

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

March 26, 1981

James E. Russell Petroleum, Inc.
P. O. Box 2618
Abilene, Texas 79604

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Minckley B, Sec. 3 Lease, Well No. 4, located in Anderson County, Kansas and submitted to our laboratory on February 4, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

3 c to Abilene, Texas
2 c to Chanute, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company James E. Russell Petroleum, Inc. Lease Minckley B. Sec. Well No. 4
 Location 1100' SNL & 660' EWL SW $\frac{1}{4}$ 3
 Section 3 Twp. 23S Rge. 19E County Anderson State Kansas

Elevation, Feet Datum: Mean Sea Level (Ground Level) 1040.

Name of Sand Squirrel

Top of Core 694.0

Bottom of Core 714.0

Top of Sand 694.0

Bottom of Sand 702.6

Total Feet of Permeable Sand 8.6

Total Feet of Floodable Sand 0.

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 3	4.6	4.6
5 - 10	3.0	7.6
10 - 21	2.0	8.6

Average Permeability Millidarcys 6.2

Average Percent Porosity 14.3

Average Percent Oil Saturation 44.9

Average Percent Water Saturation 41.4

Average Oil Content, Bbls./A. Ft. 517.

Total Oil Content, Bbls./Acre 4,442.

Average Percent Oil Recovery by Laboratory Flooding Tests 0.

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. 0.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre 0.

Total Calculated Oil Recovery, Bbls./Acre 0.

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The core was sampled by a representative of Oilfield Research Laboratories. Fresh water mud was used as a drilling fluid. The core was from a non-virgin area.

In as much as the core did not respond to flooding susceptibility tests, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
694.0 - 696.2	Sandstone, grayish brown, very shaly.
696.2 - 702.6	Sandstone and shale, brown and gray laminated.
702.6 - 714.0	Shale, gray, sandy.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company James E. Russell Petroleum, Inc. Lease Minckley B, Sec. 3 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	694.4	9.1	16	82	113	0.55	1.0	1.0	113	0.55
2	695.5	14.7	41	44	468	0.35	1.2	2.2	562	0.42
3	696.5	14.3	58	34	643	1.4	1.0	3.2	643	1.40
4	697.6	14.3	59	34	655	2.9	1.0	4.2	655	2.90
5	698.5	16.7	50	28	648	12.	1.0	5.2	648	12.00
6	699.6	15.8	46	35	564	20.	1.0	6.2	564	20.00
7	700.6	15.6	66	20	799	7.4	1.0	7.2	799	7.40
8	701.5	14.1	24	53	263	8.7	1.0	8.2	263	8.70
9	702.4	14.3	44	43	488	0.56	0.4	8.6	195	0.22

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company James E. Russell Petroleum, Inc. Lease Minckley B, Sec. 3 Well No. 4

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
694.0 - 702.6	8.6	6.2	53.59

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
694.0 - 702.6	8.6	14.3	44.9	41.4	517	4,442

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Minckley B, Sec. 3 Well No. 4

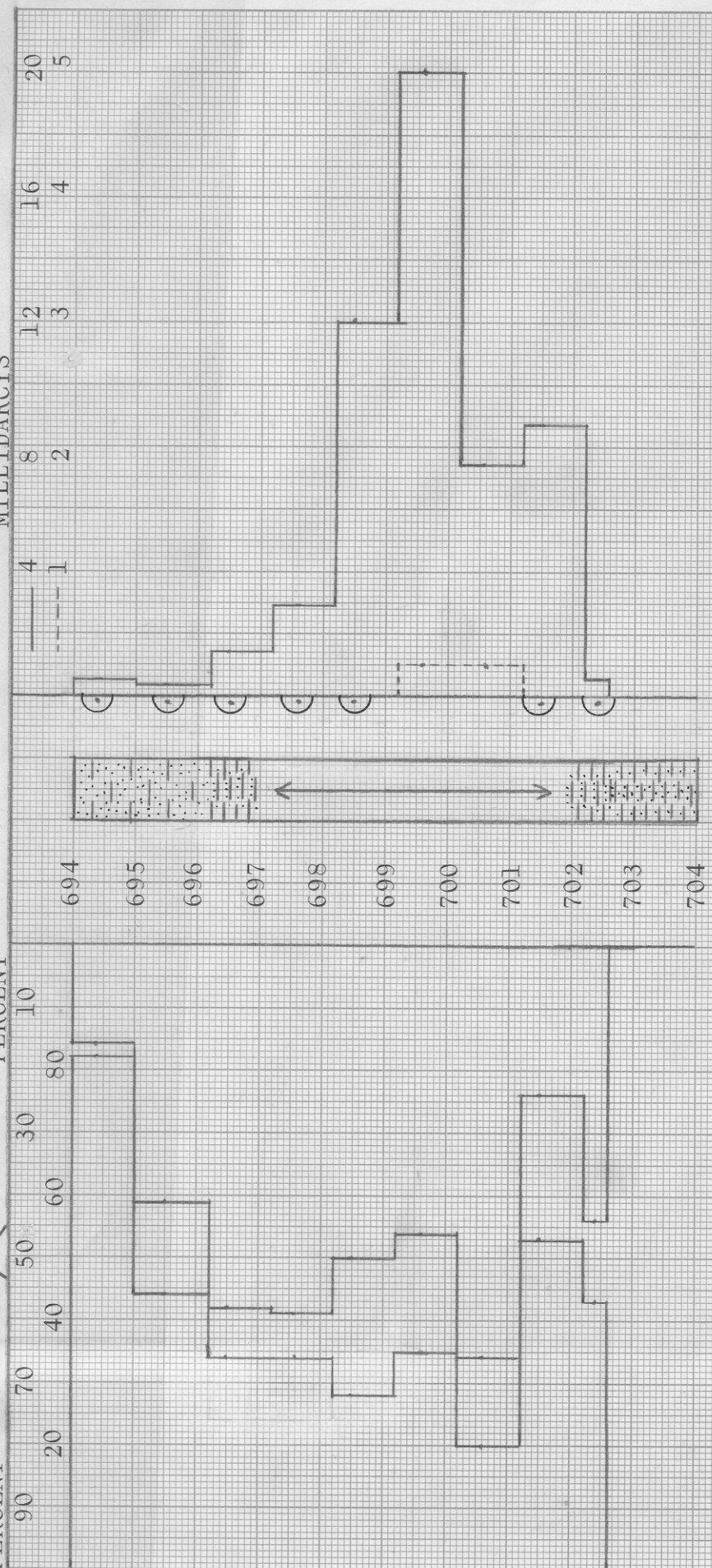
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	694.4	9.0	16	112	0	0	16	82	112	0	Imp.	-
2	695.5	15.1	40	469	0	0	40	45	469	0	Imp.	-
3	696.5	14.3	58	643	0	0	58	35	643	0	Imp.	-
4	697.6	14.0	60	652	0	0	60	33	652	0	Imp.	-
5	698.5	16.6	50	644	0	0	50	31	644	0	Imp.	-
6	699.6	15.9	46	567	0	0	46	45	567	5	0.25	45
7	700.6	15.7	66	804	0	0	66	24	804	7	0.25	45
8	701.5	13.8	25	268	0	0	25	54	268	0	Imp.	-
9	702.4	14.7	43	490	0	0	43	44	490	0	Imp.	-

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.

WATER SAT., PERCENT ———> OIL SAT., PERCENT ———> ———> EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS



KEY:

- SHALY SANDSTONE
- SANDY SHALE
- LAMINATED SANDSTONE AND SHALE
- IMPERMEABLE TO WATER

JAMES E. RUSSELL PETROLEUM, INC.

MINCKLEY "B", SECTION 3 LEASE ANDERSON COUNTY, KANSAS WELL NO. 4

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY PERCENT

JAMES E. RUSSELL PETROLEUM, INC.

MINCKLEY "B", SECTION 3 LEASE

WELL NO. 4

ANDERSON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE		AVG. OIL		AVG. WATER		AVERAGE		CALCULATED	
		POROSITY	PERCENT	SATURATION	PERCENT	SATURATION	PERCENT	PERMEABILITY,	PERCENT	OIL RECOVERY	BBLS. / ACRE

694.0 - 702.6

14.3

44.9

41.4

6.2

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ELEVATION, FEET - DATUM:MEAN SEA LEVEL (GROUND LEVEL) 1040.

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MARCH, 1981

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