BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Applicant EXHIBIT NO. 3
CASE NO. 4069 3/4/70

LOVINGTON DEVONIAN POOL
LEA COUNTY, NEW MEXICO
(CASE NO. 4069 - REOPENED)
March 4, 1970

Status of Reservoir Development

The Union Oil Company of California No. 1 Midway State well was completed December 23, 1968 from perforations 11,476' to 11,520' flowing 538 BOPD on 1/2" choke with 65 psi tubing pressure and GOR of 170 SCF/Bbl. Cumulative production to 1-1-70 is 133,973 barrels of oil and 16,264 MCF gas. Current production is approximately 316 BOPD and 6 BWPD by flowing. Estimated ultimate primary recovery is approximately 440,000 barrels oil.

The Union Oil Company of California No. 2 Midway State well was completed February 21, 1969 from perforations 11,518' to 11,522' flowing 351 BOPD and 19 BWPD on 1/2" choke with 40 psi tubing pressure and GOR of 197 SCF/Bbl. Cumulative production to 1-1-70 is 42,229 barrels of oil and 7,511 MCF gas. Current production is approximately 100 BOPD and 124 BWPD by pumping. Estimated ultimate primary recovery is approximately 93,000 barrels oil.

The Union Oil Company of California No. 3 Midway State well was drilled to TD of 11,637' and temporarily abandoned April 23, 1969. The well was recompleted as a salt water disposal well January 18, 1970 with injection into the Yates and San Andres formations from 4450' to 6068' open hole.

The Union Oil Company of California No. 4 Midway State well was drilled to TD of 11,697' and temporarily abandoned July 13, 1969.

Reservoir and Fluid Properties

A. Oil and Gas Properties

1. Oil Gravity - 49° API @ 60°F

2. Solution Gas Oil Ratio - 135 Cubic Feet/Barrel

changed from 170 at last hrg.

3. Gas Gravity - 0.919

4. Gas Analysis

Component	Mol.%	G.P.M.
CO_2	5.87	
N	2.30	
C_1	66.32	
C_2	7.16	
C_3	7.52	2.064
IC_4	2.15	0.701
NC_4	4.19	1.317
IC_5	1.39	0.507
NC_5	1.32	0.477
C_6^+	1.78	0.760
TOTAL	100.00	5.826

Same as last year

5. Hydrogen Sulfide in Gas - 250+ grains per 100 cu.ft. same

6. Estimated Formation Volume Factor - 1.13 chgd from 1.15

B. Reservoir Properties

1. Average Net Pay Thickness - 76 feet 94' at last hrg

2. Average Porosity - 6.2%

3. Average Permeability - 12.5 md.

4. Estimated Connate Water Saturation - 35%

5. Reservoir Temperature - 188°F

6. Original Bottom Hole Pressure - 4490 psig @ 7664 feet subsea

7. Estimated Recovery Factor - 25%

8. Assumed Water Oil Contact - 7770 feet subsea 7780 at last hrg.

9. Productivity Index of Midway State No. 1 - 0.5 BOPD/psi

Reserve Calculation

Recoverable Oil, Bbls/Acre Foot = $\frac{(7758)(0.062)(0.65)(0.25)}{1.13}$

= 69 Bbl/Acre Foot 68 at last hrg

= 5244 Bbl/Acre 6390 at last hrg

= 420,000 Bbl/80 Acres 511,600 at last hrg

= 210,000 Bbl/40 Acres 255800 at last hrg

Economics

A. Oil and Gas Price

1. Gross Oil Price - $3.31/Bbl 3.16 at last hrg

2. Gross Gas Price - $0.09/MCF .10 " " "

3. Royalty - 12.5%

4. State Taxes - 6.16% of value

B. Direct Operating Cost

$100/month per well while flowing 300 at last hrg
$600/month per well at initiation of pumping, increasing to
~~$200~~ 2000/month per well at abandonment.

C. Economic Limit

$$E.L. = \frac{\$2000}{(\$3.31)(0.875)(0.9384)(30.4)} = 24.2 \text{ BOPD}$$ 26.4 at last log

Assume 30.4 average days per month and no gas sales at abandonment.

D. Average Well Cost

1. Total cost of completed well - $250,000 including proportionate share of battery with salt water disposal facilities.

2. Total cost of pumping facilities - $40,000 per well

3. Dry hole cost - $151,000.

E. Estimated Profit After Federal Income Taxes

	40 Acre Well	80 Acre Well
Net Profit, $	149,919	494,504
Present Worth @ 5%, $	131,595	436,644
@ 8%, $	121,584	406,568
@ 10%,$	115,273	388,150
@ 20%,$	87,437	311,641
Rate of Return	72%	100+%
Profitability Index	.46	1.55
Payout, Years	1.0	0.8

PRODUCTION SUMMARY
LOVINGTON DEVONIAN POOL
LEA COUNTY, NEW MEXICO

	MIDWAY STATE NO. 1				MIDWAY STATE NO. 2			
MONTH	MONTHLY OIL PROD. BBL.	DAYS PRODUCED	DAILY AVERAGE PROD. BOPD	MONTHLY GAS PROD. MCF	MONTHLY OIL PROD. BBL.	DAYS PRODUCED	DAILY AVERAGE PROD. BOPD	MONTHLY GAS PROD. MCF
1968 Dec.	3,519	8	440	598				
1969 Jan.	9,156	26	352	1,456				
Feb.	9,721	28	347	1,497	1,335	8	167	92
Mar.	10,376	29	358	1,025	3,291	21	157	492
Apr.	11,855	30	395	1,058	1,905	27	71	476
May	12,233	31	395	1,388	4,492	23	195	624
Jun.	11,104	30	370	1,399	6,582	30	219	1,006
Jul.	11,085	31	358	1,430	5,190	30	173	709
Aug.	10,718	31	346	1,359	4,474	31	144	1,029
Sep.	11,070	30	369	1,185	4,391	30	146	1,024
Oct.	11,889	31	384	1,480	3,750	31	121	800
Nov.	11,010	30	367	1,425	3,612	30	120	717
Dec.	10,237	31	330	964	3,207	31	103	542
TOTAL	133,973			16,264	42,229			7,511

CUMULATIVE POOL PRODUCTION TO 1-1-70 = 176,202 BO and 23,775 MCF gas
POOL GOR = 135 SCF/BO