



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

GARREY CARRUTHERS
GOVERNOR

6-12-90

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 _____

GHC

Gentlemen:

I have examined the application for the:

Marathon oil Co. W. S. Marshall B #3-K 27-21-37
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

Have used all info & new steel loggers

OK JS

Yours very truly,

Jerry Sexton
Jerry Sexton
Supervisor, District 1

/ed

6/19/90 - David C. & Dan Price
Agreeded to leave Tubh
will class as gas.

Jerry
from the swab test
after w/o it looks
like the Tubh is
probably not a gas
well any longer.



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

June 6, 1990

Mr. David Catanach
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Request for Exception to Rule 303-A
Downhole Commingling
Marathon Oil Company
W. S. Marshall "B" Well No. 3
Unit "K", 1,980' FSL and 1,980' FWL
Section 27, T-21-S, R-37-E
Tubb and Drinkard Formations
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 subject well from the Tubb and Drinkard pools in Lea County, New Mexico.

Currently, the well is equipped as a dual producer with the Tubb flowing up the annulus and the Drinkard flowing up the tubing. A workover was performed in December, 1989, where both zones had perforations added and were stimulated with acid. Based on the swab test results, the Tubb and Drinkard have the combined potential to produce up to 40 BOPD. This well currently has no artificial lift system, and after economic evaluation on an individual zone basis, artificial lift can not be justified. However, if the two producing zones are allowed to be downhole commingled, the installation of an artificial lift system becomes economically justified.

Therefore, in the interest of conservation and prevention of waste, we propose to downhole commingle the Tubb and Drinkard zones and place the well on artificial lift. Enclosed is pertinent data supporting this application as outlined in Rule 303-C. If additional information is necessary, please contact Donald Price at (915) 682-8258.

Sincerely,

William D. Holmes
Midland Operations Superintendent

WDH/DGP/099.274/sk

- (a) Marathon Oil Company
P. O. Box 552
Midland, Texas 79702
- (b) W. S. Marshall "B" Well No. 3
Unit "K", 1,980' FSL and 1,980' FWL
Section 27, T-21-S, R-37-E
Lea County, New Mexico
Commingled Zones: Tubb and Drinkard
- (c) Plats (2) of area attached.
- (d) The Form C-116 for the Tubb and Drinkard zones are attached. Also attached are the swab test results showing liquid production from each zone after recompletion. These values will be used to allocate the liquid production for each zone.
- (e) Production decline curves for both the Tubb and Drinkard zones are attached.
- (f) BHP Survey's recorded with Amerada bombs are attached.
Tubb: 488 psig
Drinkard: 430 psig
- (g) Marathon Oil Company has commingled these fluids at the surface and has encountered no incompatibility problems. Also, there are waterflood projects in the area which include the Tubb and Drinkard. Therefore, no reservoir damage will result from downhole commingling.
- (h) As previously stated in the body of the letter, if the downhole commingling is approved, a artificial lift system can be installed on the well resulting in an extended economic life of the well.

The value of the produced hydrocarbons should not be altered by commingling production. Therefore, the same market price should be obtained as if both zones were produced individually.

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JUN 11 1959

MOBILE ALABAMA

(i) Production from latest GOR test shows:

	<u>GAS (MCFPD)</u>
Tubb	7
Drinkard	<u>37</u>
	44

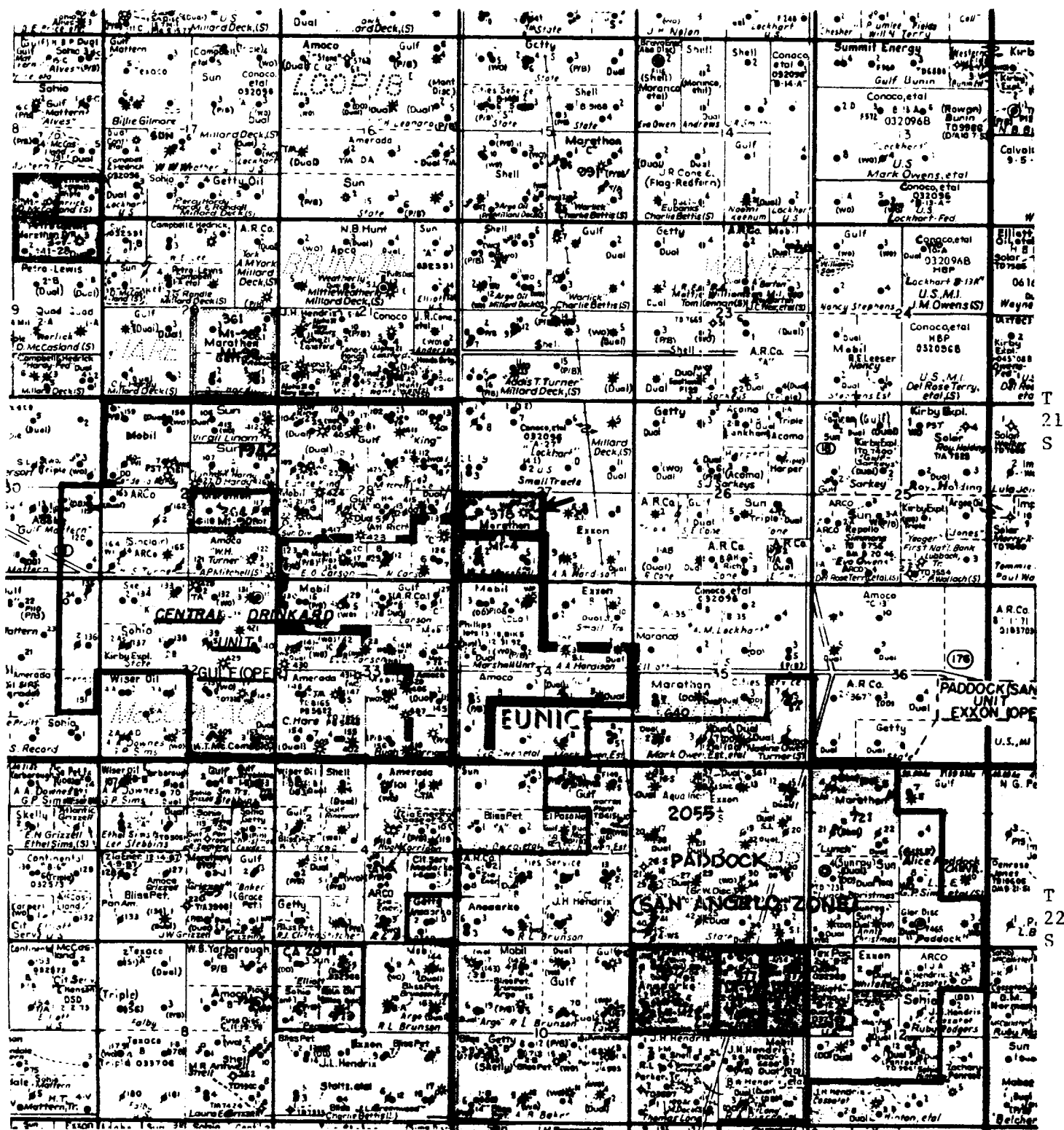
Production estimates from swab tests show:

	<u>OIL (BOPD)</u>	<u>WATER (BWPD)</u>
Tubb	10.0	50.0
Drinkard	<u>30.0</u>	<u>24.0</u>
	40.0	74.0

Therefore the allocated percentages should be:

	<u>OIL (%)</u>	<u>GAS (%)</u>	<u>WATER (%)</u>
Tubb	25	16	68
Drinkard	<u>75</u>	<u>84</u>	<u>32</u>
	100	100	100

- (j) Ownership of the two pools to be commingled is common and correlative rights will not be violated.
- (k) By copy of this letter, we are notifying all offset operators of the proposed commingling by certified mail. (See attached address list).



R-37E

MARATHON OIL COMPANY

W. S. MARSHALL "B" NO. 3

1980' FWL & 1980' FSL, SEC. 27, T-21-S, R-37-E

➔ ⚙ SUBJECT WELL

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	W. S. Marshall "B"	Well No.	3
Unit Letter	K	Section	27	Township	21-South
				Range	37-East
				County	NMPM Lea

Actual Footage Location of Well:

1,980'	feet from the	South	line and	1,980'	feet from the	West	line
Ground level Elev.	3,410'	Producing Formation	Pool	Dedicated Acreage:	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

William D. Holmes

Printed Name

William D. Holmes

Position

Operations Superintendent

Company

Marathon Oil Company

Date

6-8-90

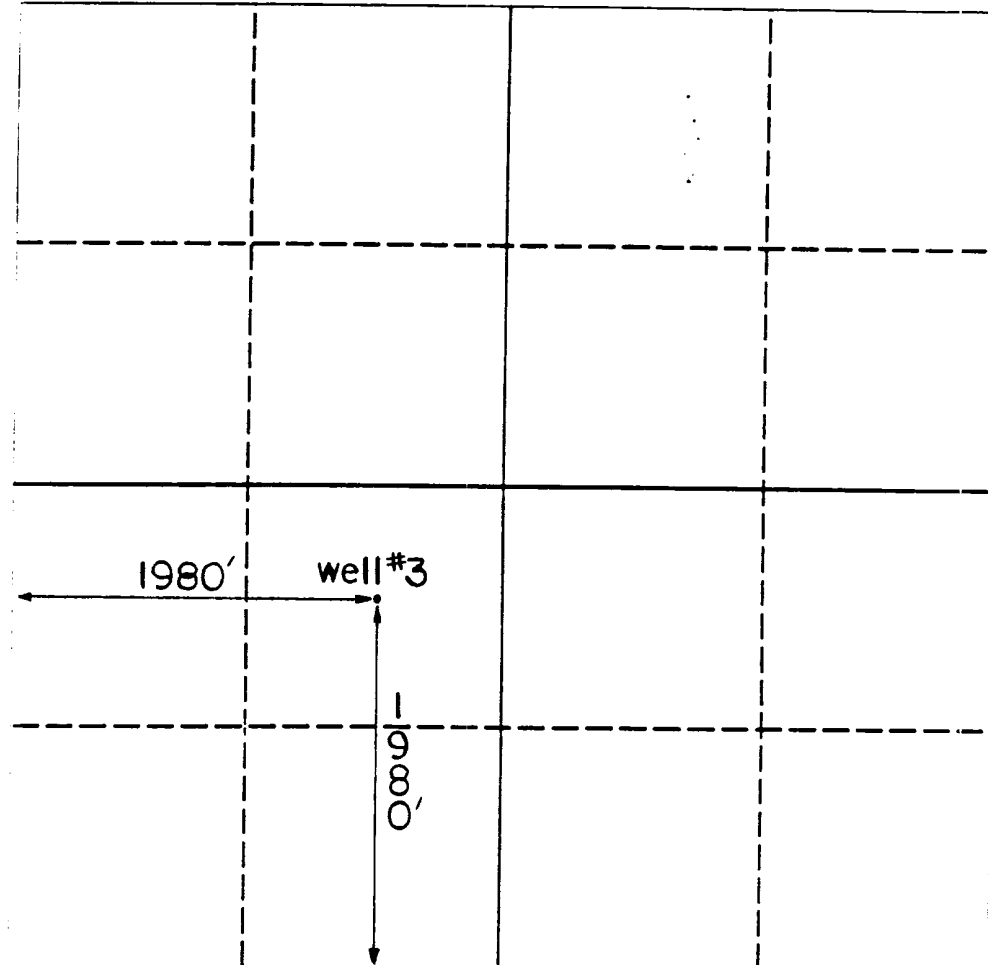
SURVEYOR CERTIFICATION

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

Certificate No.



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

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

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

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

GAS - OIL RATIO TEST

Operator Marathon Oil Company		Pool Tubb Gas		County Lea												
Address P. O. Box 552, Midland, Texas 79702		TYPE OF TEST - (X)		Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>												
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	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		GAS M.C.F.	
W. S. Marshall "B"	3	K	27	21	37	5-25-90	F	--	53	Gas	24	0	--	0	7	--

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

J. R. Jenkins Hobbs Production Sup't.
Printed name and title

5-29-90 (915) 682-1626
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 Drinkard		County Lea	
Address P. O. Box 552, Midland, Texas		79702		TYPE OF TEST - (X)	
LEASE NAME W. S. Marshall "B"		WELL NO. 3		DATE OF TEST 5-25-90	
		LOCATION U S T R		CHOKE SIZE --	
		TBG. PRESS. 50		DAILY ALLOW-ABLE Gas	
		LENGTH OF TEST 24		WATER BRLS. 0	
		PROD. DURING TEST GRAV. OIL 0		GAS M.C.F. 37	
		GAS - OIL RATIO CU FT/BBL --			

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.
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(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

J. R. Jenkins Hobbs Production Sup't.

Printed name and title

5-29-90

Date

(915) 682-1626
Telephone No.

RECEIVED

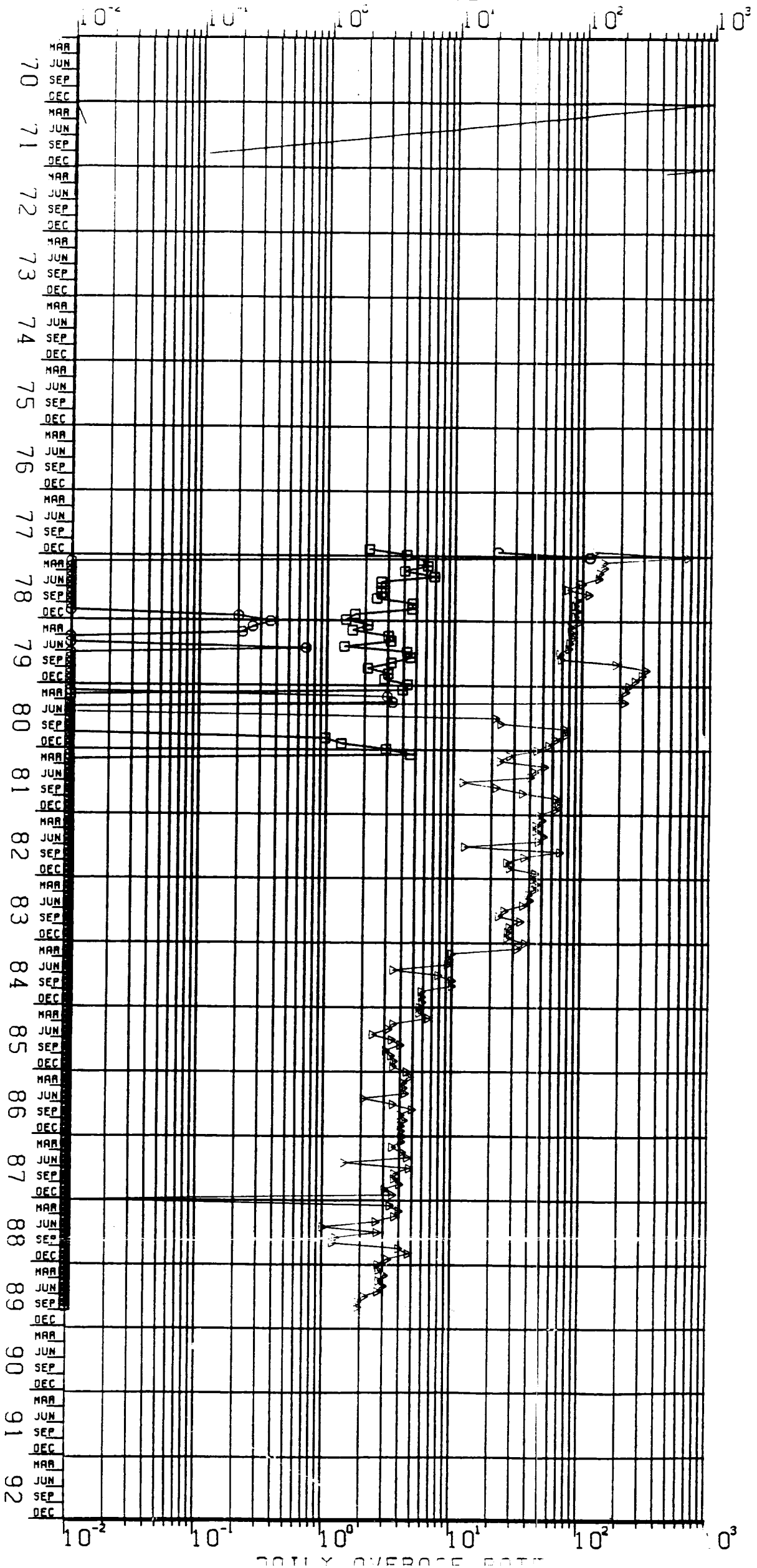
JUN 11 1990

MOBILE OFFICE

TOTAL LOAD	1106 BW	TOTAL RECOVERY	142 BO, 363 BW
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FIELD - TUBB
 RESERVOIR - TUBB
 LEASE - MARSHALL, W. S. 'B'
 WELL - W. S. MARSHALL-B-NO. 3

DAILY AVERAGE RATE



DAILY AVERAGE RATE

O+C CALENDAR DLY AVG
 GAS CALENDAR DLY AVG
 WTR CALENDAR DLY AVG

0 1 2 3 4 5 6 7 8 9

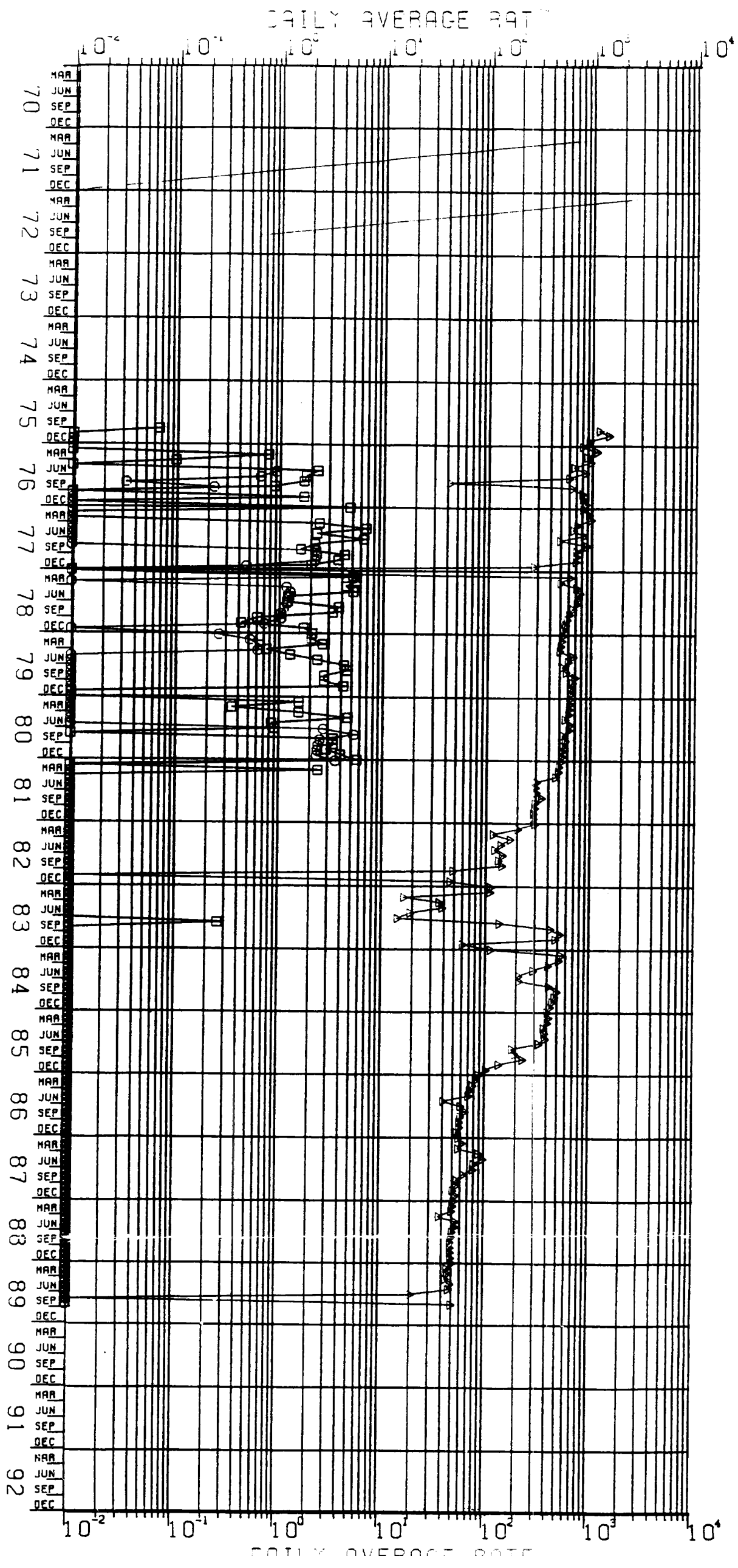
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JUN 11 1990

OFFICE
HONORARY OFFICE

FIELD - DRINKARD
 RESERVOIR - DRINKARD
 LEASE - MARSHALL, W. S. 'B'
 WELL - W. S. MARSHALL-B-NO. 3T

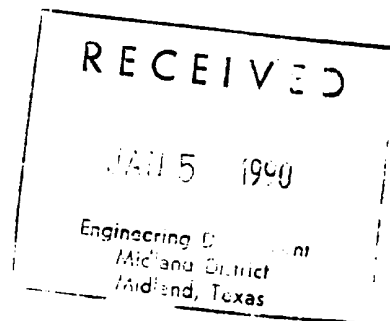


O+C CALENDAR DLY AVG ☐
 GAS CALENDAR DLY AVG ☐
 MTR CALENDAR DLY AVG ☐

MARATHON OIL COMPANY
 W. S. MARSHALL B # 3 TUBB
 DATE: 1-3-90
 PERFORATIONS: 5914 - 6198
 STATIC BOTTOM HOLE PRESSURE

DEPTH	PRESSURE (PSIG)	\triangle P	\triangle D	GRADIENT
8'	412#			
3556'	456#	44#	3550'	.012
4556'	467#	11#	1000'	.011
5056'	475#	8#	500'	.016
5556'	481#	6#	500'	.012
5806'	485#	4#	250'	.016
6056'	488#	3#	250'	.012

This well is a dual Tubb and Drinkard. Bottomhole pressure bomb was run to mid perms of the Tubb at 6056'. At this time a plug was in on-off tool at 6252' and a sliding sleeve at 6245' was open.



INTRACOMPANY CORRESPONDENCE

TO J.R. Jenkins DATE 4/3/90
 OFFICE Midland, Texas FROM M.L. Greenough
24 Hour Shut-In Bottom Hole Pressure OFFICE Hobbs, New Mexico
 (USE THIS LINE FOR FILE REFERENCE ON SUBJECT)

W. S. Marshall "B" Well No. 3
 Drinkard Gas Zone
 Lea County, New Mexico

M.L. Greenough

This well was shut-in for 24 hours (4/2-3/90) and a measure of the static bottom hole pressure obtained with an Amerada RPG-3 gauge fitted with a 2150# pressure element.

Results are presented in the table below.

	DEPTH (FEET)	PRESSURE (PSIG)	ΔP	ΔD	GRADIENT
SURFACE	6	352			
	2000	373	21	1994	0.0105
	4000	391	18	2000	0.0090
	5000	402	11	1000	0.0110
	5500	408	6	500	0.0120
	6000	414	6	500	0.0120
	6250	416	2	250	0.0080
MID-PERF.	6434	430	14	184	0.0761

OFFSET OPERATORS

Exxon Co., U.S.A.
P. O. Box 1600
Midland, Texas 79702-1600

Chevron U.S.A., Inc.
Hobbs Production Division Office
1923 N. Dal Paso
Hobbs, New Mexico 88240

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

Mobil Exploration and Producing U.S., Inc.
901 E. Bender Blvd.
Hobbs, New Mexico 88240

CURRENT COMPLETION

W.S. MARSHALL 'B' WELL NO. 3

1980' FSL & 1980' FWL UNIT K

SEC 27, T21S, R37E

LEA COUNTY, NEW MEXICO

TD - 6570' PBD - 6491'

KB - 3422' GL - 3410'

STATUS: TUBB - FLOWING 5 MCFD

DRINKARD - FLOWING 33 MCFD

13-3/8" 48#/FT. SET @ 317'

CMT W/250 SKS.

TUBING - 2-3/8" 4.7#/FT. J-55 SET @ 6285'

OTIS X-OVER SLIDING SLEEVE W/1.875 ID. SET

@ 6245'. OTIS TUBING DIVIDER @ 6277'.

8-5/8" 32#/FT. SET @ 2800'

CMT. W/ 1500 SKS.

TUBB PERFORATIONS: 5957', 62', 64', 69', 71', 78', 81', 91', 93', 95',
6002', 06', 13', 16', 22', 25', 69', 71', 73', 88', 6113', 22', 34', 41', 46', 48', 55',
57', 59', 61', 80', 83', 85', 90', 93', 95', (.41" HOLE DIA).

ADDED PERFORATIONS: 5914', 16', 24', 26', 28', 58', 63', 70', 72', 77', 79', 80',
92', 94', 96', 6007', 15', 24', (2 JSPF 36 HOLES). 6068'-6087' (1 JSPF
19 HOLES). 6088'-6140' (2 JSPF 106 HOLES). 6141'-6198' (1 JSPF
57 HOLES).

OTIS PERMA LATCH
PACKER SET @ 6285'

DRINKARD PERFS:
6462' - 6484'
SQUEEZED W/200 SX
IN 1947

EZ DRILL SQUEEZE
PACKER @ 6491'

DRINKARD PERFORATIONS: 6352', 57', 61', 77', 82', 92', 6402', 10',
26', 35', 40', 45', 49', 51', 58', 69', 71', (18 HOLES).

ADDED PERFORATIONS: 6383', 94', 6425', 31', 33', 37', 43', 50', 52', 54', 58',
64', 66', 70', 72', 78', 79', (2 JSPF 36 HOLES).

5-1/2" 15.5#/FT. SET @ 6491'
CMT. W/500 SKS.

HISTORY - WELL WAS DRILLED AND COMPLETED IN MARCH 1947. IN
AUGUST 1947 THE PERFORATIONS IN THE DRINKARD WERE
SQUEEZED AND THE WELL CONTINUED TO PRODUCE FROM
THE OPENHOLE COMPLETION. IN 1975 THE OPENHOLE
COMPLETION WAS SQUEEZED AND THE UPPER DRINKARD
WAS PERFORATED. IT WAS ACIDIZED W/6000 GAL. OF 15%
NE ACID. ALSO FRAC'D W/26,000 GAL GELLED 2% KCL &
20,000# 20-40 SAND. IN 1977 THE TUBB WAS COMPLETED
AND ACIDIZED W/4000 GAL 15% NE ACID AND FRAC'D W/
60,000 GAL OF GELLED 2% KCL & 60,000# 20-40 SAND.
12/89 PERFS WERE ADDED TO THE TUBB & DRINKARD ZONES, EACH
ZONE WAS INDIVIDUALLY ACIDIZED.

TD - 6570'
4-3/4" OPENHOLE

RECEIVED

JUN 11 1990

OCB
HOBBS OFFICE