

OILFIELD RESEARCH LABORATORIES

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September 4, 1980

Mid-States Petroleum Corporation
P. O. Box 402
Paola, Kansas 66071

Gentlemen:

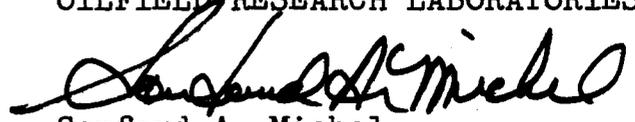
Enclosed herewith are the results of tests run on the rotary core taken from the Kirby-Nelson Lease, Well No. 4, Miami County, Kansas and submitted to our laboratory on July 11, 1980.

The core was sampled and sealed in plastic bags by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES


Sanford A. Michel

SAM/ks

5 c to Paola, Kansas

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GENERAL INFORMATION & SUMMARY

Company Mid-States Petroleum Corporation Kirby-Nelson Well No. 4
 Location NE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$
 Section 31 Twp. 16S Rge. 24E County Miami State Kansas

Elevation, Feet	-
Name of Sand	Cattleman
Top of Core	568.0
Bottom of Core	588.5
Top of Sand	568.0
Bottom of Sand	587.4
Total Feet of Permeable Sand	15.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

	Feet	Cum. Ft.
0 - 15	6.6	6.6
15 - 30	0.8	7.4
30 - 60	1.5	8.9
105 - 180	5.1	14.0
290 & Above	1.0	15.0

Average Permeability Millidarcys	83.1
Average Percent Porosity	20.2
Average Percent Oil Saturation	44.7
Average Percent Water Saturation	16.3
Average Oil Content, Bbls./A. Ft.	721.
Total Oil Content, Bbls./Acre	10,821.

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LOGName Mid-States Petroleum Corporation Lease Kirby-Nelson Well No. 4

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
	<u>CATTLEMAN SAND</u>
568.0 - 573.7	Dark brown slightly calcareous sandstone.
573.7 - 575.8	Grayish brown slightly laminated sandstone and shale.
575.8 - 576.8	Gray sandy shale.
576.8 - 580.3	Brown and gray laminated sandstone and shale.
580.3 - 581.7	Brown sandstone.
581.7 - 583.5	Brown and gray laminated sandstone and shale.
583.5 - 586.9	Gray sandy shale.
586.9 - 587.4	Brown sandstone.
587.4 - 588.5	Gray sandy shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE I-B

Company Mid-States Petroleum Corporation Lease Kirby-Nelson

Well No. 4

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation		Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water			Ft.	Cum. Ft.		
1	568.5	21.3	14	3	231	145.	1.0	1.0	231	145.00
2	569.5	25.8	46	4	921	296.	1.0	2.0	921	296.00
3	570.5	22.9	63	4	1119	176.	1.0	3.0	1119	176.00
4	571.5	24.5	60	4	1140	160.	1.0	4.0	1140	160.00
5	572.5	23.9	59	2	1094	179.	1.0	5.0	1094	179.00
6	573.5	23.3	56	2	1012	148.	0.7	5.7	708	103.60
7	574.5	14.4	40	40	447	13.	1.3	7.0	581	16.90
8	575.5	20.0	45	4	698	29.	0.8	7.8	558	23.20
9	577.5	13.8	39	40	418	1.5	1.2	9.0	502	1.80
10	578.5	18.2	47	29	664	5.2	1.0	10.0	664	5.20
11	579.5	19.6	48	2	730	11.	1.3	11.3	949	14.30
12	580.5	24.3	49	7	924	108.	0.4	11.7	370	43.20
13	581.5	23.5	55	7	1003	58.	1.0	12.7	1003	58.00
14	582.5	14.5	29	41	326	2.3	1.0	13.7	326	2.30
15	583.0	21.3	43	10	711	6.1	0.8	14.5	569	4.88
16	587.2	15.7	14	64	171	34.	0.5	15.0	86	17.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Lease	Well No.				
Mid-States Petroleum Corporation	Kirby-Nelson	4				
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Oil Saturation	Average Percent Water Saturation	Total Oil Content Bbls./Acre
568.0 - 587.4	15.0	83.1	1246.38	44.7	16.3	721
568.0 - 587.4	15.0	20.2	10,821	44.7	16.3	721