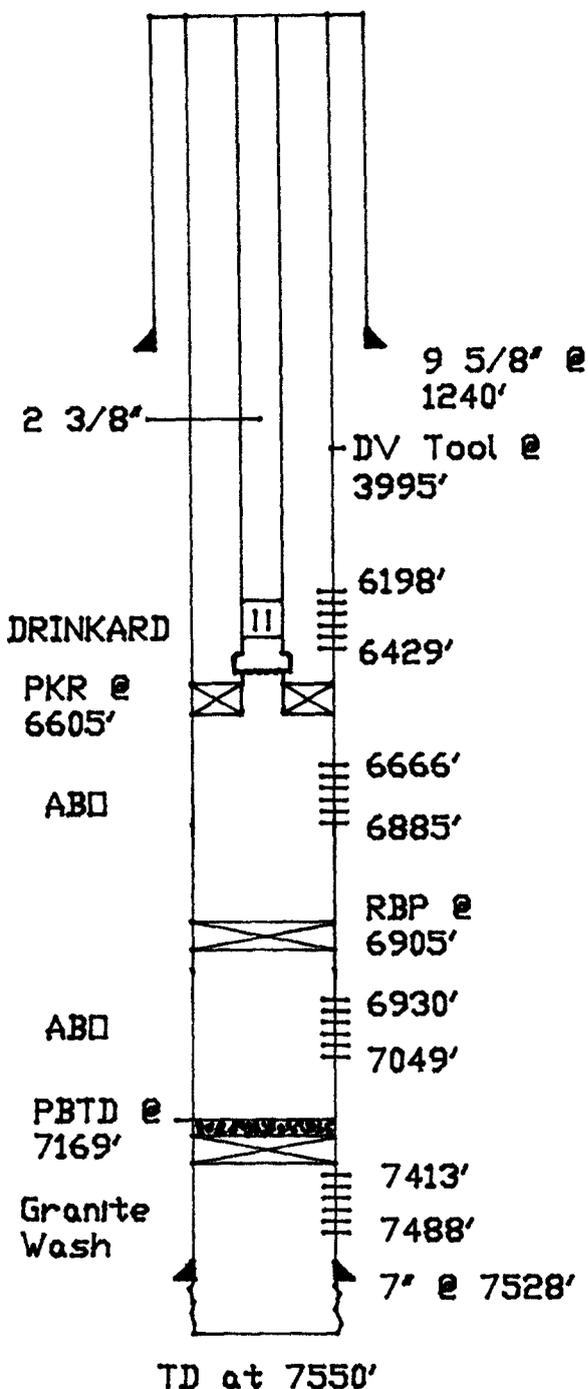
PRODUCTION: 7", 23 & 29# set
at 7528'. Cmt w/ 2150 sxs.
DV-Tool at 3995'.

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)

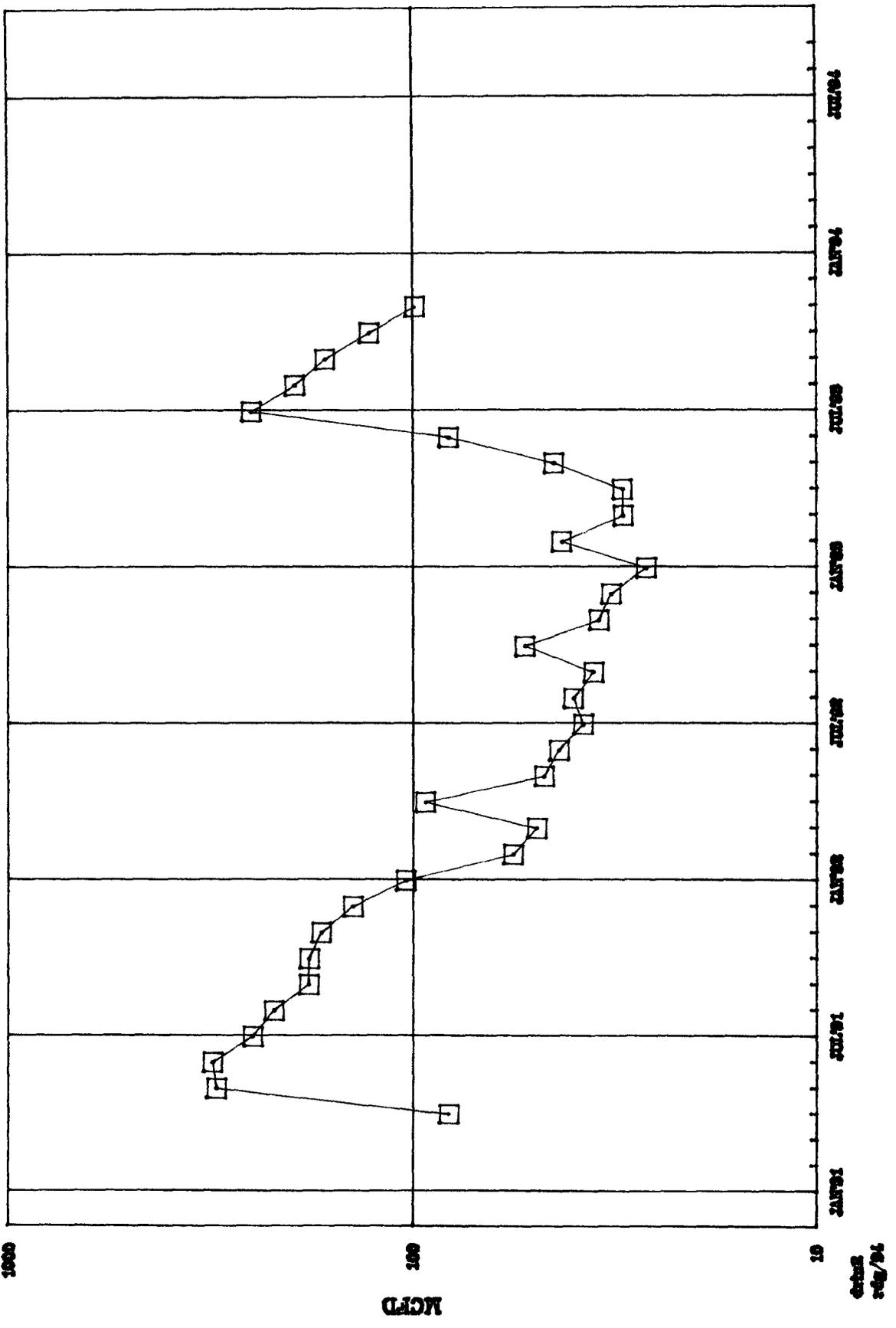
Wantz Abo: 6666-6885 (24 holes)



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 BO & 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 perfs (6666-6885', 6930-7049') were shot in the Wantz Abo. These perfs 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

Daily Vents Above Gas Production





STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
RECEIVED

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

94 JAN 31 AM 8 50

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:

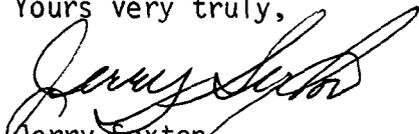
I have examined the application for the:

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