

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 2856
ORDER NO. 3215

IN THE MATTER OF A HEARING CALLED
ON A MOTION OF THE COMMISSION TO
CONSIDER THE PROPER SPACING FOR
THE DEVELOPMENT OF THE
AMBROSE-DUPEROW POOL, DIVIDE
COUNTY, NORTH DAKOTA, REDEFINE
THE LIMITS OF THE FIELD, AND ENACT
SUCH SPECIAL FIELD RULES AS MAY BE
NECESSARY.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:00 a.m. on the 6th day of July, 1983, in Williston, North Dakota, before the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 3rd day of August, 1983 the Commission, a quorum being present having considered the testimony adduced and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That geological and engineering evidence presented to the Commission relative to the matter of well spacing indicates that the Ambrose-Duperow Pool, as classified and defined in this order, should be developed on a pattern of one well to 160 acres in order to drain efficiently the recoverable oil from said pool, assure rapid development, avoid the drilling of unnecessary wells, and prevent waste in a manner that will protect correlative rights.

(3) That proper 160-acre spacing in the Duperow Pool in this field will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells, and will protect correlative rights.

(4) That the unrestricted flaring of gas produced from the Ambrose-Duperow Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until the wells producing therefrom are connected to a gas gathering and processing facility.

(5) That certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

IT IS THEREFORE ORDERED:

(1) That the Ambrose Field is hereby redefined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 15, 22, 23 AND 24.

together with those additional quarter sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands adjacent to the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

(2) That the Ambrose-Duperow Pool be, and the same is hereby defined as that accumulation of oil and gas found below the base of the Birdbear Formation and above the top of the Souris River Formation within the limits of the field as set forth above.

(3) That effective this date, the proper spacing for the development of the Ambrose-Duperow Pool be, and the same is hereby set at one well to 160 acres.

(4) That all wells hereafter drilled to said pool shall be located not less than 500 feet from a spacing unit boundary nor closer than 1,650 feet to a well permitted to or producing from the pool. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.

(5) That spacing units for the Ambrose-Duperow Pool shall consist of a governmental quarter section, or lots corresponding thereto, as determined by governmental survey.

(6) That no well shall be drilled hereafter in the Ambrose-Duperow Pool except in conformity with the regulations above without special order of the Commission after due notice and hearing.

(7) That the following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Ambrose-Duperow Pool;

- (a) The surface casing shall consist of new or reconditioned pipe that has been previously tested to 1000 pounds per square inch. The casing shall be set and cemented at a point not less than 50 feet below the base of the Fox Hills Formation. Sufficient cement shall be used to fill the annular space outside the pipe to the surface of the ground or the bottom of the cellar, and sufficient scratchers and centralizers shall be used to assure a good cement job.

Cement shall be allowed to stand a minimum of 12 hours before drilling the plug or initiating tests.

- (b) The producing or oil string shall consist of new or reconditioned pipe that has been previously tested to 3000 pounds per square inch. Casing shall be set and cemented at a point not higher than the top of the producing formation. Sufficient cement shall be used and applied in such manner as to adequately protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and to isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 24 hours before drilling the plug or initiating tests. After cementing, the casing shall be tested by application of pump pressure of at least 2000 pounds per square inch. If, at the end of 30 minutes this pressure shall have dropped 150 pounds per square inch or more, the casing shall be repaired. Thereafter, the casing shall again be tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained.
- (c) All well-head fittings and connections shall have a working pressure in excess of that to which they are expected to be subjected.
- (d) All wells shall be equipped with tubing; all tubing shall be of sufficient internal diameter to allow the passage of a bottom-hole pressure gauge for the purpose of obtaining bottom-hole pressure measurements.

(8) That the gas-oil ratio of each well shall be measured during the months of May and November, and the reservoir pressure of flowing wells shall be measured in the months of May and November, and in pumping wells when the rods are pulled but at least once annually and reported to the Enforcement Officer within 15 days following the end of the month in which they are determined. Pressure measurements shall be made at or adjusted to a subsea datum of 6,340 feet after the well has been shut in for 48 hours. All gas-oil ratio and reservoir pressure determinations shall be made under the supervision of and by methods approved by the Enforcement Officer. The Enforcement Officer is authorized to waive these requirements if the necessity therefor can be demonstrated to his satisfaction.

(9) That no salt water shall be stored in pits in this field, except in an emergency, and approved by the Enforcement Officer.

(10) The Dakota-Lakota Series in and under the Ambrose Field, is hereby designated a disposal reservoir, and the Enforcement Officer is authorized to approve requests to utilize wells in the field, as herein defined, for salt water disposal purposes.

(11) That all wells in the Ambrose-Duperow Pool shall be allowed to produce at an unrestricted rate for a period of 60 days commencing on the first day oil is produced through well-head equipment into tanks from the ultimate producing interval after casing has been run; after that, oil

production from such wells shall not exceed an average of 200 barrels per day for a period of 60 days; after that, oil production from such wells shall not exceed an average of 150 barrels per day for a period of 60 days, thereafter, oil production from such wells shall not exceed an average of 100 barrels of oil per day; if and when such wells are connected to a gas gathering and processing facility the foregoing restrictions shall be removed, and the wells shall be allowed to produce at a maximum efficient rate.

(12) That this order shall cover all of the Ambrose-Duperow Pool common source of supply of crude oil and/or natural gas as herein defined, and shall continue in full force and effect until further order of the Commission or until the last well in the pool has been plugged and abandoned.

Dated this 3rd day of August, 1983.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Allen I. Olson
Allen I. Olson, Governor

Robert O. Wefald, Attorney General

/s/ Kent Jones
Kent Jones, Commissioner of Agriculture

**THE LOUISIANA LAND AND EXPLORATION COMPANY
WESTERN DIVISION**

Suite 2100, Great West Life Tower
1675 Broadway
Denver, Colorado 80202

Area Code 303
623-5758



July 8, 1983

Mr. F.E. Wilborn
North Dakota Industrial Commission
Oil and Gas Division
900 E. Boulevard
Bismarck, ND 58505

Re: Hearing for Proper Spacing - Ambrose-Duperow Pool
Case #2856 July 6, 1983
Township 163N-Range 99W
Sections 13,14,23 and 24
Divide County, North Dakota

Dear Mr. Wilborn:

The attached data is submitted as requested by the Commission
at the above-named hearing.

Thank you for allowing us this additional time to submit this
information to you.

Very truly yours,

THE LOUISIANA LAND AND EXPLORATION COMPANY

W.N. Holt, Jr.
Sr. Reservoir Engineer

WNH/~ws

attachment



Ambrose - Duperow Pool

Approximate TD: 9000'

Total Cost of Well to Completion: \$750,000

Price Oil Sold - Lease Operating Expense - ORRI
\$22/BBL

Approximately 34,090 BO to payout

If wells were drilled on less than 160 acre spacing, most wells would barely break even or not reach payout status creating an uneconomical environment.

TEST PHASE : SHUTIN PERIOD W 1

FINAL FLOW PRESSURE [PSIA] = 2455.52

PRODUCING TIME [MIN] = 11734.00

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	SURFACE PRESSURE PSIG	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****	*****	*****
1:40:20	22-FB	756.17	0.00	215.20	212.4	2455.52	0.00	
1:41:20	22-FB	757.17	1.00	218.20	212.4	2460.42	4.90	4.069
1:42:20	22-FB	758.17	2.00	220.63	212.4	2466.20	10.68	3.768
1:43:20	22-FB	759.17	3.00	223.01	212.4	2471.79	16.27	3.592
1:44:20	22-FB	760.17	4.00	225.30	212.4	2477.37	21.85	3.468
1:45:20	22-FB	761.17	5.00	227.62	212.4	2482.68	27.16	3.371
1:46:20	22-FB	762.17	6.00	229.93	212.4	2487.95	32.43	3.292
1:47:20	22-FB	763.17	7.00	220.41	212.4	2493.05	37.53	3.225
1:48:20	22-FB	764.17	8.00	222.14	212.4	2497.93	42.41	3.167
1:49:20	22-FB	765.17	9.00	224.76	212.4	2502.78	47.26	3.116
1:50:20	22-FB	766.17	10.00	228.12	212.4	2507.62	52.10	3.070
1:52:20	22-FB	768.17	12.00	230.99	212.4	2516.77	61.25	2.991
1:54:20	22-FB	770.17	14.00	234.97	212.4	2525.70	70.18	2.924
1:56:20	22-FB	772.17	16.00	239.89	212.4	2534.04	78.52	2.866
1:58:20	22-FB	774.17	18.00	243.15	212.4	2542.31	86.79	2.815
2: 0:20	22-FB	776.17	20.00	247.35	212.4	2550.18	94.66	2.769
2: 2:20	22-FB	778.17	22.00	251.42	212.4	2557.93	102.41	2.728
2: 4:20	22-FB	780.17	24.00	255.27	212.3	2565.37	109.85	2.690
2: 6:20	22-FB	782.17	26.00	259.19	212.3	2572.57	117.05	2.655
2: 8:20	22-FB	784.17	28.00	263.04	212.3	2579.44	123.92	2.623
2:10:20	22-FB	786.17	30.00	266.69	212.3	2586.21	130.69	2.593
2:15:20	22-FB	791.17	35.00	275.99	212.3	2602.29	146.77	2.527
2:20:20	22-FB	796.17	40.00	285.22	212.3	2617.25	161.73	2.469
2:25:20	22-FB	801.17	45.00	293.93	212.2	2631.00	175.48	2.418
2:30:20	22-FB	806.17	50.00	301.89	212.2	2644.03	188.51	2.372
2:35:20	22-FB	811.17	55.00	310.60	212.2	2656.32	200.80	2.331
2:40:20	22-FB	816.17	60.00	318.39	212.1	2668.14	212.62	2.294
3:10:20	22-FB	846.17	90.00	359.87	212.1	2726.46	270.94	2.119

AMBROSE

#1 NESS 41-23

BHP DATA

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 2455.52

PRODUCING TIME [MIN] = 11734.00

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME, MIN	DELTA TIME, MIN	SURFACE PRESSURE PSIG	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
*****	*****	*****	*****	*****	*****	*****	*****	*****
3:40:20	22-FB	876.17	120.00	389.39	212.1	2769.33	313.81	1.995
4:10:20	22-FB	906.17	150.00	412.30	212.0	2804.45	348.93	1.899
4:40:20	22-FB	936.17	180.00	430.78	212.0	2837.63	382.11	1.821
5:10:20	22-FB	966.17	210.00	446.78	212.0	2867.04	411.52	1.755
5:40:20	22-FB	996.17	240.00	462.99	212.0	2894.20	438.68	1.698
6:10:20	22-FB	1026.17	270.00	476.89	212.0	2918.04	462.52	1.648
6:40:20	22-FB	1056.17	300.00	490.79	211.9	2940.53	485.01	1.603
7:10:20	22-FB	1086.17	330.00	502.96	211.9	2960.68	505.16	1.563
7:40:20	22-FB	1116.17	360.00	514.70	211.9	2979.74	524.22	1.526
8:10:20	22-FB	1146.17	390.00	526.04	211.8	2997.73	542.21	1.493
8:40:20	22-FB	1176.17	420.00	537.08	211.8	3014.28	558.76	1.461
9:10:20	22-FB	1206.17	450.00	550.26	211.8	3030.18	574.66	1.433
9:40:20	22-FB	1236.17	480.00	559.24	211.8	3044.84	589.32	1.406
10:10:20	22-FB	1266.17	510.00	569.66	211.7	3059.25	603.73	1.380
10:40:20	22-FB	1296.17	540.00	579.37	211.7	3072.29	616.77	1.357
11:10:20	22-FB	1326.17	570.00	589.69	211.7	3085.09	629.57	1.334
11:40:20	22-FB	1356.17	600.00	598.76	211.7	3097.00	641.48	1.313
12:10:20	22-FB	1386.17	630.00	606.90	211.7	3108.37	652.85	1.293
12:40:20	22-FB	1416.17	660.00	615.38	211.6	3119.53	664.01	1.274
13:10:20	22-FB	1446.17	690.00	622.71	211.6	3129.83	674.31	1.255
13:40:20	22-FB	1476.17	720.00	629.46	211.6	3140.31	684.79	1.238
14:10:20	22-FB	1506.17	750.00	637.24	211.6	3150.06	694.54	1.221
14:40:20	22-FB	1536.17	780.00	643.40	211.6	3159.34	703.82	1.205
15:10:20	22-FB	1566.17	810.00	649.09	211.5	3168.30	712.78	1.190
15:40:20	22-FB	1596.17	840.00	655.38	211.5	3177.20	721.68	1.175
16:10:20	22-FB	1626.17	870.00	661.27	211.5	3185.60	730.08	1.161
16:40:20	22-FB	1656.17	900.00	666.14	211.5	3193.64	738.12	1.147
17:10:20	22-FB	1686.17	930.00	671.11	211.5	3201.58	746.06	1.134
17:40:20	22-FB	1716.17	960.00	676.18	211.5	3209.46	753.94	1.121
18:10:20	22-FB	1746.17	990.00	681.55	211.5	3217.14	761.62	1.109
18:40:20	22-FB	1776.17	1020.00	686.56	211.4	3224.81	769.29	1.097
19:10:20	22-FB	1806.17	1050.00	692.37	211.4	3232.22	776.70	1.085
19:40:20	22-FB	1836.17	1080.00	697.59	211.4	3239.08	783.56	1.074
20:10:20	22-FB	1866.17	1110.00	702.82	211.4	3245.90	790.38	1.063
20:40:20	22-FB	1896.17	1140.00	710.67	211.4	3252.58	797.06	1.053
21:10:20	22-FB	1926.17	1170.00	713.86	211.4	3258.90	803.38	1.043
21:40:20	22-FB	1956.17	1200.00	718.21	211.3	3265.24	809.72	1.033
22:10:20	22-FB	1986.17	1230.00	723.13	211.3	3271.11	815.59	1.023
22:40:20	22-FB	2016.17	1260.00	669.34	211.3	3234.96	779.44	1.013
23:10:20	22-FB	2046.17	1290.00	697.08	211.3	3269.02	813.50	1.004
23:40:20	22-FB	2076.17	1320.00	707.30	211.3	3279.89	824.37	0.995
0:10:20	23-FB	2106.17	1350.00	712.86	211.3	3287.78	832.26	0.986
0:40:20	23-FB	2136.17	1380.00	718.39	211.3	3294.41	838.89	0.978
1:10:20	23-FB	2166.17	1410.00	724.10	211.4	3300.90	845.38	0.970
1:40:20	23-FB	2196.17	1440.00	666.20	211.3	3258.37	802.85	0.961
2:10:20	23-FB	2226.17	1470.00	644.35	211.3	3256.46	800.94	0.953
2:40:20	23-FB	2256.17	1500.00	588.84	211.4	3240.37	784.85	0.946
3:10:20	23-FB	2286.17	1530.00	641.61	211.4	3292.72	837.20	0.938

TEST PHASE : SHUTIN PERIOD # 1
 FINAL FLOW PRESSURE [PSIA] = 2455.52
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*****	*****	*****	*****	*****	*****	*****	*****	*****
3:40:20	23-FB	2316.17	1560.00	657.71	211.4	3307.11	851.59	0.931
4:10:20	23-FB	2346.17	1590.00	668.85	211.4	3317.09	861.57	0.923
4:40:20	23-FB	2376.17	1620.00	677.58	211.4	3324.96	869.44	0.916
5:10:20	23-FB	2406.17	1650.00	684.50	211.4	3332.04	876.52	0.909
5:40:20	23-FB	2436.17	1680.00	692.05	211.4	3338.10	882.58	0.902
6:10:20	23-FB	2466.17	1710.00	697.13	211.4	3343.84	888.32	0.896
6:40:20	23-FB	2496.17	1740.00	704.06	211.4	3349.29	893.77	0.889
7:10:20	23-FB	2526.17	1770.00	707.73	211.4	3354.41	898.89	0.882
7:40:20	23-FB	2556.17	1800.00	712.35	211.6	3359.21	903.69	0.876
8:10:20	23-FB	2586.17	1830.00	717.34	211.5	3363.88	908.36	0.870
8:40:20	23-FB	2616.17	1860.00	721.21	211.5	3368.52	913.00	0.864
9:10:20	23-FB	2646.17	1890.00	726.19	211.5	3372.89	917.37	0.858
9:40:20	23-FB	2676.17	1920.00	729.29	211.5	3377.35	921.83	0.852
10:10:20	23-FB	2706.17	1950.00	734.95	211.5	3381.72	926.20	0.846
10:40:20	23-FB	2736.17	1980.00	739.91	211.5	3385.64	930.12	0.840
11:10:20	23-FB	2766.17	2010.00	744.62	211.5	3389.58	934.06	0.835
11:40:20	23-FB	2796.17	2040.00	749.35	211.5	3393.42	937.90	0.829
12:10:20	23-FB	2826.17	2070.00	753.12	211.4	3397.18	941.66	0.824
12:40:20	23-FB	2856.17	2100.00	757.93	211.4	3401.29	945.77	0.819
13:10:20	23-FB	2886.17	2130.00	762.61	211.4	3404.87	949.35	0.814
13:40:20	23-FB	2916.17	2160.00	766.47	211.4	3408.39	952.87	0.808
14:10:20	23-FB	2946.17	2190.00	770.31	211.4	3411.80	956.28	0.803
14:40:20	23-FB	2976.17	2220.00	774.63	211.4	3415.43	959.91	0.798
15:10:20	23-FB	3006.17	2250.00	778.46	211.4	3418.99	963.47	0.793
15:40:20	23-FB	3036.17	2280.00	781.36	211.4	3422.45	966.93	0.789
16:10:20	23-FB	3066.17	2310.00	784.75	211.4	3425.45	969.93	0.784
16:40:20	23-FB	3096.17	2340.00	787.74	211.4	3429.00	973.48	0.779
17:10:20	23-FB	3126.17	2370.00	788.13	211.4	3432.08	976.56	0.775
17:40:20	23-FB	3156.17	2400.00	790.42	211.4	3435.27	979.75	0.770
18:10:20	23-FB	3186.17	2430.00	792.04	211.4	3438.41	982.89	0.766
18:40:20	23-FB	3216.17	2460.00	793.94	211.4	3441.50	985.98	0.761
19:10:20	23-FB	3246.17	2490.00	796.03	211.4	3444.63	989.10	0.757
19:40:20	23-FB	3276.17	2520.00	798.27	211.4	3447.56	992.04	0.753
20:10:20	23-FB	3306.17	2550.00	801.43	211.4	3450.49	994.97	0.748
20:40:20	23-FB	3336.17	2580.00	803.30	211.4	3453.44	997.92	0.744
21:10:20	23-FB	3366.17	2610.00	805.75	211.4	3456.31	1000.79	0.740
21:40:20	23-FB	3396.17	2640.00	808.47	211.4	3459.33	1003.81	0.736
22:10:20	23-FB	3426.17	2670.00	810.36	211.4	3461.33	1005.81	0.732
22:40:20	23-FB	3456.17	2700.00	814.11	211.4	3465.39	1009.87	0.728
23:10:20	23-FB	3486.17	2730.00	816.80	211.4	3468.28	1012.76	0.724
23:40:20	23-FB	3516.17	2760.00	819.66	211.4	3471.02	1015.50	0.720
0:10:20	24-FB	3546.17	2790.00	822.33	211.4	3474.04	1018.52	0.716
0:40:20	24-FB	3576.17	2820.00	826.04	211.4	3476.81	1021.29	0.713
1:10:20	24-FB	3606.17	2850.00	829.22	211.4	3479.54	1024.02	0.709
1:40:20	24-FB	3636.17	2880.00	831.67	211.4	3482.23	1026.71	0.705
2:10:20	24-FB	3666.17	2910.00	834.66	211.4	3484.69	1029.17	0.702
2:40:20	24-FB	3696.17	2940.00	837.42	211.3	3487.21	1031.69	0.698
3:10:20	24-FB	3726.17	2970.00	838.87	211.3	3489.53	1034.01	0.695

TEST PHASE : SHUTIN PERIOD # 1
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*****	*****	*****	*****	*****	*****	*****	*****	*****
3:40:20	24-FB	3756.17	3000.00	841.35	211.3	3491.98	1036.46	0.691
4:10:20	24-FB	3786.17	3030.00	843.96	211.3	3494.19	1038.67	0.688
4:40:20	24-FB	3816.17	3060.00	845.86	211.3	3496.66	1041.14	0.684
5:10:20	24-FB	3846.17	3090.00	847.81	211.3	3498.98	1043.46	0.681
5:40:20	24-FB	3876.17	3120.00	849.91	211.3	3501.14	1045.62	0.678
6:10:20	24-FB	3906.17	3150.00	852.37	211.4	3503.41	1047.89	0.674
6:40:20	24-FB	3936.17	3180.00	854.11	211.3	3505.69	1050.17	0.671
7:10:20	24-FB	3966.17	3210.00	856.15	211.4	3507.82	1052.30	0.668
7:40:20	24-FB	3996.17	3240.00	858.21	211.4	3509.89	1054.37	0.665
8:10:20	24-FB	4026.17	3270.00	860.35	211.4	3512.08	1056.56	0.662
8:40:20	24-FB	4056.17	3300.00	862.37	211.4	3514.22	1058.70	0.659
9:10:20	24-FB	4086.17	3330.00	864.43	211.4	3516.35	1060.83	0.655
9:40:20	24-FB	4116.17	3360.00	866.82	211.4	3518.38	1062.86	0.652
10:10:20	24-FB	4146.17	3390.00	869.12	211.4	3520.33	1064.81	0.649
10:40:20	24-FB	4176.17	3420.00	872.42	211.4	3522.30	1066.78	0.647
11:10:20	24-FB	4206.17	3450.00	873.56	211.4	3524.33	1068.81	0.644
11:40:20	24-FB	4236.17	3480.00	875.16	211.4	3526.24	1070.72	0.641
12:10:20	24-FB	4266.17	3510.00	878.09	211.4	3528.25	1072.73	0.638
12:40:20	24-FB	4296.17	3540.00	879.95	211.4	3530.28	1074.76	0.635
13:10:20	24-FB	4326.17	3570.00	881.77	211.4	3531.97	1076.45	0.632
13:40:20	24-FB	4356.17	3600.00	883.22	211.4	3534.02	1078.50	0.629
14:10:20	24-FB	4386.17	3630.00	885.37	211.4	3535.82	1080.30	0.627
14:40:20	24-FB	4416.17	3660.00	887.87	211.4	3537.69	1082.17	0.624
15:10:20	24-FB	4446.17	3690.00	890.24	211.4	3539.55	1084.03	0.621
15:40:20	24-FB	4476.17	3720.00	891.01	211.4	3541.31	1085.79	0.618
16:10:20	24-FB	4506.17	3750.00	894.13	211.4	3543.14	1087.62	0.616
16:40:20	24-FB	4536.17	3780.00	894.97	211.4	3544.89	1089.37	0.613
17:10:20	24-FB	4566.17	3810.00	897.56	211.4	3546.61	1091.09	0.611
17:40:20	24-FB	4596.17	3840.00	897.89	211.4	3548.15	1092.63	0.608
18:10:20	24-FB	4626.17	3870.00	899.45	211.4	3550.05	1094.53	0.606
18:40:20	24-FB	4656.17	3900.00	900.97	211.4	3551.75	1096.23	0.603
19:10:20	24-FB	4686.17	3930.00	901.39	211.4	3553.41	1097.89	0.601
19:40:20	24-FB	4716.17	3960.00	903.09	211.4	3555.08	1099.56	0.598
20:10:20	24-FB	4746.17	3990.00	903.78	211.4	3556.74	1101.22	0.596
20:40:20	24-FB	4776.17	4020.00	905.58	211.4	3558.43	1102.91	0.593
21:10:20	24-FB	4806.17	4050.00	906.67	211.4	3560.00	1104.48	0.591
21:40:20	24-FB	4836.17	4080.00	908.27	211.4	3561.67	1106.15	0.588
22:10:20	24-FB	4866.17	4110.00	910.06	211.4	3563.28	1107.76	0.586
22:40:20	24-FB	4896.17	4140.00	911.44	211.4	3564.85	1109.33	0.584
23:10:20	24-FB	4926.17	4170.00	913.14	211.4	3566.41	1110.89	0.581
23:40:20	24-FB	4956.17	4200.00	915.16	211.4	3568.11	1112.59	0.579
0:10:20	25-FB	4986.17	4230.00	917.14	211.4	3569.73	1114.21	0.577
0:40:20	25-FB	5016.17	4260.00	918.55	211.4	3571.08	1115.56	0.575
1:10:20	25-FB	5046.17	4290.00	920.16	211.4	3572.72	1117.20	0.572
1:40:20	25-FB	5076.17	4320.00	922.23	211.4	3574.14	1118.62	0.570
2:10:20	25-FB	5106.17	4350.00	923.00	211.4	3575.60	1120.08	0.568
2:40:20	25-FB	5136.17	4380.00	923.73	211.4	3577.10	1121.58	0.566
3:10:20	25-FB	5166.17	4410.00	925.00	211.4	3578.52	1123.00	0.564

TEST PHASE : SHUTIN PERIOD # 1
 FINAL FLOW PRESSURE [PSIA] = 2455.52
 PRODUCING TIME [MIN] = 11734.00

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	SURFACE PRESSURE PSIG	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNERS TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****	*****	*****
3:40:20	25-FB	5196.17	4440.00	926.44	211.4	3580.09	1124.57	0.561
4:10:20	25-FB	5226.17	4470.00	927.64	211.4	3581.36	1125.84	0.559
4:40:20	25-FB	5256.17	4500.00	929.03	211.4	3582.88	1127.36	0.557
5:10:20	25-FB	5286.17	4530.00	930.66	211.4	3584.35	1128.83	0.555
5:40:20	25-FB	5316.17	4560.00	931.94	211.4	3585.64	1130.12	0.553
6:10:20	25-FB	5346.17	4590.00	933.13	211.4	3587.17	1131.65	0.551
6:40:20	25-FB	5376.17	4620.00	934.27	211.4	3588.45	1132.93	0.549
7:10:20	25-FB	5406.17	4650.00	934.67	211.4	3589.82	1134.30	0.547
7:40:20	25-FB	5436.17	4680.00	935.96	211.4	3591.17	1135.65	0.545
8:10:20	25-FB	5466.17	4710.00	936.71	211.4	3592.57	1137.05	0.543
8:40:20	25-FB	5496.17	4740.00	939.59	211.4	3593.92	1138.40	0.541
9:10:20	25-FB	5526.17	4770.00	940.86	211.4	3595.04	1139.52	0.539
9:40:20	25-FB	5556.17	4800.00	942.89	211.4	3596.57	1141.05	0.537
10: 2:10	25-FB	5578.00	4821.83	943.33	211.4	3597.51	1141.99	0.536

#1 Bakke (TIPCO)

Cumulative Production	31 MBO
Remaining Reserves	30 MBO
Gross Ultimate Reserves	61 MBO

Calculated Reserves - Volumetric based on 160 acre

$$GUR = \frac{7758 (1-S_w) (R_p) (\emptyset) Ah}{B_o}$$

$$GUR = \frac{7758 (.7) (.15) (.1) (160) (6)}{1.2}$$

$$GUR = 65 \text{ MBO}$$

IPP	06/81	81 BOPD
Current Production		42 BOPD
Decline		28%

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

Date 7-06-83 Case No. 2856

Introduced by LL+E

Exhibit

Identified by.....

#1 Almos 11-23 (LL&E)

Cumulative Production	3 MBO
Remaining Reserves (production & decline)	185 MBO
Gross Ultimate Reserves	188 MBO

Calculated Reserves - Volumetric based on 160 acre

$$GUR = \frac{7758 (1 - S_{wv}) (R_f) (\phi_{av}) Ah}{B_o}$$

$$GUR = \frac{7758 (.75) (.15) (.10) (160) (13)}{1.2} = 151 \text{ MBO}$$

$$GUR = 151 \text{ MBO}$$

IPF 07/83 400 BOPD
Current 400 BOPD
Decline - Flowing production will drop off rapidly
Stabilize about 200 BOPD @ 30% decline

In our opinion, this well will drain 160 acres.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

Date 7-06-83 Case No. 2856

Introduced by LL&E

Exhibit

Identified by

#1 Ness 41-34 (LL&E)

Cumulative Production	10 MBO
Remaining Reserves (by production)	80 MBO
Gross Ultimate	90 MBO
Calculated Reserves - Volumetric based on 160 acre	

$$GUR_1 = \frac{7758 (1-S_w) (R_p) (0) Ah}{B_o}$$

$$GUR_1 = \frac{7758 (.7) (.15) (.09) (160) (5)}{1.2} = 50 \text{ MBO}$$

$$GUR_2 = \frac{7758 (.7) (.15) (.04) (160) (5)}{1.2} = 22 \text{ MBO}$$

$$GUR_t = 77 \text{ MBO}$$

IPF 02/83	153 BOPD
Current production	90 BOPD
Decline	30%

In our opinion, this well will drain 160 acres.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA
Date 7-06-83 Case No. 2856
Introduced by LL&E
Exhibit _____
Identified by _____

STRUCTURE

LOCATION

LOG

COLLAGE

(SEE MAP IN CASE FILE)

Notice of Publication

NOTICE OF PUBLICATION
NORTH DAKOTA
INDUSTRIAL COMMISSION
BISMARCK, NORTH DAKOTA

The State of North Dakota by its Industrial Commission hereby gives notice pursuant to law and the rules and regulations of said Commission promulgated thereunder of the following public hearing to be held at 9:00 a.m. on July 6, 1983, Ramada Inn, Williston, North Dakota. For the purpose of this hearing the Commission, any member thereof acting as Examiner, or an Examiner appointed by the Commission will receive testimony and exhibits.

STATE OF NORTH DAKOTA TO:

All named parties and persons having any right, title, interest, or claim in the following cases and notices to the public: CASE NO. 2856, ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE AMBROSE-DUPEROW POOL, DIVIDE COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY. TEXAS INTERNATIONAL PETROLEUM CORPORATION

Signed by:

Allen I. Olson, Governor

Chairman

ND Industrial Commission

(June 22, 1983)

Affidavit of Publication

State of North Dakota, County of Divide, SS.

JOHN M. ANDRIST, of said County and State, being first duly sworn, on his oath says: That The Divide County Journal, a continuation of the Crosby Eagle, is a weekly newspaper of general circulation, printed and published in the city of Crosby, in said county and state, by John M. Andrist, Editor, and has been such newspaper during the times hereinafter mentioned; and that I, JOHN M. ANDRIST, the editor, during all such times have been the editor of said newspaper, and have personal knowledge of all the facts stated in this affidavit; and that the advertisement headed Notice of Publication

a printed copy of which is hereunto attached, was printed and published in said newspaper for a period of 2 consecutive weeks, to-wit:

June 22, 1983

PAID

Subscribed and sworn to before me

June 24, 1983

Notary Public, Divide County, N. D.

BAROLD L. NELSON
ADMINISTRATIVE OFFICIAL

My Commission Expires

SHIRLEY PETERMAN
(Seal) District Court
Divide County, Crosby, N. Dak.