OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

28-27-19E

June 13, 1951

Berry & Eells
Newton, Kansas

Gentlemen:

Enclosed herewith is the report of the partial analysis of the Cable Tool core taken from the Reinhardt & Malson Lease, Well No. 33, Neosho County, Kansas, and submitted to our laboratory on June 2, 1951.

In calculating the recovery for the sands represented by this core, an allowance was made for oil lost during coring, and it was assumed that the true water saturation of both sands is 35 percent, and that the upper sand was drilled in semi-virgin territory and that the lower sand was drilled in virgin territory.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:mm

c.c. to Mr. L. C. McLaughlin

REINHARDT & MALSON 33

BERRY & EELLS

CORE ANALYSIS REPORT

REINHARDT & MALSON LEASE WELL NO. 33

NEOSHO COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

JUNE 12, 1951

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Location

Section 28 Twp. 27S Rge. 19E County Neosho State Kansas

UPPER SAND

Name of Sand	Upper Bartlesville
Top of Core	682.50
Bottom of Core	696.75
Top of Sand (According to Driller.)	678.00
Bottom of Sand	688.40
Total Feet of Permeable Sand (Analyzed)	3.00
Total Feet of Floodable Sand	0.58

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.

Average Effective Permeability Millidarcys	14.20
Average Percent Porosity	19.77
Average Percent Oil Saturation	22.93
Average Percent Water Saturation	-
Average Oil Content, Bbls./A. Ft.	342.
Total Oil Content, Bbls./Acre	1,027.
Average Percent Oil Recovery by Laboratory Flooding Tests	2.80
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	36.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	21.
Total Calculated Oil Recovery, Bbls./Acre	200.
Packer Setting, Feet	678.5
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Location

Section 28 Twp. 27S Rge. 19E County Neosho State Kansas

	LOWER SAND
Name of Sand	Lower Bartlesville
Top of Core	736.50
Bottom of Core	754.90
Top of Sand	744.38
Bottom of Sand	749.85
Total Feet of Permeable Sand (Analyzed)	3.10
Total Feet of Floodable Pay Sand	1.10

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.

Average Effective Permeability Millidarcys	6.42
Average Percent Porosity	17.44
Average Percent Oil Saturation	26.54
Average Percent Water Saturation	47.88
Average Oil Content, Bbls./A. Ft.	357.
Total Oil Content, Bbls./Acre	1,465.
Average Percent Oil Recovery by Laboratory Flooding Tests	8.45
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	112.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	123.
Total Calculated Oil Recovery, Bbls./Acre	475.
Packer Setting, Feet	-
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

LOG

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

UPPER SAND

Depth Interval, Feet	Description
682.50 - 683.10	Brown fine grained micaceous sandstone.
683.10 - 685.10	Loss.
685.10 - 686.40	Brown fine grained micaceous sandstone.
686.40 - 687.30	Brown fine grained micaceous carbonaceous sandstone.
687.30 - 687.60	Brown fine grained micaceous slightly shaley sandstone.
687.60 - 687.88	Brown fine grained micaceous sandstone.
687.88 - 688.40	Dark fine grained micaceous conglomeratic carbonaceous sandstone.
688.40 - 690.10	Gray shale.
690.10 - 695.00	Gray shale (Discarded at well).
695.00 - 696.75	Coal.

LOWER SAND

736.50 - 736.70	Gray sandy shale.
736.70 - 737.85	Light brown fine grained micaceous sandstone.
737.85 - 738.10	Gray sandy shale.
738.10 - 738.45	Light brown fine grained micaceous sandstone.
738.45 - 738.65	Gray sandy shale.
738.65 - 739.15	Light brown fine grained micaceous sandstone.
739.15 - 740.50	Gray sandy shale.
740.50 - 741.50	Light brown fine grained micaceous sandstone.
741.50 - 741.70	Gray sandy shale.
741.70 - 741.90	Light brown fine grained micaceous sandstone.
741.90 - 742.20	Gray sandy shale.
742.20 - 742.35	Light brown fine grained micaceous sandstone.

742.35 - 742.85 - Gray sandy shale.

742.85 - 743.80 - Light brown fine grained micaceous sandstone.

743.80 - 744.35 - Gray sandy shale.

744.35 - 746.10 - Brown fine grained micaceous sandstone.

746.10 - 746.25 - Gray sandy shale.

746.25 - 746.70 - Brown fine grained micaceous sandstone.

746.70 - 747.05 - Gray shale.

747.05 - 748.75 - Brown fine grained micaceous sandstone.

748.75 - 748.95 - Gray sandy shale.

748.95 - 749.10 - Brown fine grained micaceous sandstone.

749.10 - 749.40 - Gray sandy shale.

749.40 - 749.55 - Brown fine grained micaceous sandstone.

749.55 - 749.70 - Brown fine grained micaceous shaley sandstone.

749.70 - 750.00 - Brown fine grained micaceous slightly shaley sandstone.

750.00 - 750.35 - Gray sandy shale.

750.35 - 750.50 - Brown fine grained micaceous carbonaceous sandstone.

750.50 - 751.40 - Gray shale.

751.40 - 754.90 - Soft gray shale, (Discarded at well.).

Oil Field Research Laboratories

SHOT RECOMMENDATION

UPPER SAND

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Depth Interval, Feet	Feet of Sand	Size of Shell Inches	Qts./Ft.	Total Quarts
683.5 - 687.5	4.0	4.0	2.5	10.0

Recommended Packer Setting 678.5 feet.
Note: Plug hole back to 688.5 feet.

Oil Field Research Laboratories

SHOT RECOMMENDATION

LOWER SAND

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Depth Interval, Feet	Feet of Sand	Size of Shell Inches	Qts./Ft.	Total Quarts
746.5 - 749.5	3.0	4½	3.1	9.3

Note: Plug hole back to 750.0 feet.

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
				UPPER SAND					
F-1	683.03	21.8	19.2	-	-	324	0.60	0.60	194
F-2	685.32	20.8	20.5	-	-	331	0.70	1.30	232
F-3	686.23	23.1	19.7	-	-	354	0.60	1.90	212
F-4	687.38	16.7	30.5	-	-	395	0.58	2.48	229
F-5	688.28	15.4	25.7	-	-	307	0.52	3.00	160
				LOWER SAND					
1	745.12	19.7	22.6	45.9	68.5	346	1.25	4.25	433
F-2A	746.05	15.5	23.7	-	-	285	0.50	4.75	143
2	746.32	14.9	24.3	68.2	92.5	282	0.35	5.10	99
3	747.42	17.2	29.1	48.0	77.1	388	0.95	6.05	369
4	748.48	16.8	32.0	38.3	70.3	417	0.75	6.80	313
F-5	749.48	16.4	27.1	-	-	345	0.15	6.95	52
5	749.62	16.6	28.9	64.2	93.1	372	0.15	7.10	56
							Total - - - - -		2,492

Note: "A" sample was taken from the core after it was received in the laboratory.

Oil Field Research Laboratories

SUMMARY OF SATURATION TESTS

TABLE IV

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbls./A. Ft.	Total Oil Content Bbls./Acre
			UPPER SAND			
682.50 - 688.40	3.00	19.77	22.93	-	342	1,027
			LOWER SAND			
744.35 - 749.70	4.10	17.44	26.54	47.88	357	1,465
			OVERALL AVERAGES FOR BOTH SANDS			
682.50 - 749.70	7.10	18.42	25.01	-	351	2,492

Oil Field Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Berry & Wells Lease Reinhardt & Malson Well No. 33

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.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
					Upper Sand							
1	683.03	21.8	19.2	324	0.0	0	19.2	78.1	324	206	70.40	5
2	685.32	20.8	20.5	331	0.0	0	20.5	68.8	331	108	33.30	5
3	686.23	23.1	19.7	354	0.0	0	19.7	69.6	354	76	29.90	5
4	687.38	16.7	30.5	395	2.8	36	27.7	66.2	359	187	14.20	10
5	688.28	15.4	25.7	307	0.0	0	25.7	56.8	307	2	0.098	5
					Lower Sand							
1	744.97	19.8	21.6	332	0.00	0	21.6	76.5	332	67	11.60	20
2A	746.05	15.5	23.7	285	0.0	0	23.7	72.8	285	0	Imp.	50
3	747.27	17.3	28.9	388	8.8	118	20.1	70.6	270	110	6.96	20
4	748.33	16.5	31.8	407	0.0	0	31.8	62.7	407	35	1.27	25
5	749.48	16.4	27.1	345	5.8	74	21.3	62.2	271	53	2.98	25

Notes: cc - cubic centimeter
* - Volume of water recivered at the time of maximum oil recovery.
** - Determined by passing water through sample which still contains residual oil.
"A" - Sample was taken from core after it was received in the laboratory.

Oil Field Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company Berry & Eells Lease Reinhardt & Malson Well No. 33

	LOWER SAND
Depth, Interval, Feet	747.05 - 749.55
Feet of Core Analyzed	1.10
Average Percent Porosity	17.18
Average Percent Original Oil Saturation	28.72
Average Percent Oil Recovery	8.45
Average Percent Residual Oil Saturation	20.27
Average Percent Residual Water Saturation	69.45
Average Percent Total Residual Fluid Saturation	89.72
Average Original Oil Content, Bbls./A. Ft.	383.
Average Oil Recovery, Bbls./A. Ft.	112.
Average Residual Oil Content, Bbls./A. Ft.	271.
Total Original Oil Content, Bbls./Acre	421.
Total Oil Recovery, Bbls./Acre	123.
Total Residual Oil Content, Bbls./Acre	298.
Average Effective Permeability, Millidarcys	6.42
Average Initial Fluid Production Pressure, p.s.i.	22.5

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