OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

700 NORTH MISSION - OKMULGEE, OKLAHOMA - PHONE SK6-4444

Chanute, Kansas

July 7, 1965

Larry Moore Ranch
Box "A"
Mound Valley, Kansas

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary core taken from the Merrick Lease, Well No. 7, Labette County, Kansas, and submitted to our laboratory on June 30, 1965.

This core was sampled and the samples sealed in cans by a representative of Oilfield Research Laboratories.

The upper portion of the core was not recovered intact, due to core barrel difficulties, and the depths of the first four samples are unknown.

Using the following data and assumptions the calculated recovery is 3,340 barrels of oil per acre in the vicinity of this well:

Original formation volume factor	1.05
Present formation volume factor	1.02
Reservoir water saturation, percent	34.0
Average porosity, percent	22.8
Estimated primary recovery, percent	8.0
Residual oil saturation, percent	21.7
Performance factor, percent	50.0
Net floodable pay sand, feet	11.2

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman

Benjamin R. Pearman

BRP:rf
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GENERAL INFORMATION & SUMMARY

Company Larry Moore Ranch Lease Merrick Well No. 7

Location S½ NE

Section 33 Twp. ~~33~~ 32? S Rge. 18E County Labette State Kansas

Name of Sand	Bartlesville
Top of Core	740.0
Bottom of Core (Reported)	788.0
Top of Sand (Tested)	740.0
Bottom of Sand (Tested)	783.0
Total Feet of Permeable Sand	28.8
Total Feet of Floodable Sand	11.2

Distribution of Permeable Sand:

Permeability Range Millidarcys (Effective)	Feet	Cum. Ft.
0.100 - 1.00	15.6	15.6
1.00 - 10.00	5.4	21.0
10.00 - 70.00	7.8	28.8

Average Permeability Millidarcys (Effective)	22.59
Average Percent Porosity -Floodable Sand-	22.8
Average Percent Oil Saturation -Floodable Sand-	26.5
Average Percent Water Saturation	-
Average Oil Content, Bbls./A. Ft. -Floodable Sand-	466.
Total Oil Content, Bbls./Acre -Floodable Sand-	5,232.
Average Percent Oil Recovery by Laboratory Flooding Tests	4.8
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	88.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	991.
Total Calculated Oil Recovery, Bbls./Acre	3,340.
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

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Company Larry Moore Ranch Lease Merrick Well No. 7

Depth Interval, Feet	Description
740.0 - 746.0	Gray and light brown laminated sandstone and shale.
746.0 - 758.0	Loss.
758.0 - 767.0	Brown, laminated, shaly sandstone.
767.0 - 769.6	Brownish gray, conglomeratic sandstone.
769.6 - 776.0	Brown, slightly shaly sandstone.
776.0 - 776.2	Shale.
776.2 - 783.0	Brown sandstone.
783.0 - 783.2	Shale.
783.2 - 783.9	Brown to dark carbonaceous, shaly sandstone.
783.9 - 784.0	Shale.
784.0 - 788.0	Loss.

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Larry Moore Ranch Lease Merrick Well No. 7

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	740+	17.7	15	206	0	0	15	81	206	21	0.350	40
2	?	15.5	23	276	0	0	23	60	276	7	0.123	50
3	?	17.9	16	222	0	0	16	77	222	2	0.100	50
4	?	20.0	19	294	3	47	16	75	247	325	4.07	30
5	758.1	14.9	5	58	0	0	5	82	58	8	0.200	50
6	759.1	17.7	19	260	0	0	19	68	260	5	0.300	50
7	760.1	18.4	21	300	0	0	21	73	300	15	0.400	40
8	761.1	17.4	20	270	0	0	20	73	270	12	0.300	40
9	762.1	18.7	21	304	0	0	21	73	304	18	0.500	40
10	763.1	18.8	25	364	0	0	25	71	364	23	0.500	40
11	764.1	18.6	26	375	0	0	26	71	375	74	1.90	30
12	765.1	20.0	25	388	0	0	25	72	388	139	3.40	20
13	766.1	17.2	21	280	0	0	21	78	280	12	0.375	30
14	767.1	15.0	14	163	0	0	14	80	163	2	0.100	50
15	768.1	14.8	9	103	0	0	9	82	103	4	0.200	45
16	769.1	16.4	15	191	0	0	15	77	191	8	0.300	40
17	770.1	19.1	22	326	0	0	22	77	326	30	0.700	25
18	771.1	21.9	30	509	3	51	27	71	458	222	6.00	20
19	772.1	17.2	20	266	0	0	20	78	266	18	0.445	25
20	773.1	17.0	12	158	0	0	12	82	158	14	0.400	30
21	774.1	21.7	30	505	2	34	28	71	471	321	13.51	10
22	775.1	19.4	29	436	2	30	27	71	406	44	1.20	20
23	776.4	20.7	29	466	4	64	25	73	402	402	11.40	10
24	777.1	21.5	29	484	7	117	22	72	367	150	33.95	10
25	778.1	22.1	30	514	6	103	24	67	411	305	16.26	10

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Larry Moore Ranch Lease Merrick Well No. 7

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
26	779.1	25.2	24	469	10	195	14	84	274	633	69.90	10
27	780.1	26.6	28	577	6	124	22	76	453	397	27.25	10
28	781.1	25.0	25	484	9	175	16	81	309	692	53.10	10
29	782.1	25.2	22	429	3	59	19	80	370	340	17.50	10

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Larry Moore Ranch Lease Merrick Well No. 7

Depth Interval, Feet	740.0 - 769.6	769.6 - 783.0	740.0 - 783.0
Feet of Core Analyzed	1.0	10.2	11.2
Average Percent Porosity	20.0	23.0	22.8
Average Percent Original Oil Saturation	19.0	27.2	26.5
Average Percent Oil Recovery	3.0	5.0	4.8
Average Percent Residual Oil Saturation	16.0	22.2	21.7
Average Percent Residual Water Saturation	75.0	74.7	74.7
Average Percent Total Residual Fluid Saturation	91.0	96.9	96.4
Average Original Oil Content, Bbls./A. Ft.	294.	483.	466.
Average Oil Recovery, Bbls./A. Ft.	47.	92.	88.
Average Residual Oil Content, Bbls./A. Ft.	247.	391.	378.
Total Original Oil Content, Bbls./Acre	294.	4,938.	5,232.
Total Oil Recovery, Bbls./Acre	47.	944.	991.
Total Residual Oil Content, Bbls./Acre	247.	3,994.	4,241.
Average Effective Permeability, Millidarcys	4.07	24.39	22.59
Average Initial Fluid Production Pressure, p.s.i.	30.0	12.0	13.6

NOTE: Only those samples which recovered oil were used in calculating the above averages.