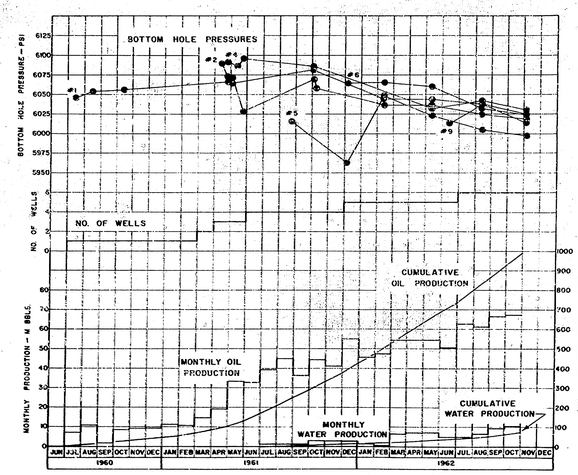
Case No.

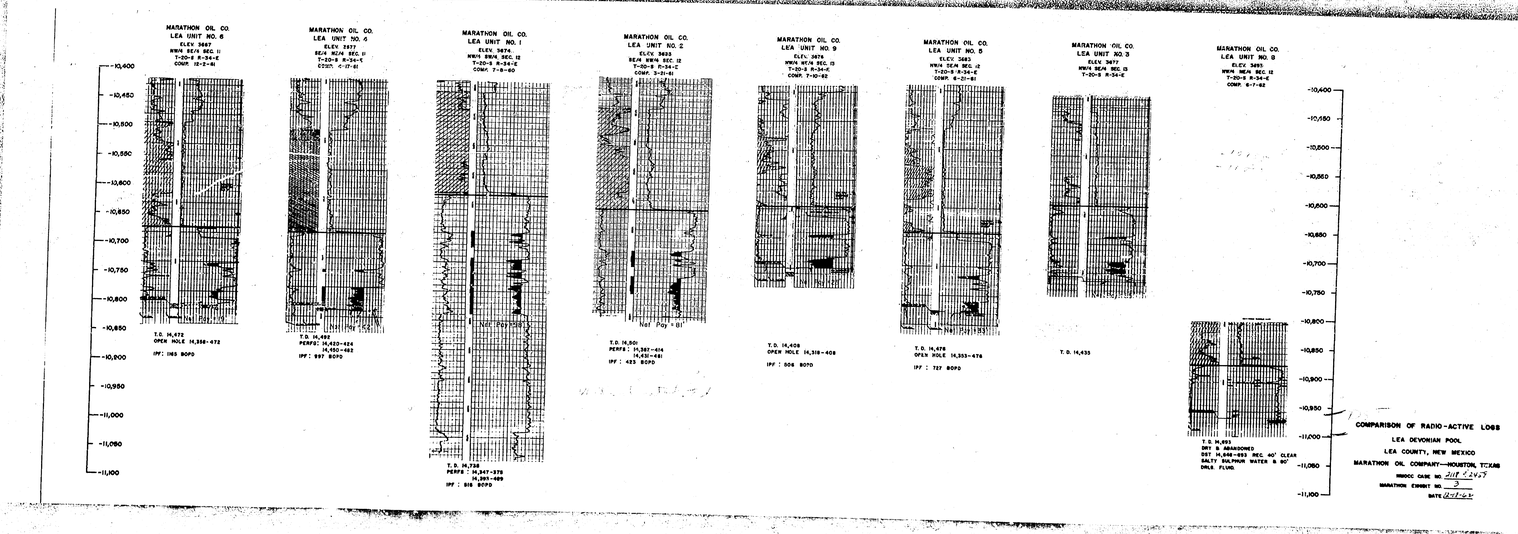
2118

Large Exhibits

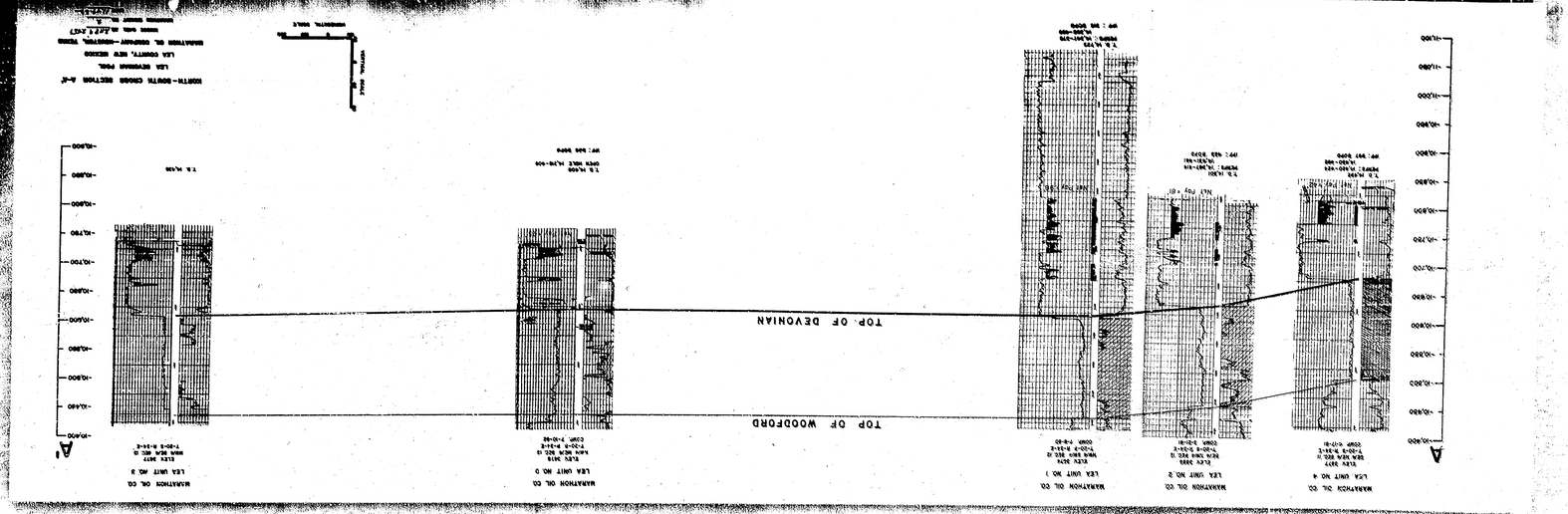


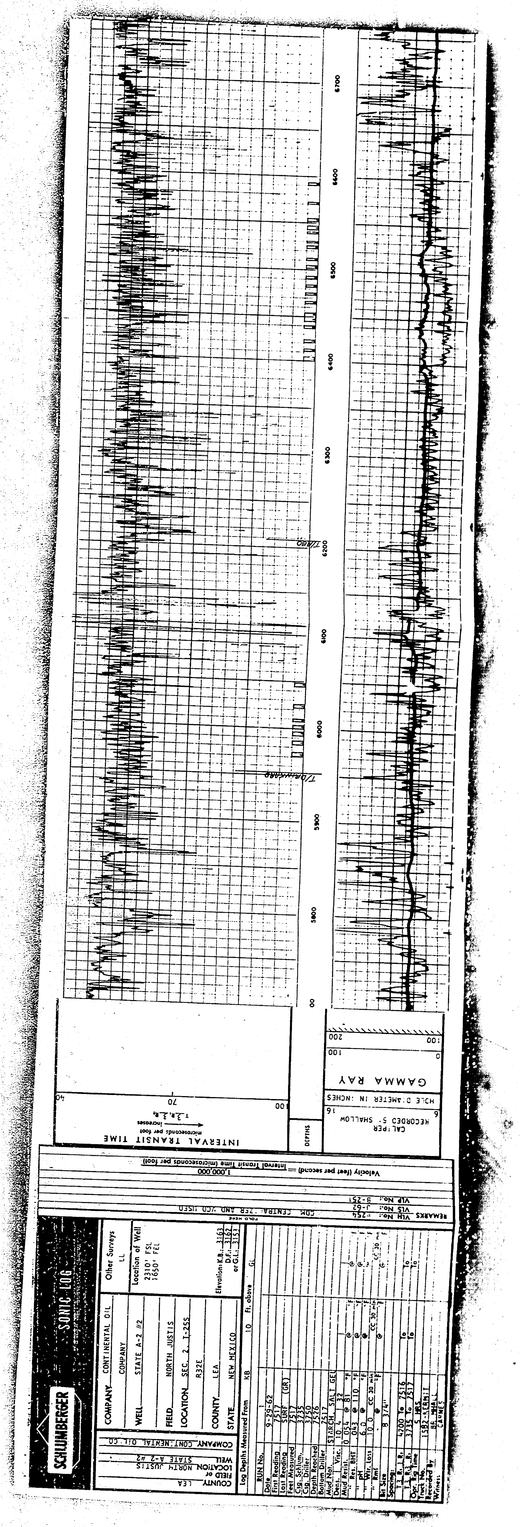
PRODUCTION HISTORY GRAPH
LEA DEVONIAN POOL
LEA COUNTY, NEW MEXICO

NMOCC CASE NO. 2118 & 2459
MARATHON EXHIBIT NO. 7
DATE 11-16-62

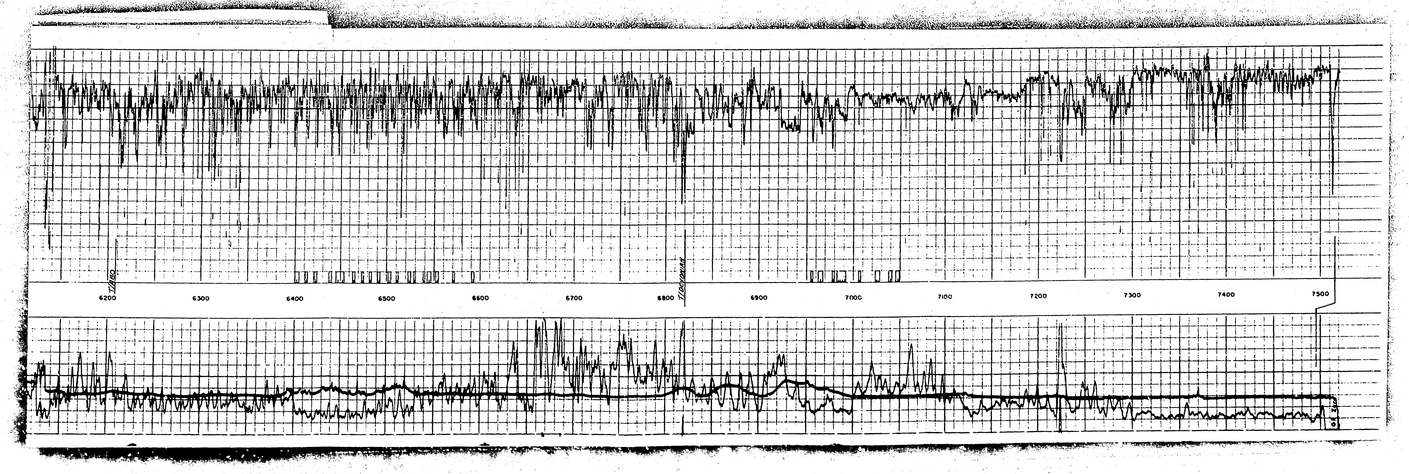


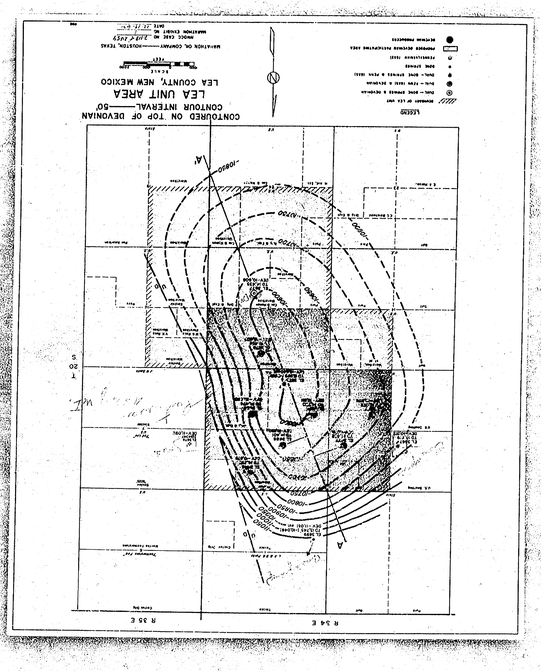
U.N.M.O.C.F. RECORDS

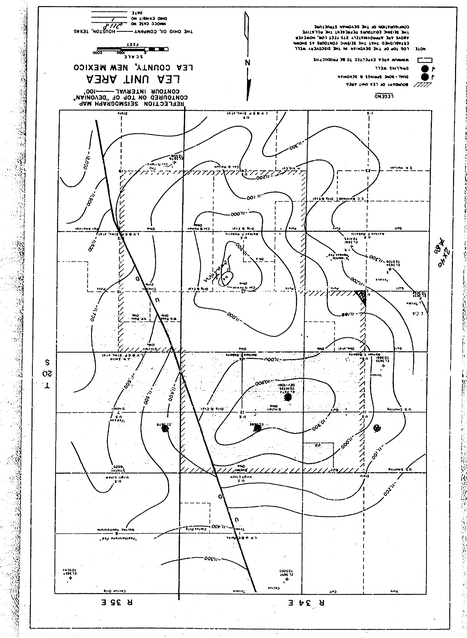

TOP OF DEVONIAN
TOP OF WOODFORD
A
A'
MARATHON OIL CO.
LEA UNIT NO. 4
MARATHON OIL CO.
LEA UNIT NO. 2
MARATHON OIL CO.
LEA UNIT NO. 1
MARATHON OIL CO.
LEA UNIT NO. 0
MARATHON OIL CO.
LEA UNIT NO. 3


SCHLUMBERGER
SONIC LOG
COMPANY CONTINENTAL OIL
WELL STATE A-2 #2
FIELD NORTH JUSTIS
LOCATION SEC. 2 T-25S R32E
COUNTY LEA
STATE NEW MEXICO
Other Services
Location of Well
2310' FSL
1650' FEL
Elevation K.B. 3163
D.F. 3162
G.L. 3151
Log Measured from KB 10 Ft. above G.L.
Drilling Measured from KB
Run No. 1
Date 4-25-62
Depth-Driller 6707
Depth-Logger 6707
Btm. Log Interval 6703
Top Log Interval 3400
Casing-Driller 13 3/8" @ 1400
Casing-Logger 1400
Bit Size 12 1/4"
Type Fluid in Hole SALT GEL
Dens. Visc. 10.1 42
pH Fluid Loss 9.0 cc 30 ml
Source of Sample CIRC.
Rm @ Meas. Temp. .053 @ 110 °F
Rmf @ Meas. Temp. .060 @ 90 °F
Rmc @ Meas. Temp. .053 @ 110 °F
Source: Rmf Rmc CIRC. CIRC.
Rm @ BHT .053 @ 110 °F
Time Since Circ. 8 HRS.
Max. Rec. Temp. Deg. F 110
Equip. No. & Location 1582 HOBBS
Recorded By MCMILLAN
Witnessed By MR. WELL
COMPANY CONT. NERITAL OIL CO.
WELL STATE A-2 #2
FIELD NORTH JUSTIS
COUNTY LEA
REMARKS
RUN NO. 1 ONE CENTRA. TZR RUN ON HSCN
RUN NO. 2
RUN NO. 3
Velocity (feet per second) = Interval Transit Time (microseconds per foot)
INTERVAL TRANSIT TIME
CALIPER RECORDED 5" SHALLOW
HOLE DIAMETER IN INCHES
GAMMA RAY
6 16
0 100
100 200
DEPTH
5700
5800
5900
6000
6100
6200
6300
6400
6500
6600
6700
Time/second

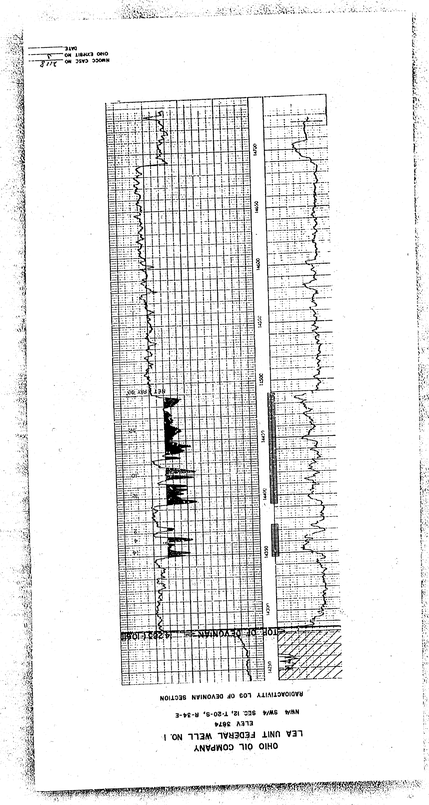

H.L.A.C.C., HOBBS, N.M.


6200
6300
6400
6500
6600
6700
6800
6900
7000
7100
7200
7300
7400
7500


CONTOURED ON TOP OF DEVONIAN
CONTOUR INTERVAL 50'
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
R 34 E
R 35 E
T 20 S


SELECTION SEISMOGRAPH MAP
CONTOURED ON TOP OF 'DEVONIAN'
CONTOUR INTERVAL —100'
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
SCALE
THE OHIO OIL COMPANY — HOBBS, N.M.
DATE
LEGEND
BOUNDARY OF LEA UNIT AREA
PRODUCING WELL
DRY HOLE (PENCIL & SEISMOGRAPH)
WORKING AREA EXPECTED TO BE PRODUCTIVE
NOTE
LOC TOP OF THE DEVONIAN IN THE DEEPEST WELL
ESTIMATED THAT THE DEVONIAN CONTAINS AS KNOWN
AREAS ARE APPROXIMATELY ITS FIFTY-ONE SQUARE
THE DEVONIAN CONTAINS PRACTICALLY THE ALL
CONTAMINATION OF THE DEVONIAN STRATIFIED
N
R 34 E
R 35 E
T 20 S
T 21 S

U.S.G.S. ROSWELL, N.MEX.
NEW MEXICO OCT



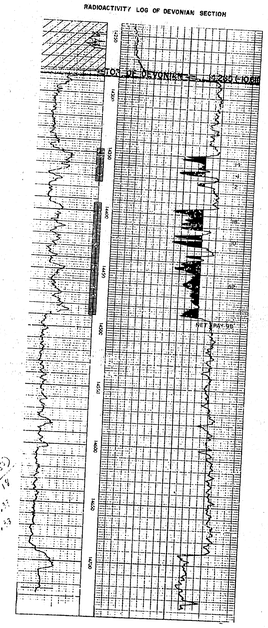
OHIO OIL COMPANY

LEA UNIT FEDERAL WELL NO. 1

ELEV 3674

NW/4 SW/4 SEC. 12, T-20-S, R-34-E

RADIOACTIVITY LOG OF DEVONIAN SECTION



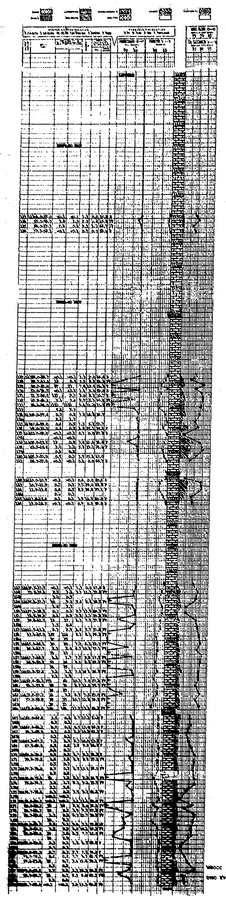
OHIO OIL COMPANY

LEA UNIT FEDERAL WELL NO. 2

ELEV. 3688

SE/4 NW/4 SEC. 12, T-20-S, R-34-E

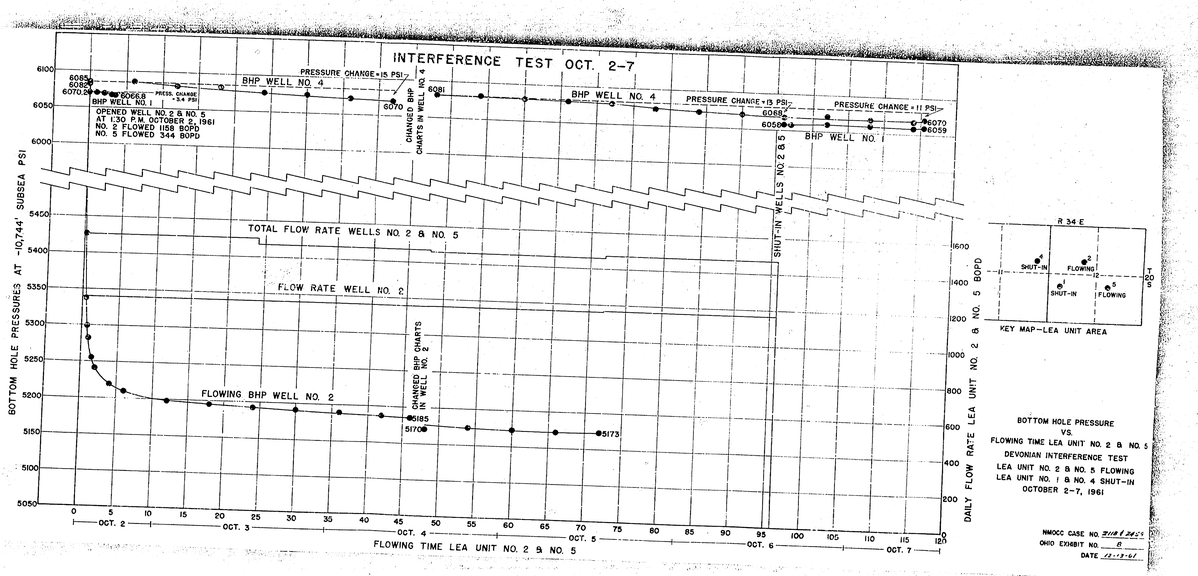
COMPLETION COREGRAPH OF DEVONIAN



WELL CORE NO. 2108-2057

CORE EVENT NO. 4

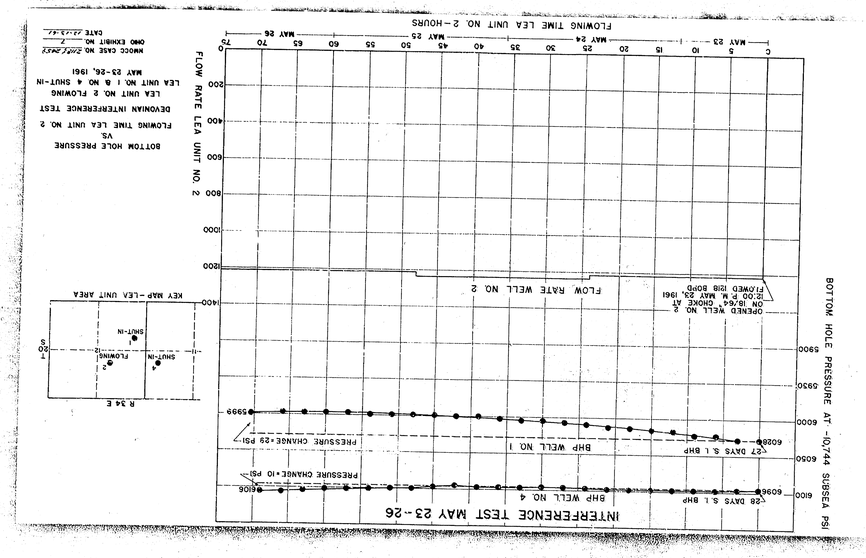
DATE 12-13-47

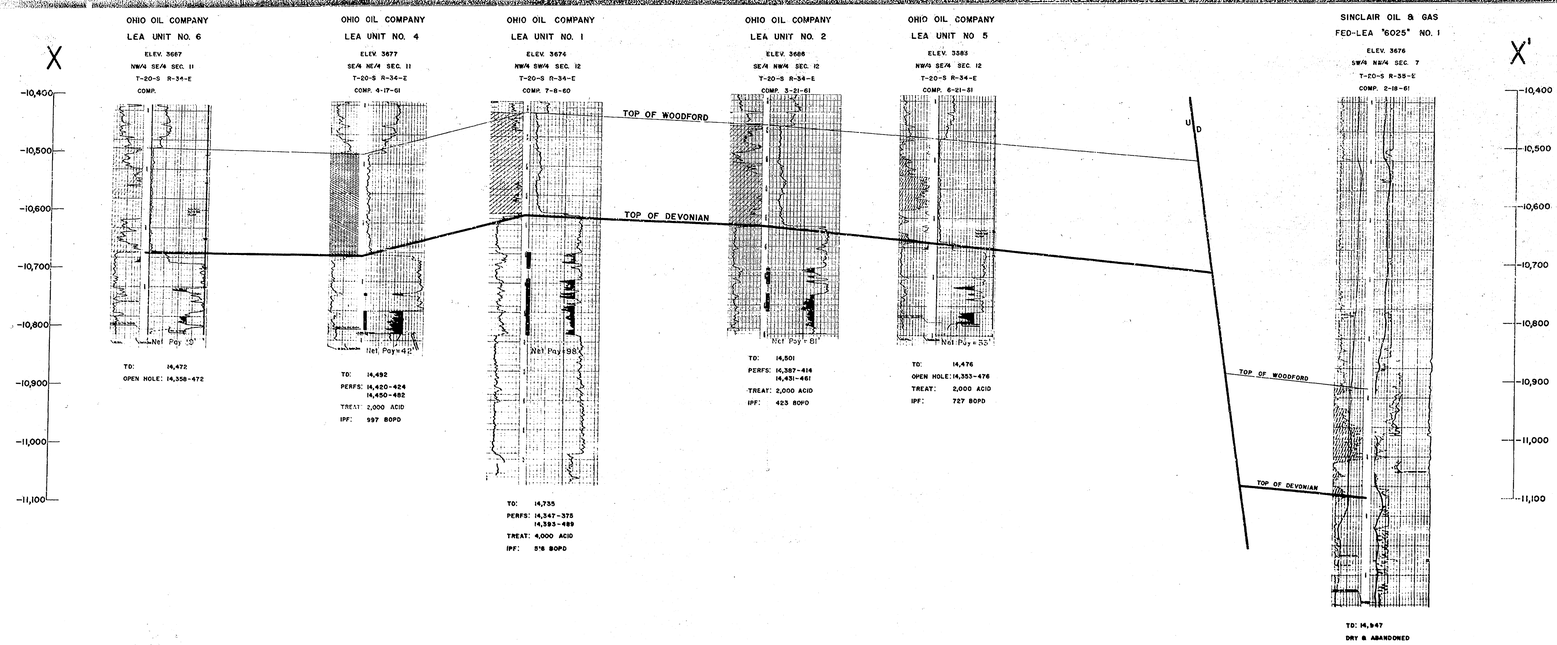


BOTTOM HOLE PRESSURE
VS.
FLOWING TIME LEA UNIT NO. 2 & NO. 5
DEVONIAN INTERFERENCE TEST
LEA UNIT NO. 2 & NO. 5 FLOWING
LEA UNIT NO. 1 & NO. 4 SHUT-IN
OCTOBER 2-7, 1961

NMOCC CASE NO. 2114 & 2115
OHIO EXHIBIT NO. 15
DATE 12-13-61

U.S.G.S. PHOTOGRAPH


INTERFERENCE TEST MAY 23-26
FLOWING TIME LEA UNIT NO. 2-HOURS
MAY 23
MAY 24
MAY 25
MAY 26
FLOW RATE LEA UNIT NO. 2
FLOW RATE WELL NO. 2
OPENED WELL NO. 2 ON 18/64" CHOKE AT 12:00 P.M. MAY 23, 1961 FLOWED 1218 BOPD
BOTTOM HOLE PRESSURE AT -10,744 SUBSEA FEET
BHP WELL NO. 1
BHP WELL NO. 4
67 DAYS S.I. BHP
28 DAYS S.I. BHP
6028
6096
5999
6106
PRESSURE CHANGE = 29 PSI
PRESSURE CHANGE = 10 PSI
KEY MAP - LEA UNIT AREA
SHUT-IN
FLOWING
R 34 E
T 20 S
BOTTOM HOLE PRESSURE VS. FLOWING TIME LEA UNIT NO. 2
DEVONIAN INTERFERENCE TEST
LEA UNIT NO. 2 FLOWING
LEA UNIT NO. 1 & NO 4 SHUT-IN
MAY 23-26, 1961
NMOCC CASE NO. 2447
OMO EXHIBIT NO. 7
DATE 12-13-61



WEST - EAST CROSS SECTION X-X'

LEA DEVONIAN POOL

LEA COUNTY, NEW MEXICO

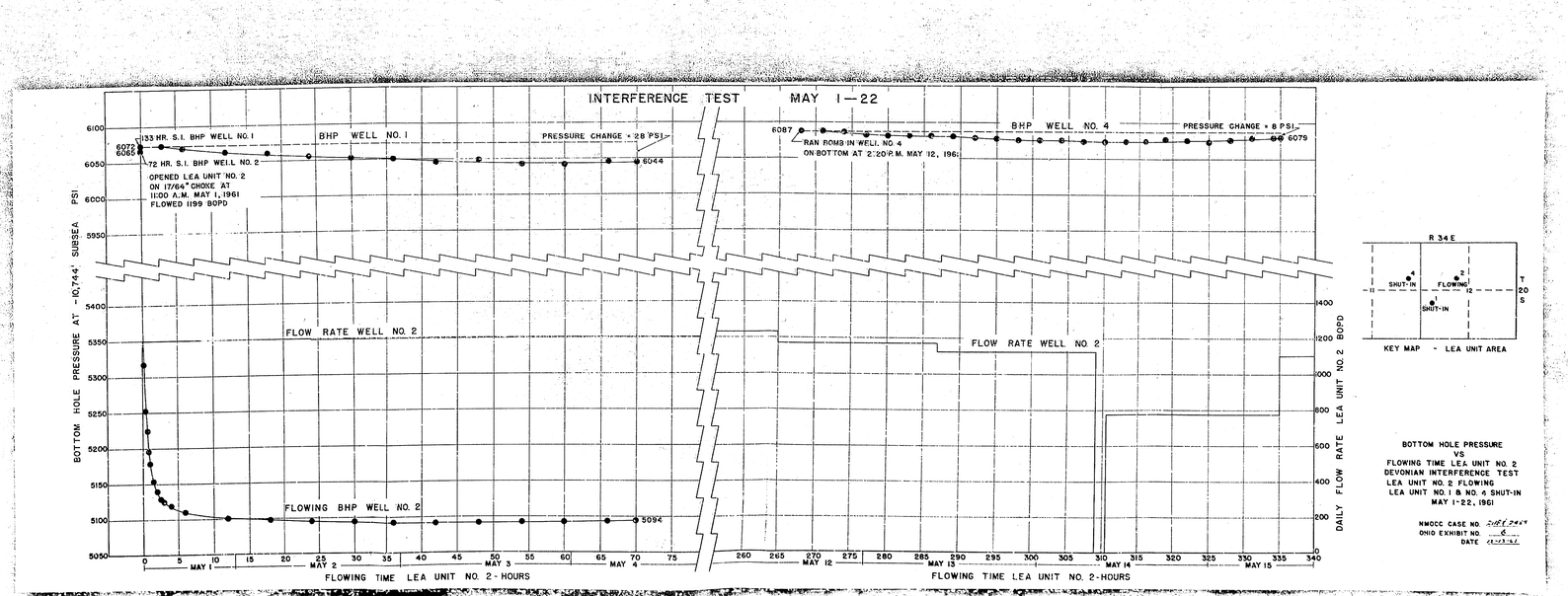
THE OHIO OIL COMPANY - HOUSTON, TEXAS

NMOCC CASE NO 2116 & 2439

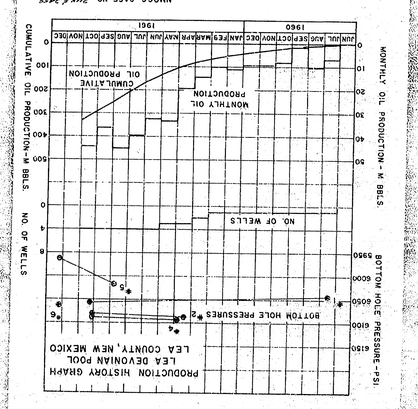
OHIO EXHIBIT NO 2

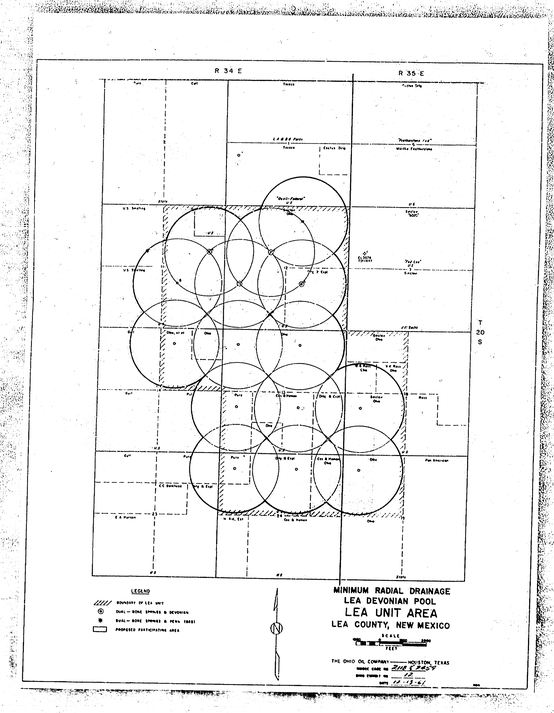
DATE 12-13-61

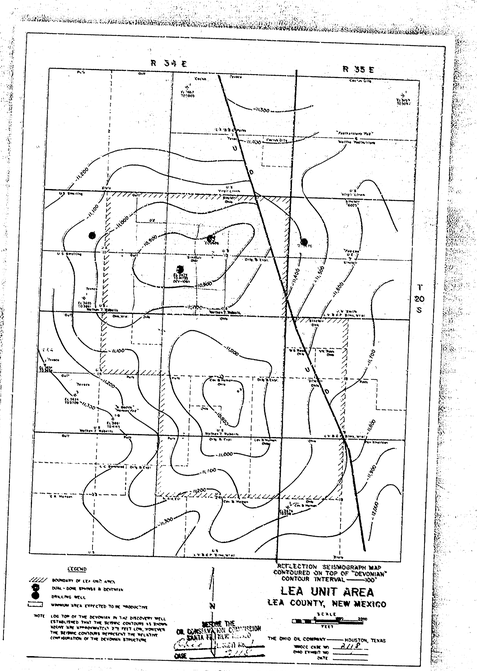
U.S.G.S. MICROGRAPHICS


INTERFERENCE TEST MAY 1—22
BHP WELL NO. 1
PRESSURE CHANGE = 28 PSI
6133 HR. S.I. BHP WELL NO. 1
72 HR. S.I. BHP WELL NO. 2
OPENED LEA UNIT NO. 2 ON 17/64" CHOKE AT 11:00 A.M. MAY 1, 1961 FLOWED 1199 BOPD
6073
6065
6044
BHP WELL NO. 4
PRESSURE CHANGE = 8 PSI
6087
RAN BOMB IN WELL NO. 4 ON BOTTOM AT 2:20 P.M. MAY 12, 1961
6079
FLOW RATE WELL NO. 2
FLOWING BHP WELL NO. 2
5094
BOTTOM HOLE PRESSURE AT -10,744' SUBSEA PSI
DAILY FLOW RATE LEA UNIT NO. 2 BOPD
FLOWING TIME LEA UNIT NO. 2 - HOURS
MAY 1
MAY 2
MAY 3
MAY 4
MAY 12
MAY 13
MAY 14
MAY 15
R 34 E
SHUT-IN
FLOWING
SHUT-IN
T 20 S
KEY MAP - LEA UNIT AREA
BOTTOM HOLE PRESSURE VS FLOWING TIME LEA UNIT NO. 2 DEVONIAN INTERFERENCE TEST LEA UNIT NO. 2 FLOWING LEA UNIT NO. 1 & NO. 4 SHUT-IN MAY 1-22, 1961
NMOCC CASE NO. 2487, 2494
OHIO EXHIBIT NO. 6
DATE 11-13-61

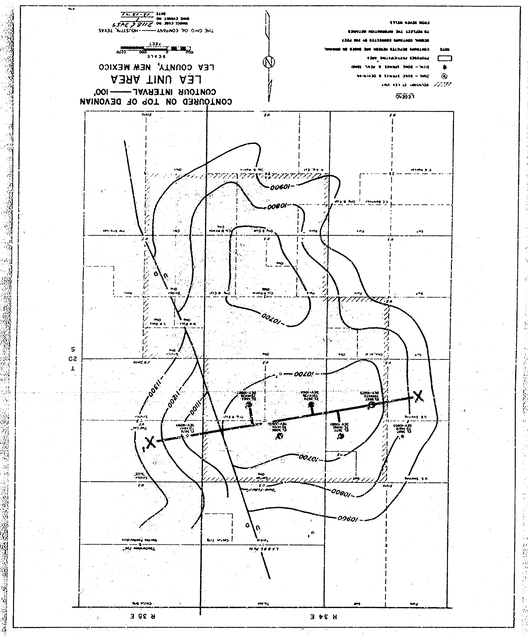
NMOCC CASE NO. 2146 & 2457
OHIO EXHIBIT NO. 9
DATE 12-13-61

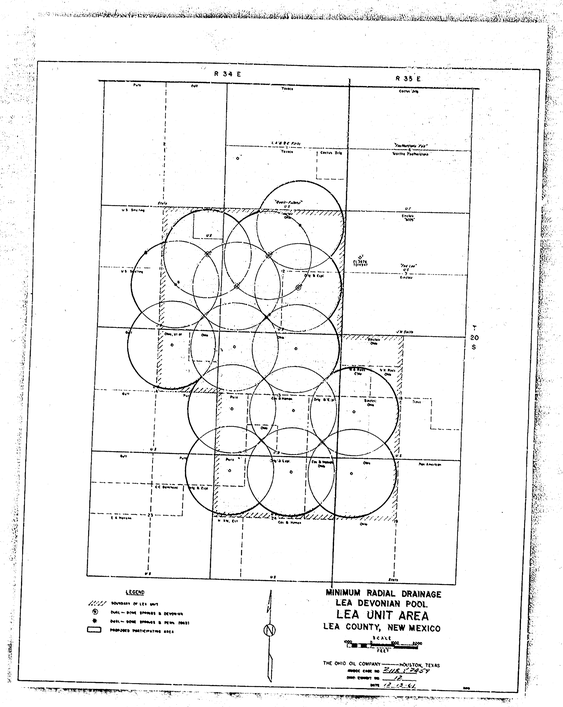



R 34 E
R 35 E
T
20
S
LEGEND
BOUNDARY OF LEA UNIT
DUAL — BONE SPRINGS & DEVONIAN
SINGLE — BONE SPRINGS & DEVONIAN (WEST)
PROPOSED PARTICIPATING AREA
MINIMUM RADIAL DRAINAGE
LEA DEVONIAN POOL
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
SCALE
FEET
THE OHIO OIL COMPANY — HOUSTON, TEXAS
NAME AND NO. BIG E RANCH
DWG. SUBMITTED BY
DATE 12-13-61

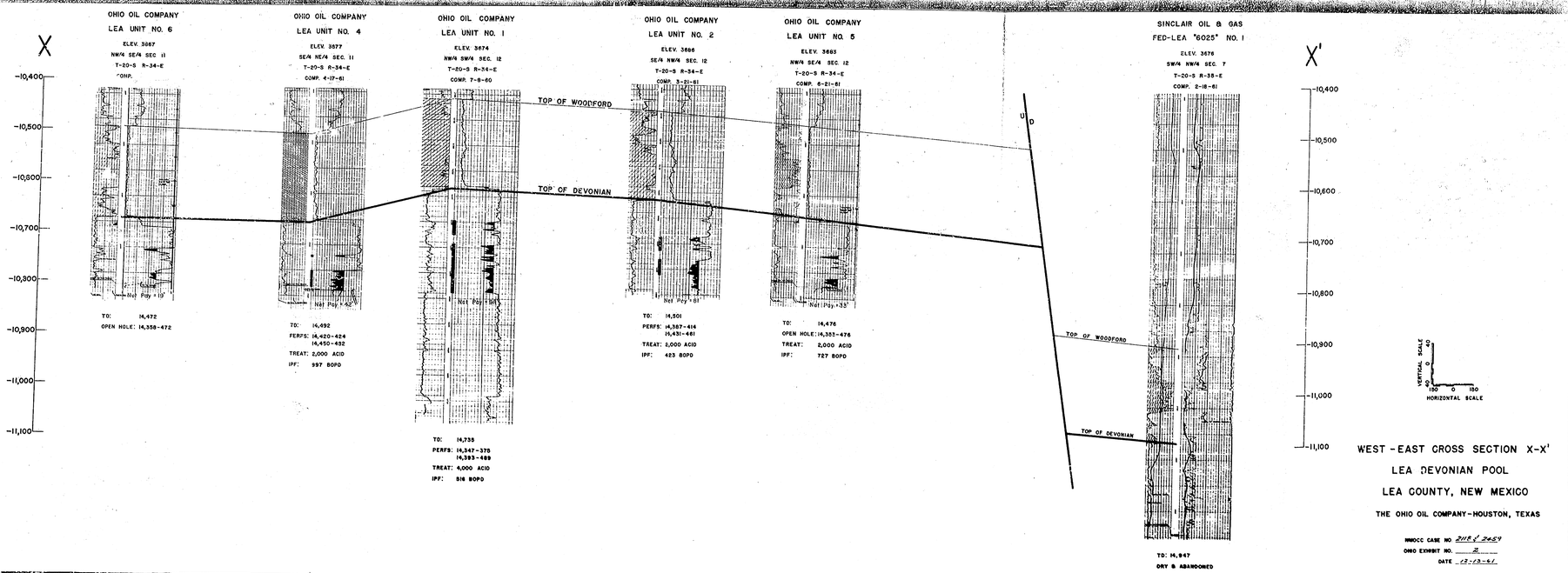


RECEIVED
OIL CONSERVATION COMMISSION
SANTA FE, N.M.
CASE
EXHIBIT


CONTOURED ON TOP OF DEVONIAN
CONTOUR INTERVAL — 100'
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
LEGEND
PRODUCING DEVONIAN GAS WELLS
PRODUCING DEVONIAN OIL WELLS
DRY HOLE - SHOW DEPTH & PLUG - BACK
PLUGGED DEVONIAN GAS WELLS
PLUGGED DEVONIAN OIL WELLS
-10900
-10800
-10700
-10600
-10500
X
X'
T 20 S
R 34 E
R 35 E



U.S.G.S. RECLAMATION



WEST - EAST CROSS SECTION X-X'

LEA DEVONIAN POOL

LEA COUNTY, NEW MEXICO

THE OHIO OIL COMPANY - HOUSTON, TEXAS

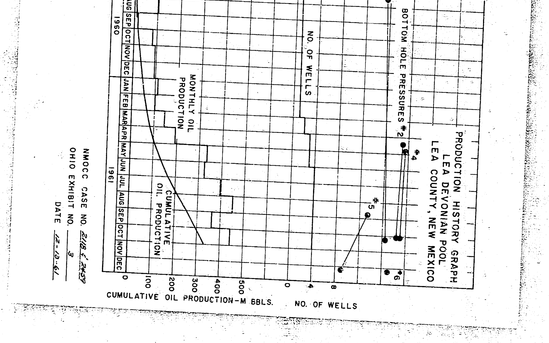
NMOCC CASE NO 2118 & 2459

OHIO EXHIBIT NO. 2

DATE 12-13-61

V.R.M.C.F. MICROGRAPHICS

BEST AVAILABLE COPY


MONTHLY OIL PRODUCTION - M BBLS.
BOTTOM HOLE PRESSURE - PSI
0
10
20
30
40
50
6050
6000
5950
6100
6150
JUNE JUL AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEPT OCT NOV DEC
1960
1961
MONTHLY OIL PRODUCTION
NO. OF WELLS
CUMULATIVE OIL PRODUCTION
0
100
200
300
400
500
CUMULATIVE OIL PRODUCTION - M BBLS.
NO. OF WELLS
PRODUCTION HISTORY GRAPH
LEA (OIL) POOL
LEA COUNTY, NEW MEXICO
NMOCC CASE NO. 2598 & 2607
OHIO EXHIBIT NO. 3
DATE 12-13-61

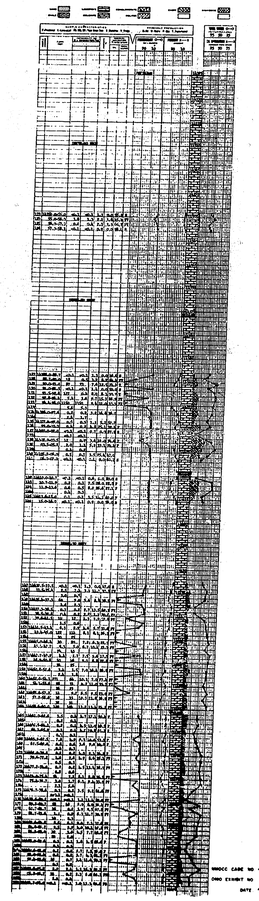
OHIO OIL COMPANY

LEA UNIT FEDERAL WELL NO. 2

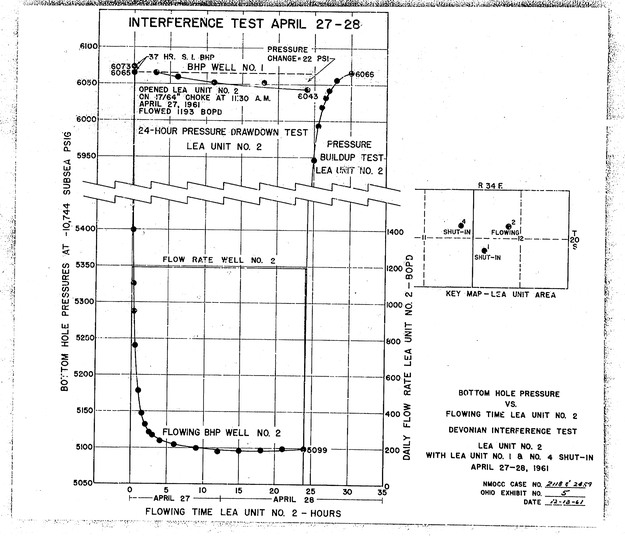
ELEV. 3686

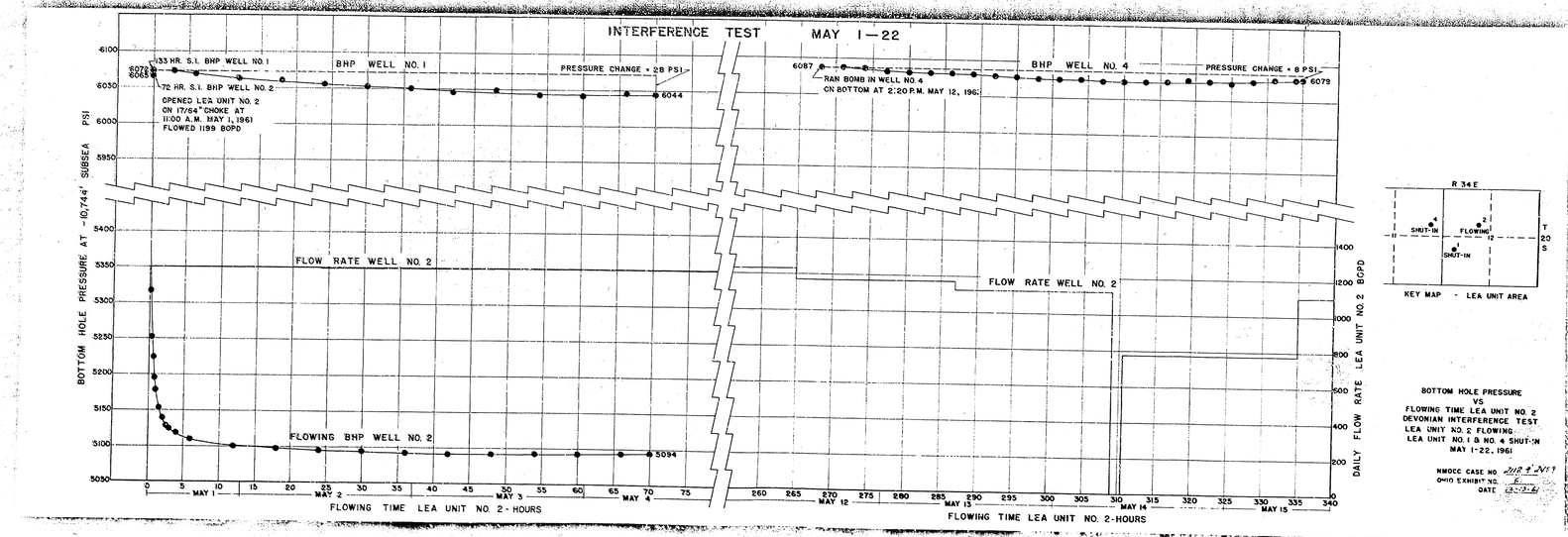
SE/4 NW/4 SEC. 12, T-20-S, R-34-E

COMPLETION COREGRAPH OF DEVONIAN



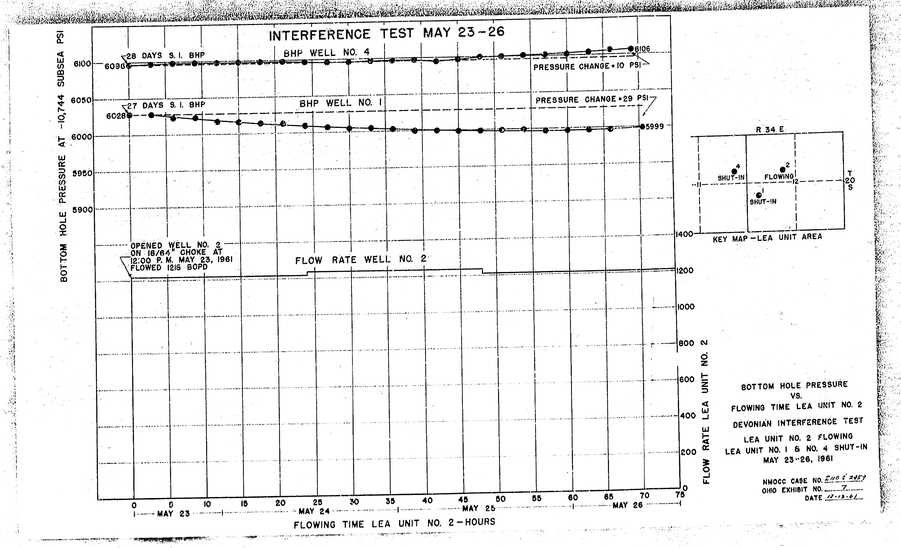
U.S.G.S. - L.P. RECORDS/PHOTOS


INTERFERENCE TEST APRIL 27-28
37 HR. S. I. BHP
BHP WELL NO. 1
PRESSURE CHANGE = 22 PSI
6073
6068
6066
6045
OPENED LEA UNIT NO. 2 ON 17/64" CHOKE AT 11:30 A.M. APRIL 27, 1961 FLOWED 1193 BOPD
24-HOUR PRESSURE DRAWDOWN TEST
LEA UNIT NO. 2
PRESSURE BUILDUP TEST LEA UNIT NO. 2
FLOW RATE WELL NO. 2
FLOWING BHP WELL NO. 2
5099
BOTTOM HOLE PRESSURES AT -10,744 SUBSEA PSIG
DAILY FLOW RATE LEA UNIT NO. 2 - BOPD
APRIL 27
APRIL 28
FLOWING TIME LEA UNIT NO. 2 - HOURS
R 34 E
SHUT-IN
FLOWING
SHUT-IN
KEY MAP - LEA UNIT AREA
BOTTOM HOLE PRESSURE
VS.
FLOWING TIME LEA UNIT NO. 2
DEVONIAN INTERFERENCE TEST
LEA UNIT NO. 2
WITH LEA UNIT NO. 1 & NO. 4 SHUT-IN
APRIL 27-28, 1961
NMOCC CASE NO. 2118 & 2459
OHIO EXHIBIT NO. 5
DATE 12-18-61



BOTTOM HOLE PRESSURE
VS
FLOWING TIME LEA UNIT NO. 2
DEVONIAN INTERFERENCE TEST
LEA UNIT NO. 2 FLOWING
LEA UNIT NO. 1 & NO. 4 SHUT-IN
MAY 1-22, 1961

NMOCC CASE NO. 2187 & 2188
OMIO EXHIBIT NO. 6
DATE 12-13-61

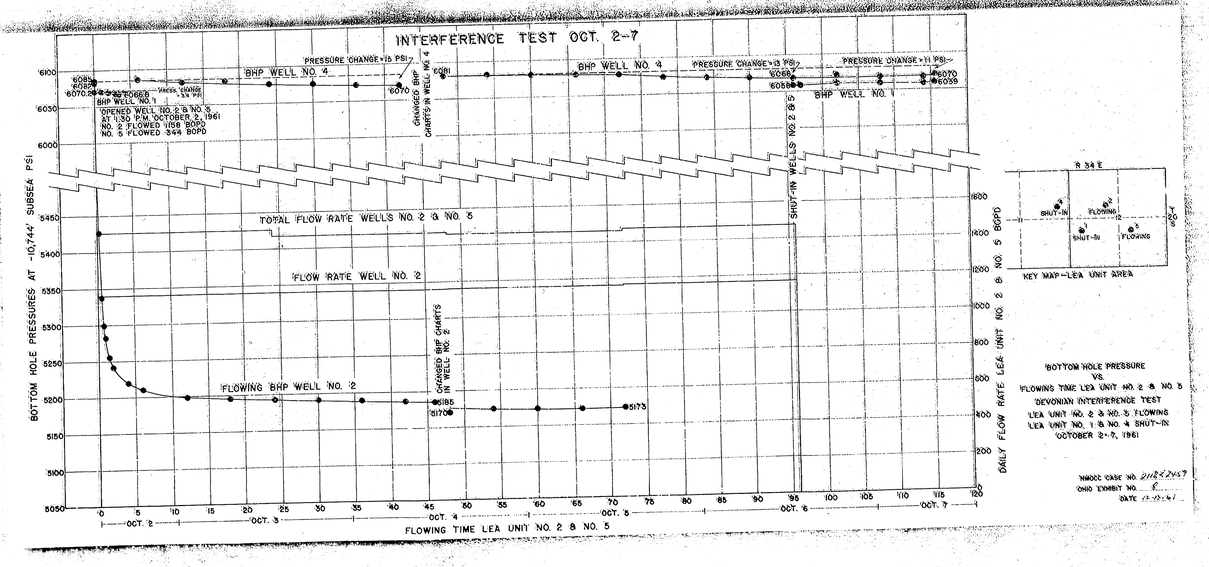


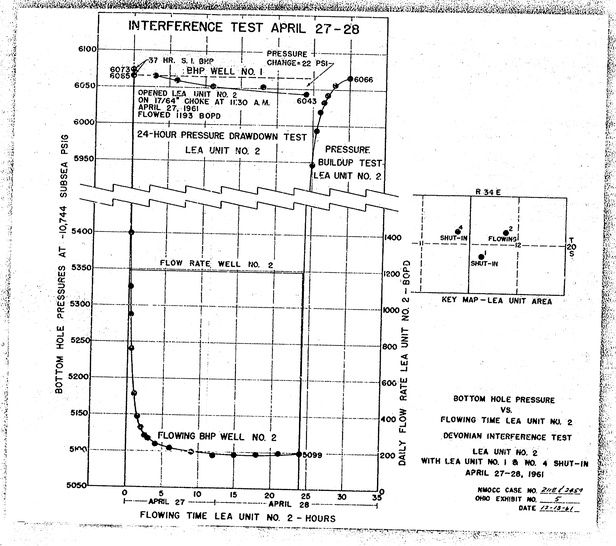
BOTTOM HOLE PRESSURE
VS.
FLOWING TIME LEA UNIT NO. 2

DEVONIAN INTERFERENCE TEST

LEA UNIT NO. 2 FLOWING
LEA UNIT NO. 1 & NO. 4 SHUT-IN
MAY 23-26, 1961

NMOCC CASE NO. 2102 & 2103
OHIO EXHIBIT NO. 7
DATE 12-13-61


INTERFERENCE TEST OCT. 2-7
BHP WELL NO. 4
PRESSURE CHANGE = 15 PSI
BHP WELL NO. 4
PRESSURE CHANGE = 13 PSI
PRESSURE CHANGE = 11 PSI
6091
6088
6070.26
OCTOBER
BHP WELL NO. 1
VALVES CHANGE = 3.4 PSI
OPENED WELL NO. 2 & NO. 5
AT 11:50 P.M. OCTOBER 2, 1961
NO. 2 FLOWED 1158 BOPD
NO. 5 FLOWED 344 BOPD
6070
CHANGED BHP CHARTS IN WELL NO. 4
6091
6085
6058
BHP WELL NO. 1
6070
6059
SHUT-IN WELLS NO. 2 & NO. 5
6100
6050
6000
PSI
BOTTOM HOLE PRESSURES AT -10,744' SUBSEA
5450
5400
5350
5300
5250
5200
5150
5100
5050
TOTAL FLOW RATE WELLS NO. 2 & NO. 5
FLOW RATE WELL NO. 2
FLOWING BHP WELL NO. 2
CHANGED BHP CHARTS IN WELL NO. 2
5185
5170
5173
1800
1600
1400
1200
1000
800
600
400
200
0
DAILY FLOW RATE LEA UNIT NO. 2 & NO. 5 BOPD
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120
OCT. 2
OCT. 3
OCT. 4
OCT. 5
OCT. 6
OCT. 7
FLOWING TIME LEA UNIT NO. 2 & NO. 5
R 34 E
T 20 S
SHUT-IN
FLOWING
12
SHUT-IN
FLOWING
KEY MAP—LEA UNIT AREA
BOTTOM HOLE PRESSURE
VS.
FLOWING TIME LEA UNIT NO. 2 & NO. 5
DEVONIAN INTERFERENCE TEST
LEA UNIT NO. 2 & NO. 5 FLOWING
LEA UNIT NO. 1 & NO. 4 SHUT-IN
OCTOBER 2-7, 1961
NMOCC CASE NO. 2112 & 2143
OHIO EXHIBIT NO. 8
DATE 12-12-61

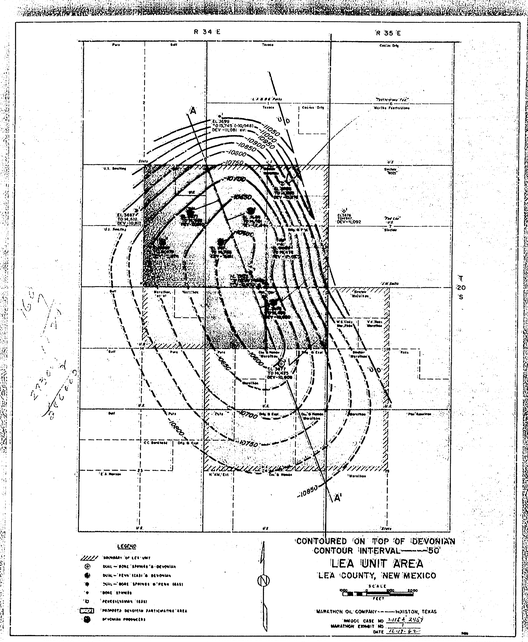


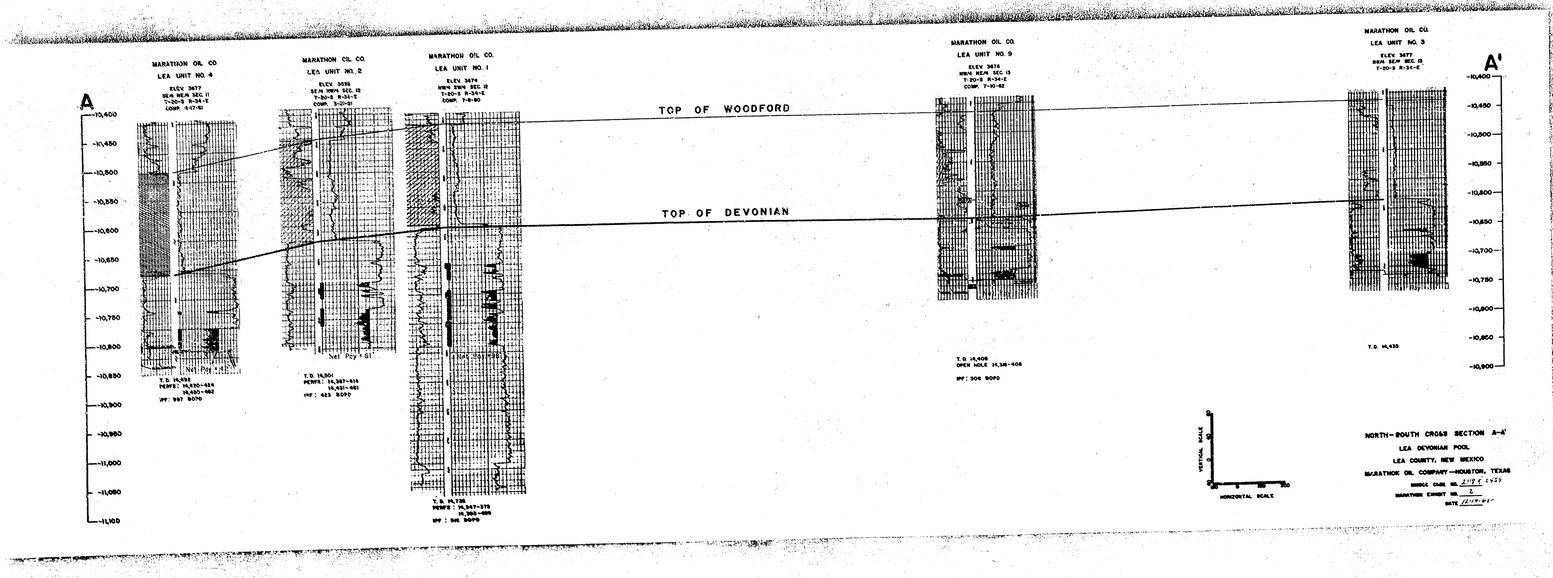
BOTTOM HOLE PRESSURE
VS.
FLOWING TIME LEA UNIT NO. 2

DEVONIAN INTERFERENCE TEST

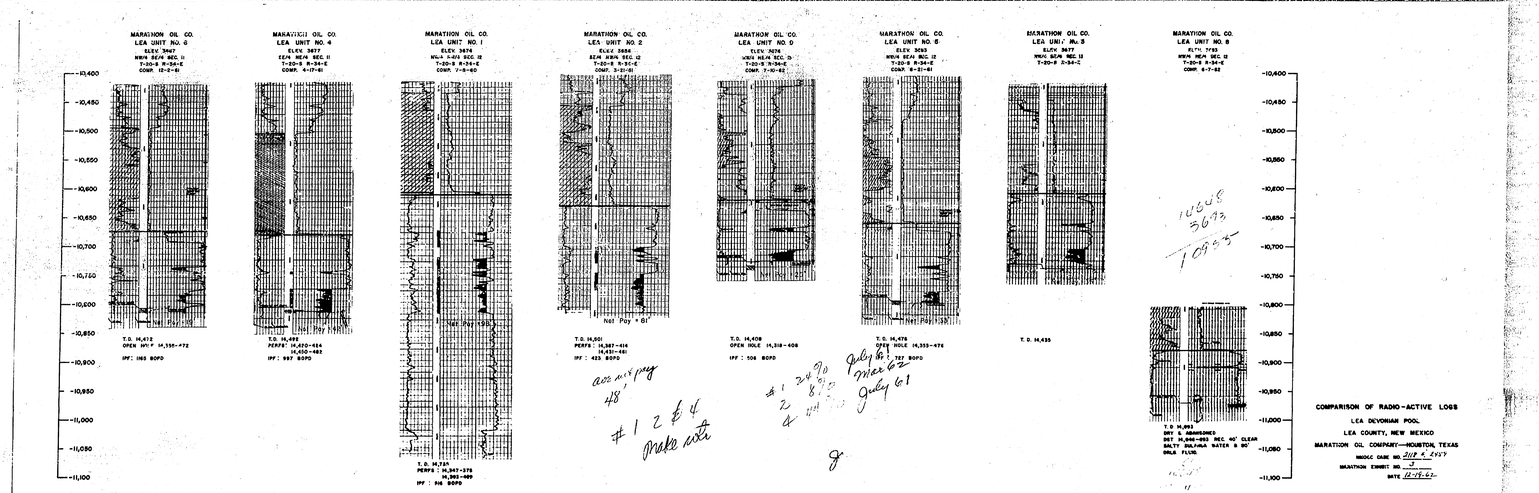
LEA UNIT NO. 2
WITH LEA UNIT NO. 1 & NO. 4 SHUT-IN
APRIL 27-28, 1961

NMOCC CASE NO. 2148 (-2869)
OHIO EXHIBIT NO. 5
DATE 11-13-61

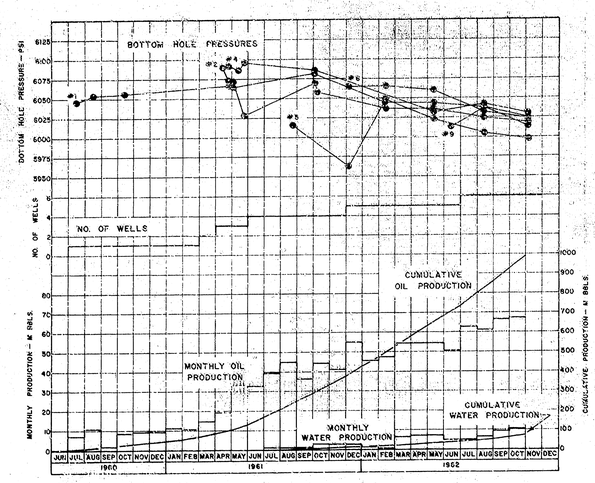

R 34 E
R 35 E
T 20 S
A
A'
-10750
-10800
LEGEND
CONTOURED ON TOP OF DEVONIAN
CONTOUR INTERVAL——50'
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
SCALE
FEET
MARATHON OIL COMPANY——HOUSTON, TEXAS
MISC. CASE NO. 3192 EXH.
MARATHON EXHIBIT NO.
DATE 10-27-65



V.S.R.C.P. MICROGRAPHICS
BEST AVAILABLE COPY



U.S.N.C.P. MICROGRAPHICS
NEW ORLEANS, DEPT



PRODUCTION HISTORY GRAPH

LEA DEVONIAN POOL

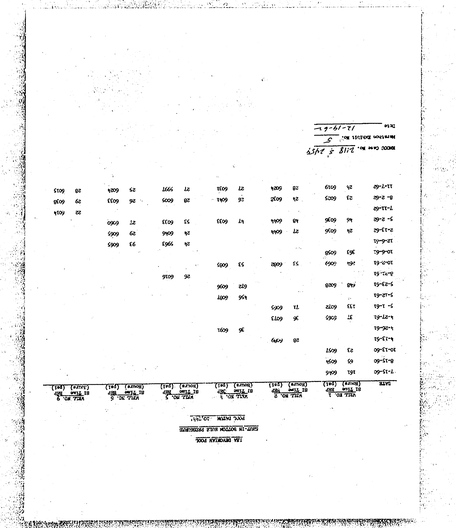
LEA COUNTY, NEW MEXICO

NMOCC CASE NO. 2119 & 2129

MARATHON EXHIBIT NO. 6

DATE 10-17-62

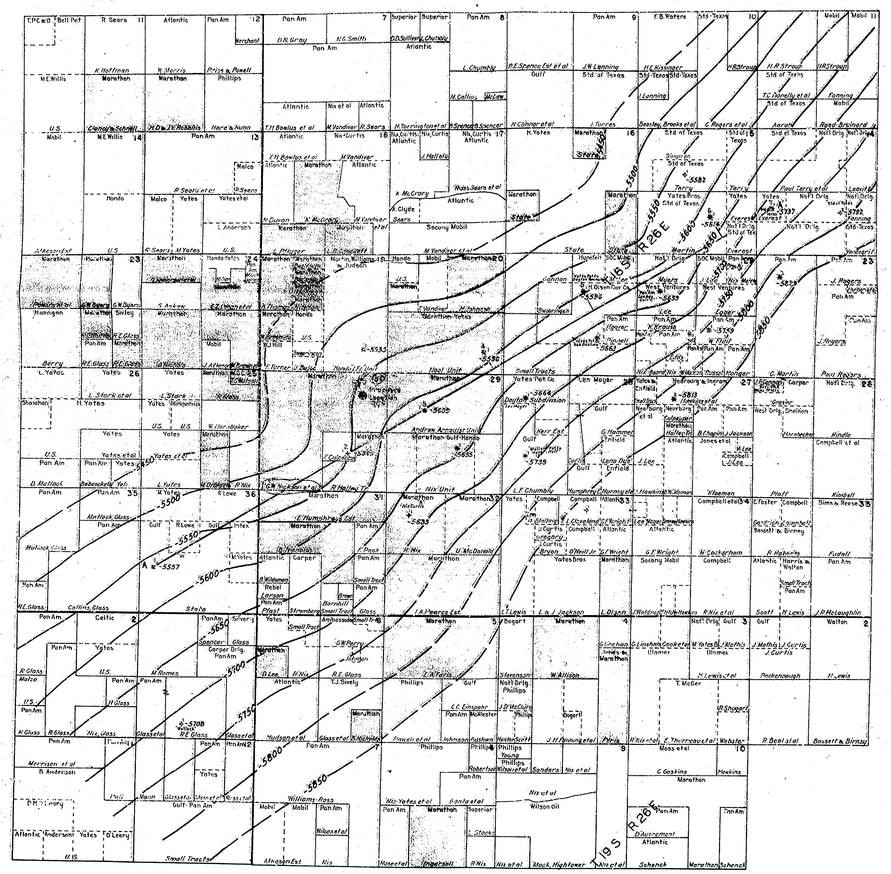


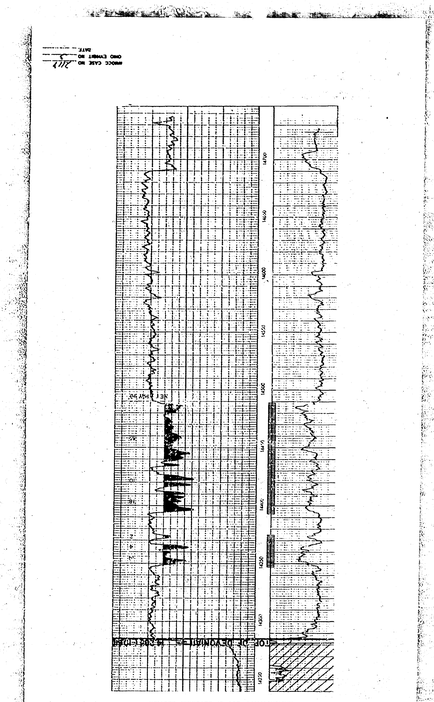


BOOK CAR NO. 2178 & 2179
BEARING DIGITS NO. 5
DATE 12-29-61

I&S DIVISION FOOD
GRAIN MOTION AND PRODUCTS
FOOD, INDIA 25/161

DATE	VISA NO. 5 DE TIME DAY (HOUR) (DAY)	VISA NO. 6 DE TIME DAY (HOUR) (DAY)	VISA NO. 1 DE TIME DAY (HOUR) (DAY)	VISA NO. 4 DE TIME DAY (HOUR) (DAY)	VISA NO. 2 DE TIME DAY (HOUR) (DAY)	VISA NO. 3 DE TIME DAY (HOUR) (DAY)
1-10-60	161 6046					
8-15-60	65 6094					
10-13-60	23 6041					
4-14-61		08 0749				
4-26-61			36 6021			
4-27-61	31 0340	36 6073				
5- 1-61	133 6027	21 0345				
5-12-61			146 6027			
5-24-61	248 6048		022 6096			
6-01-61				26 6016		
10-05-61	264 0049	33 0402	33 6045			
10-06-61	363 0058			18 5963	93 6065	
10-12-61	204 0054	27 6044		18 6046	29 6065	
10-24-61						
11- 2-61	46 6036	49 6044	47 6033	33 6033	27 6060	
11-13-61						
11-26-61	23 6025	25 6042	26 6044	28 6099	26 6033	29 6098
11-29-61	24 0313	28 0024	27 6031	27 1997	29 6024	28 6013


R 26 E
T 19 S
R 28 E
-5600
-5650
-5700
-5750
-5800
-5850
-5900
-5950
-6000
-6050
-6100
-6150
-6200
-6250
-6300
-6350
-6400
-6450
-6500
-6550
-6600
-6650
-6700
-6750
-6800
-6850
-6900
-6950
-7000
-7050
-7100
-7150
-7200
-7250
-7300
-7350
-7400
-7450
-7500
-7550


OHIO OIL COMPANY
LEA UNIT FEDERAL WELL NO. 1
ELEV 3826
NW4 SW4 SEC 18, T-20-S, R-34-E
RADIOACTIVITY LOG OF DEVONIAN SECTION
TOP OF DEVONIAN
13,294' (-9468')
13,300'
13,400'
13,500'
13,600'
13,700'
13,800'
13,900'
14,000'

RECOVERABLE OIL RESERVES

LEA DEVONIAN POOL

Basic Data

Net Pay	=	98 feet	(Neutron Log)
Porosity	=	4.7%	(Neutron Log)
Water Saturation	=	30%	(estimated)
Formation Volume Factor	=	1.185	(Fluid analysis)
Recovery Factor	=	50%	(estimated)

Volumetric Calculation

$$\frac{7758 \text{ Bbl/acre-foot} \times \text{Porosity} \times (1\text{-Water Saturation}) \times \text{Net Pay} \times \text{Recovery Factor}}{\text{Formation Volume Factor}}$$

$$\frac{(7758)(0.047)(0.70)(98)(0.50)}{1.185} = 10,554 \text{ bbls/acre}$$

NMOCC Case No. 2118
Ohio Exhibit No. 4
Date

COMPARATIVE ECONOMICS
FOR DEVELOPMENT OF
LEA DEVONIAN POOL

40-ACRE SPACING VS. 80-ACRE SPACING

Minimum Area Expected to be Productive		800 Acres
Wells Required with 40 Acre Spacing		20 Wells
Wells Required with 80 Acre Spacing		10 Wells
Investment @ $471,000 per Well		
For 40 Acre Spacing (20 Wells)		$ 9,420,000
For 80 Acre Spacing (10 Wells)		$ 4,710,000
Ultimate Reserves		
Oil		8,443,200 bbls.
Gas @ 300 cu. ft. per bbl.		2,532,960 MCF
W.I. Net Operating Income Per Gross Bbl. of Oil Produced Including Income From Gas Produced With Oil		
Value		
Bbl. of oil		$2.77
300 cu. ft. of gas		.05
Total Gross Value		$2.83
Costs		
Severance & Advalorem Taxes	$0.20	
Royalty	0.35	
Lifting Costs	0.65	
		$0.80
Net Operating Income per gross bbl.		$2.03
W.I. Total Net Operating Income 8,443,200 x $2.03/bbl.		$17,139,696
Net Profit for 40-Acre Spacing		$ 7,719,696
Net Profit per Well	$385,985	
Profit to Investment Ratio		0.82 to 1
Net Profit for 80-Acre Spacing		$12,429,696
Net Profit per Well	$1,242,970	
Profit to Investment Ratio		2.64 to 1

NMOCC Case No. 2119
Ohio Exhibit No. 5
Date

LEA BONE SPRINGS POOL

DEVELOPMENT DATA

1. Location of Field:

   Approximately 14 miles west-southwest of Monument, New Mexico, Section 12, T-20-S, R-34-E, Lea County

2. Completion Data Lea Unit Well No. 1:

a.	Formation	Bone Springs
b.	Top of Bone Springs	9183 (-4509)
c.	Top of Bone Springs Pay	9476 (-4506)
d.	Completion Date	10-9-60
e.	Perforated Interval	9480-9550
f.	Treatment	None
g.	Initial Potential Test	
	(1) Potential (BOPD)	214
	(2) Choke Size (in.)	1/2
	(3) GOR (CF/B)	1817
	(4) Casing Pressure (psig)	pkr.
	(5) Tubing Pressure (psig)	100

3. Reservoir Fluid Characteristics:

a.	Saturation Pressure	Unknown
b.	Formation Volume Factor	1.95 est.
c.	Solution GOR (CF/B)	1817
d.	Oil Gravity (°API @ 60°F)	42

4. Reservoir Characteristics:

		Dolomite	Sand
a.	Porosity (%)	3.05	10.2
b.	Permeability (md)	4.39	0.85
c.	Water Saturation (%)	30.0 est.	30.0 est.
d.	Net Pay (ft.)	28	19
e.	Reservoir Temperature (°F)	148	
f.	Original Reservoir Press. (psig)	3981 @ -3840	
g.	Probable Reservoir Mechanism	Solution Gas	

NMOCC Case No. 2119
Ohio Exhibit No. 6
Date

U.S.M.C.F. MICROGRAPHICS

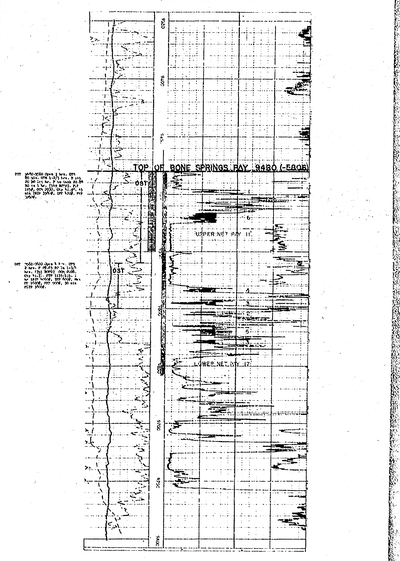
OHIO OIL COMPANY

LEA UNIT FEDERAL WELL NO. 1

ELEV. 3674

NW/4 SW/4 SEC 12, T-20-S, R-34-E

FORXO LOG OF BONE SPRINGS PAY



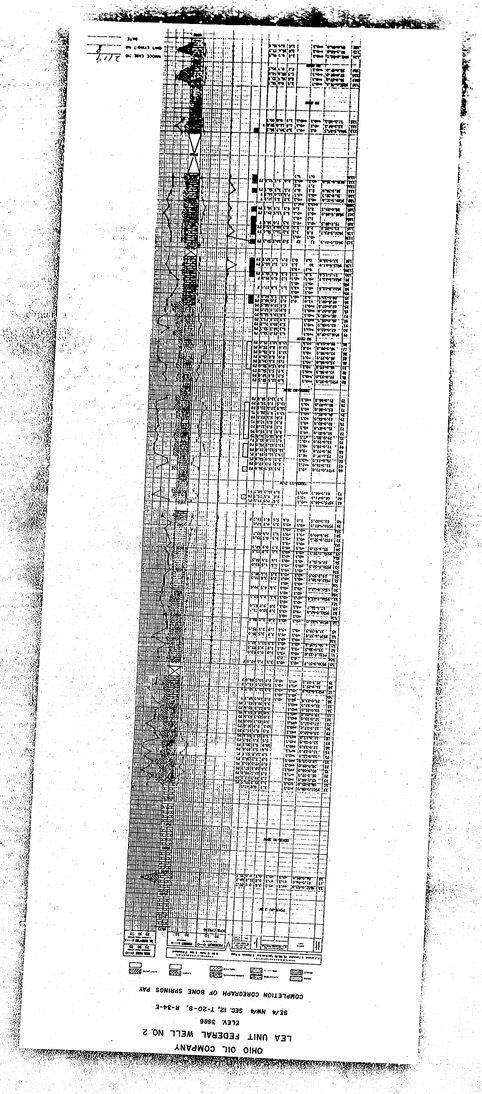
WOCC CASE NO. 2149

OHO EXHIBIT NO. 3

DATE _____






OHIO OIL COMPANY
LEA UNIT FEDERAL WELL NO. 2
FLEX 3668
SE/4 NW/4 SEC. 12, T-20-S, R-34-E
COMPLETION CHRONOGRAPH OF BONE SPRINGS PAY

RECOVERABLE OIL RESERVE

LEA BONE SPRINGS POOL

DOLOMITE INTERVAL:

Basic Data

Porosity	-3.0% (core analysis #2 well)
Permeability	-4.39 md (core analysis #2 well)
Net Pay	- 88 ft. (log #1 well)
Water Saturation	- 30% (estimated)
Recovery Factor	- 20% (estimated)
Formation Volume Factor	- 1.95 (estimated)

Volumetric Calculation

7758 Bbl/Acre-foot x Porosity x (1-Water Saturation) x Net Pay x Recovery Factor / Formation Volume Factor

$$\frac{(7758)(0.032)(0.70)(88)(0.20)}{1.95} = 476 \text{ bbl/acre}$$

SAND INTERVAL

Basic Data

Porosity	- 10.0% (core analysis #2 well)
Permeability	- 0.25 md (core analysis #2 well)
Net Pay	- 19 ft. (core analysis #2 well)
Water Saturation	- 30% (estimated)
Recovery Factor	- 10% (estimated)
Formation Volume Factor	- 1.95 (estimated)

Volumetric Calculations

7758 Bbl/Acre-foot x Porosity x (1-Water Saturation) x Net Pay x Recovery Factor / Formation Volume Factor

$$\frac{(7758)(0.100)(0.70)(19)(0.10)}{1.95} = 540 \text{ bbl/acre}$$

TOTAL BONE SPRINGS INTERVAL:

Zone Total = 476 + 540 = 1016 bbl/acre

NMOCC Case No. 7118

Ohio Exhibit No. 9

Date

CORE ANALYSIS

LEA UNIT WELL NO. 2

BONE SPRINGS PAY

LOWER DOLOMITE INTERVAL 9607-9648

W/PERMEABILITY EQUAL TO OR GREATER THAN 0.1 MILLIDARCY

Depth Interval	Footage	Permeability md.	Porosity %
9607.6-09.1	1.5	1.0	2.8
09.1-10.8	1.7	0.2	1.4
13.7-15.6	1.9	1.8	2.4
15.6-17.9	1.4	10.0	2.7
17.0-18.0	1.0	0.2	2.9
21.0-22.5	1.5	21.0	5.9
22.5-23.7	1.2	6.6	3.1
23.7-25.2	1.5	2.8	2.3
25.2-26.5	1.3	2.3	1.7
28.0-29.5	1.5	2.1	6.1
32.3-34.0	1.7	6.1	2.4
34.0-36.0	2.0	0.7	2.0
44.5-45.5	1.0	0.1	3.2
Net Pay	19.2 ft.		
Weighted Average		4.39 md.	3.0%

CORE ANALYSIS

LEA UNIT WELL NO. 2

BONE SPRINGS PAY

LOWER SAND INTERVAL 9565-9607

W/PERMEABILITY EQUAL TO OR GREATER THAN 0.1 MILLIDARCY

Depth Interval	Footage	Permeability md.	Porosity %
9566.0-67.0	1.0	0.3	9.6
72.0-73.0	1.0	0.1	9.3
75.0-76.0	1.0	0.3	10.3
76.0-77.0	1.0	9.6	14.5
77.0-78.0	1.0	0.4	13.3
79.0-80.0	1.0	0.1	8.6
80.0-81.0	1.0	0.1	8.0
81.0-82.0	1.0	0.1	7.1
82.0-83.0	1.0	0.1	8.3
83.0-84.0	1.0	0.1	9.6
84.0-85.0	1.0	0.1	10.4
85.0-86.0	1.0	0.4	14.9
86.0-87.0	1.0	0.4	11.5
94.0-95.0	1.0	0.1	6.0
95.0-96.0	1.0	0.1	7.5
96.0-97.0	1.0	0.1	8.0
97.0-98.0	1.0	0.4	12.5
98.0-99.0	1.0	0.6	12.8
99.0-00.0	1.0	0.4	10.8
Net Pay	19.0 ft.		
Weighted Average		0.25 md.	10.2%

W.N.M.C.P. MICROGRAPHICS

COMPARATIVE ECONOMICS
FOR INVESTMENT OF
LEA POOL SPRINGS POOL

40-ACRE SPACING VS. 80-ACRE SPACING

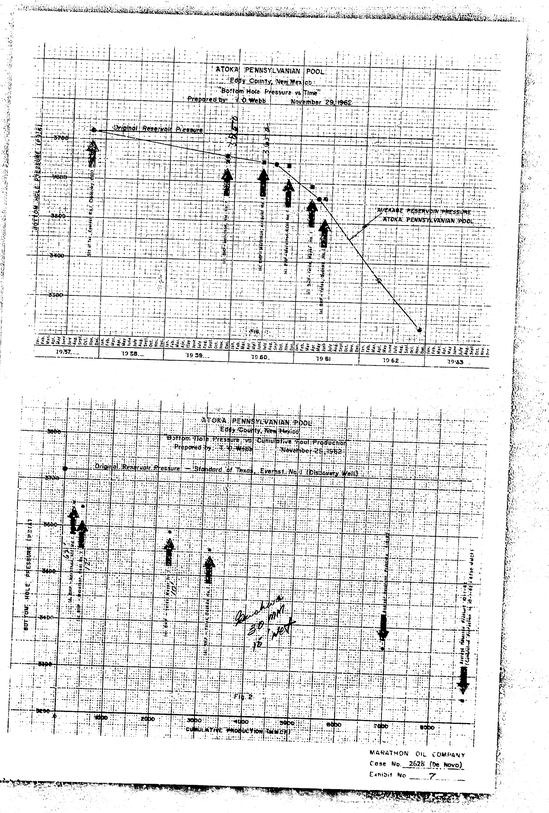
Minimum Area Expected to be Productive		500 Acres
Wells Required with 40 Acre Spacing		20 Wells
Wells Required with 80 Acre Spacing		10 Wells
Investment @ $225,000 per Well		
For 40 Acre Spacing (20 Wells)		$4,500,000
For 80 Acre Spacing (10 Wells)		$2,250,000
Investment for Dual Completion @ $25,000 per Well		
For 40 Acre Spacing (20 Wells)		$ 500,000
For 80 Acre Spacing (10 Wells)		$ 250,000
Ultimate Reserves		
Oil		812,000 bbls.
Gas @ 2000 cu. ft. per bbl.		1,625,600 MCF
W.I. Net Operating Income Per Gross Bbl. of Oil Produced Including Income from Gas Produced With Oil		
Value		
Bbl. of oil		$ 2.77
2000 cu. ft. of gas		0.20
Total Gross Value		$ 2.97
Costs		
Severance & Advalorem Taxes	$0.21	
Royalty	0.37	
Lifting Costs	0.24	
Net Operating Income per Gross Bbl.		$ 0.82
		$ 2.15
W.I. Total Net Operating Income 812,800 x $2.15/Bbl.		$1,747,520
Net Loss for 40-Acre Spacing		$2,732,480
Net Loss per Well	$137,624	
Net Loss for 80-Acre Spacing		$ 500,480
Net Loss per Well	$ 50,048	
Net Profit for Dual Completion for 40-Acre Spacing		$1,247,520
Net Profit per Well	$ 62,376	
Profit to Investment Ratio	2.50 to 1	
Net Profit for Dual Completion for 80-Acre Spacing		$1,497,520
Net Profit per Well	$149,752	
Profit to Investment Ratio	5.99 to 1	

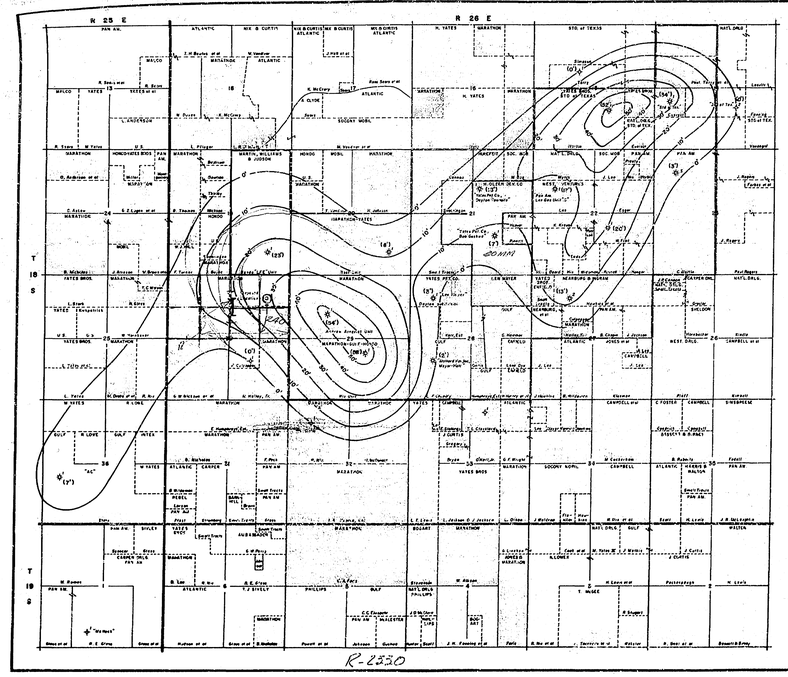
NMOCC Case No. 2119

Ohio Exhibit No. 10

Date

W.N.M.C.F. MICROGRAPHICS


ATOKA PENNSYLVANIAN POOL
Eddy County, New Mexico
Bottom Hole Pressure vs Time
Prepared by: C.O. Webb November 28, 1962
Original Reservoir Pressure
Fig. 1
ATOKA PENNSYLVANIAN POOL
Eddy County, New Mexico
Bottom Hole Pressure vs. Cumulative Gas Production
Prepared by: C. O. Webb November 25, 1962
Original Reservoir Pressure — Standard of Texas, Everist No. 1 (Discovery Well)
Fig. 2
MARATHON OIL COMPANY
Case No. 2628 (De Novo)
Exhibit No. 7



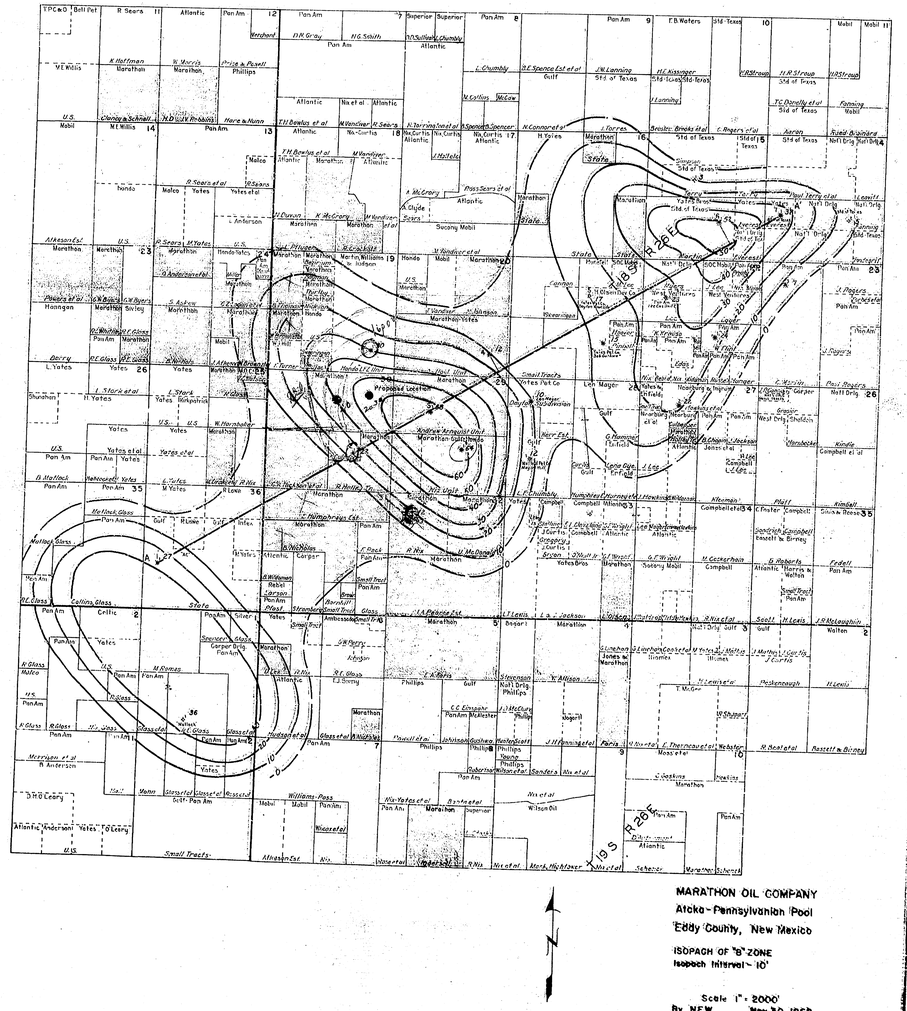
MARATHON OIL COMPANY
Atoka-Pennsylvanian Pool
Eddy County, New Mexico
ISOPACH of NET PAY in "B" ZONE
Contour Interval — 10'
Scale: 1" = 2000' By: TOW

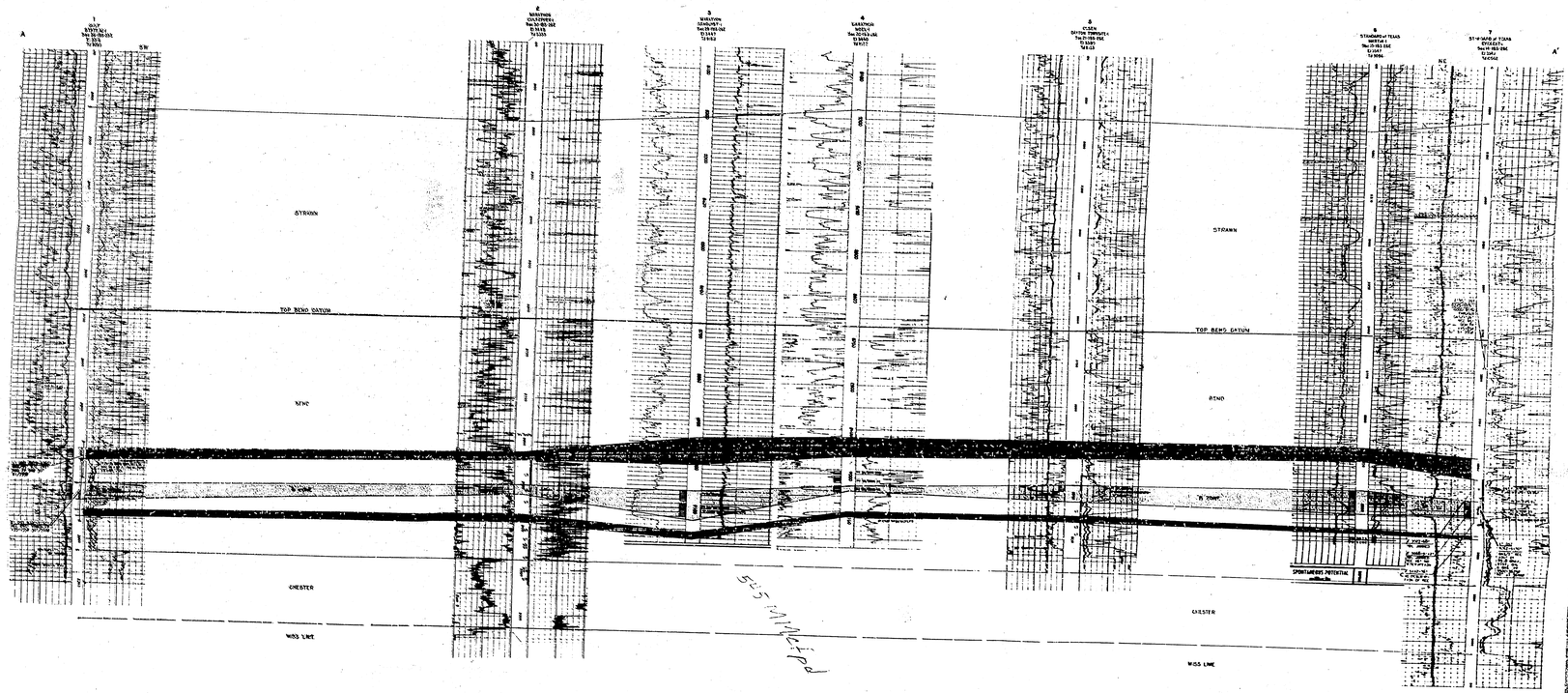
December 3, 1962

Case No. 2628 (de Novo)

Exhibit No. 6

R-2330

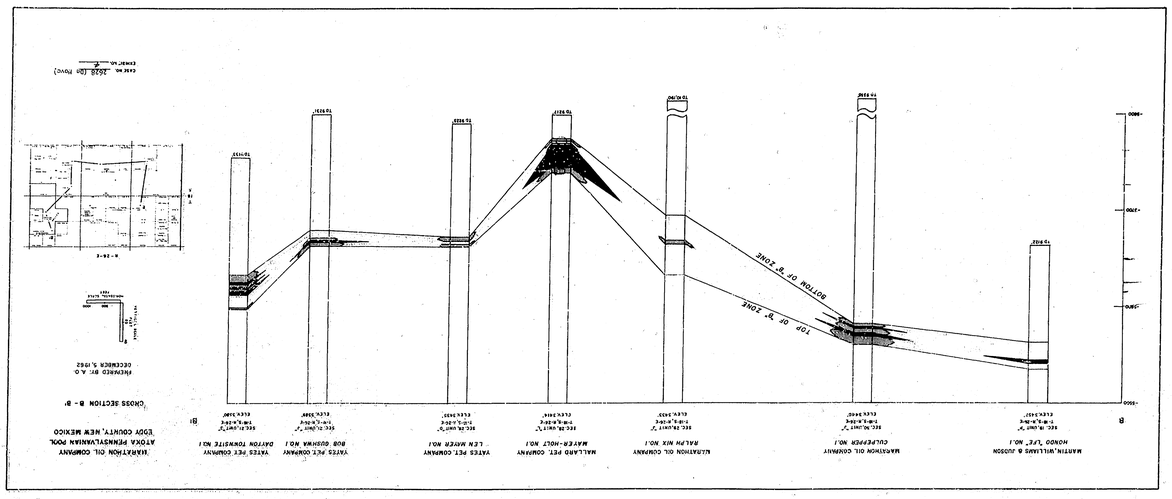

R-26-E
T-18-S
T-19-S
R-26-E
Proposed Location
Andrew Arrington Unit
Marathon-Gulf Unit
Small Tracts
Williams-Pass
Small Tracts
Atlantic-Fed
Small Tracts
Small Tracts
Small Tracts



MARATHON OIL COMPANY
Atoka Pennsylvanian Pool
Eddy County, New Mexico
SW-NE CROSS SECTION
11-14-62 By R.E.W.

Case No. 2527 (De Novo)
Exhibit No. 2





CROSS SECTION B - B'

REVISED BY: A.G.
DECEMBER 5, 1962

MARATHON OIL COMPANY
ATOKA PENNSYLVANIAN POOL
EDDY COUNTY, NEW MEXICO

ATOKA PENNSYLVANIAN POOL
EDDY COUNTY, NEW MEXICO
BOTTOM HOLE PRESSURE DATA

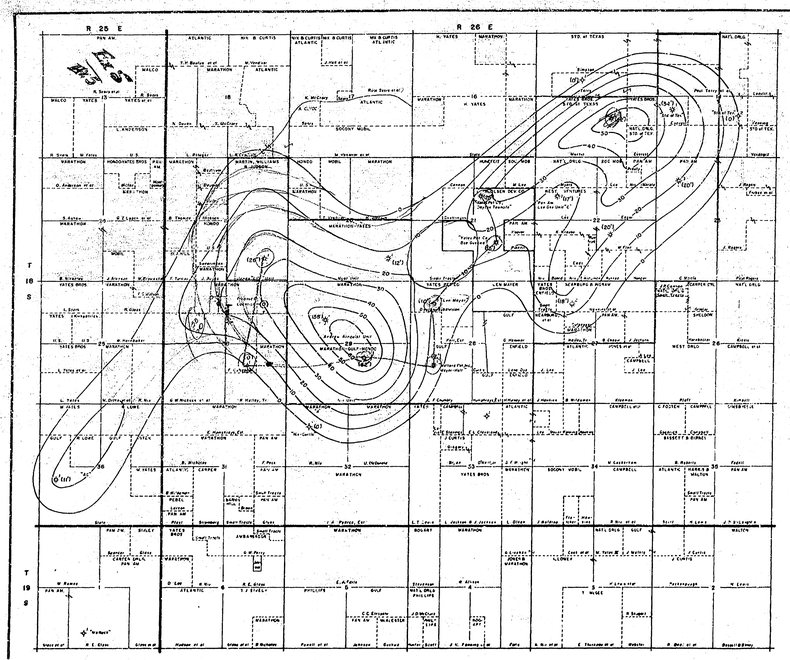
Company	Lease & Well No.	Test Date	Shut-in Time (Hrs)(Min)	BHP @ -5600' (PSIG)	Cum.Prod. @ Time of BHP Test (MMCF)	Total Pay Thickness	Remarks
1961 Cooperative Survey							
Marathon	Ralph Wix #3	3/15/61	72/40	3542	403	62'	Gen. Survey
	E.V.Noel #1	3/15/61	51/05	3589	226	12'	"
Std. of Texas	Everest #1	4/4/61	98/00	3571	334	33'	"
	Martin #1	3/31/61	43/00	3589	241	52'	"
Pan American	Pilot #1	3/24/61	52/30	3512	769	20'	"
Yates	Gushwa #1	4/28/61	-	3561	0	15'	Initial BHP
	Meyer #1	2/15/61	-	3592	0	10'	"
1962 Cooperative Survey							
Marathon	Ralph Wix #1	11/23/62	43/30	3228	589	62'	Gen. Survey
	Hinchliff #1	11/23/62	41/00	3248	340	58'	"
	E.V.Noel #1	11/23/62	45/00	3204	508	12'	"
Pan American	Pilot #1	10/10/62	307/66	3233	1591	20'	"
	Lea "C" #1	10/10/62	4 Hrs.	3258	492	10'	"

MARATHON OIL COMPANY

CASE NO. [illegible]
EXHIBIT NO. 6

2727 Cont. w/ 6 wells
2608 Wildcats
1 Injection well & total wells = 31
2 Why Increasing Gas from 25 Pay.

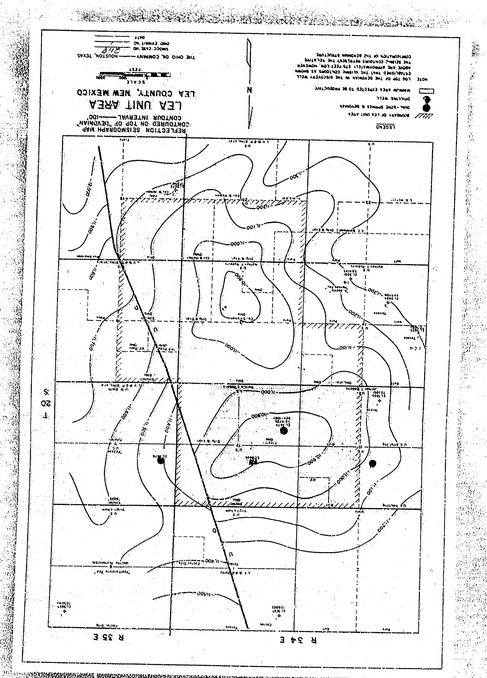
U.S.G.S. MICROGRAPHICS



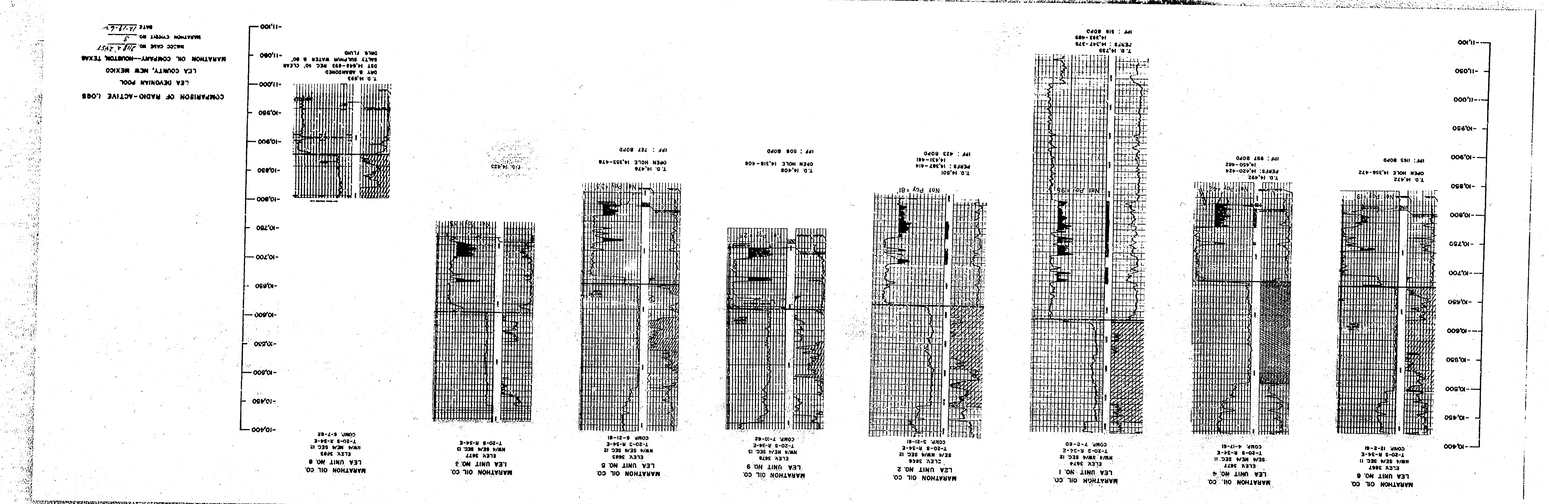
MARATHON OIL COMPANY
Atoka-Pennsylvanian Pool
Eddy County, New Mexico
ISOPACH of NET PAY
Contour Interval ---- 10'
Scale: 1" = 2000' By: TOW
August 15, 1962

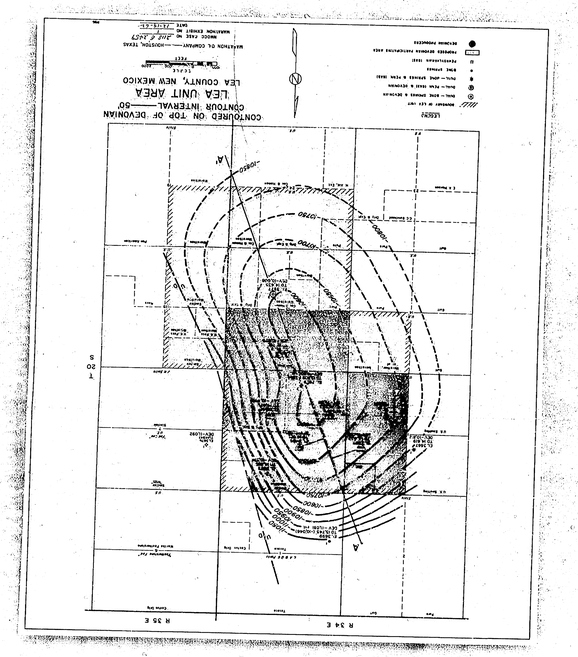
(A+B+C)
A, B+C

Case No. 3628 (De Novo)
Exhibit No. 6


SECTION SEISMOGRAM MAP
CONTOURED ON TOP OF TECHNICAL
CONTOUR INTERVAL—100
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
THE OHIO OIL COMPANY—HOBBS, TEXAS
LEASE
WELL
UNIT CODE NO
OWC CONTR NO
DATE
LEASED
BOUNDARY OF LEA UNIT AREA
DRILLING WELLS
DRY HOLE
PRODUCING WELLS
R 34 E
R 35 E
T 18 S




COMPARISON OF RADIO-ACTIVE LOGS
LEA DEVONIAN POOL
LEA COUNTY, NEW MEXICO
MARATHON OIL COMPANY—MONUMENTAL TEXAS
MAGIC CHAR NO. 207A-207F
MARATHON CREDIT NO. 3
DATE 12-12-62
T.D. 11,023
DRY & ABANDONED
SEC. 10, T-20-S, R-36-E
LEA COUNTY, NEW MEXICO
MARATHON OIL COMPANY
LEA UNIT NO. 8
ELEV. 3939
NW/4 NE/4 SEC. 12
T-20-S R-36-E
COMP 6-7-61
T.D. 11,423
MARATHON OIL CO.
LEA UNIT NO. 3
ELEV. 3877
NW/4 SE/4 SEC. D
T-20-S R-36-E
COMP 6-21-61
T.D. 11,418
OPEN HOLE 11,315-418
IPF : 727 BOPD
MARATHON OIL CO.
LEA UNIT NO. 5
ELEV. 3843
NW/4 SE/4 SEC. J2
T-20-S R-36-E
COMP 6-21-61
T.D. 11,408
OPEN HOLE 11,319-408
IPF : 508 BOPD
MARATHON OIL CO.
LEA UNIT NO. 9
ELEV. 3824
NW/4 NE/4 SEC. D
T-20-S R-36-E
COMP 7-10-62
T.D. 11,401
PERFS: 11,340-401
11,031-061
IPF : 423 BOPD
MARATHON OIL CO.
LEA UNIT NO. 2
ELEV. 3816
SE/4 NW/4 SEC. H
T-20-S R-36-E
COMP 5-2-61
T.D. 11,730
PERFS: 11,347-379
11,293-489
IPF : 816 BOPD
MARATHON OIL CO.
LEA UNIT NO. 1
ELEV. 3814
NW/4 SW/4 SEC. K
T-20-S R-36-E
COMP 7-4-60
T.D. 11,486
PERFS: 11,420-464
11,400-462
IPF : 997 BOPD
MARATHON OIL CO.
LEA UNIT NO. 4
ELEV. 3877
SE/4 NE/4 SEC. H
T-20-S R-36-E
COMP 6-17-61
T.D. 11,423
OPEN HOLE 11,336-422
IPF : 263 BOPD
MARATHON OIL CO.
LEA UNIT NO. 6
ELEV. 3887
NW/4 SE/4 SEC. H
T-20-S R-36-E
COMP 12-2-61
-10,400
-10,450
-10,500
-10,550
-10,600
-10,650
-10,700
-10,750
-10,800
-10,850
-10,900
-10,950
-11,000
-11,050
-11,100


CONTOURED ON TOP OF DEVONIAN
CONTOUR INTERVAL 50'
LEA UNIT AREA
LEA COUNTY, NEW MEXICO
R 34 E
R 35 E
T 20 S