

OILFIELD RESEARCH LABORATORIES

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

February 17, 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", Section 3 Lease, Well No. W-11, located in Anderson County, Kansas and submitted to our laboratory on January 24, 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. 3 Well No. W-11
 Location 1100' SNL & 450' EWL SW $\frac{1}{4}$
 Section 3 Twp 23S Rge 19E County Anderson State Kansas
 Elevation, Feet DATUM: Mean Sea Level (Ground Level) 1034.6

Name of Sand	Upper Squirrel
Top of Core	690.0
Bottom of Core	710.0
Top of Sand	691.8
Bottom of Sand	700.8
Total Feet of Permeable Sand	9.0
Total Feet of Floodable Sand	0.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 5	1.9	1.9
5 - 10	3.0	4.9
10 - 15	4.1	9.0

Average Permeability Millidarcys	8.8
Average Percent Porosity	15.2
Average Percent Oil Saturation	52.8
Average Percent Water Saturation	26.9
Average Oil Content, Bbls./A. Ft.	619.
Total Oil Content, Bbls./Acre	5,572.
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.

Since 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>
690.0 - 691.8	Shale, grayish light brown, sandy.
691.8 - 696.7	Sandstone, brown, shaly.
696.7 - 698.1	Sandstone, brown, slightly calcareous.
698.1 - 700.8	Sandstone, brown.
700.8 - 710.0	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. W-11

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	Total			Ft.	Cum. Ft.		
1	692.5	14.7	28	63	91	319	1.7	0.9	0.9	287	1.53
2	693.5	15.1	47	36	83	551	7.1	1.0	1.9	551	7.10
3	694.5	13.3	59	21	80	609	9.4	1.0	2.9	609	9.40
4	695.4	14.9	61	21	82	705	3.9	1.0	3.9	705	3.90
5	696.5	13.7	67	9	76	712	5.5	1.0	4.9	712	5.50
6	697.5	16.8	51	22	73	665	14.	1.4	6.3	931	19.60
7	698.5	15.1	55	30	85	644	11.	1.0	7.3	644	11.00
8	699.5	17.1	50	20	70	663	13.	1.0	8.3	663	13.00
9	700.5	15.2	57	25	82	672	12.	0.7	9.0	470	8.40

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		James E. Russell Petroleum, Inc.	Lease	Minckley "B", Sec. 3	Well No.	W-11
Depth Interval, Feet	Feet of Core Analyzed	Average Porosity Percent	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
691.8 - 700.8	9.0	15.2	52.8	26.9	619	5,572

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Minckley "B", Sec. 3 Well No. W-11

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc ^a	Effective Permeability Millidarcys ^{aa}	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbbls./A. Ft.	%	Bbbls./A. Ft.	% Oil	% Water			
1	692.5	15.2	27	318	0	0	27	66	0	Imp.	-
2	693.5	15.0	47	547	0	0	47	38	0	Imp.	-
3	694.5	12.9	60	600	0	0	60	22	0	Imp.	-
4	695.4	14.9	61	705	0	0	61	21	0	Imp.	-
5	696.5	13.7	67	712	0	0	67	16	0	Imp.	-
6	697.5	16.7	51	661	0	0	51	24	0	Imp.	-
7	698.5	14.9	55	636	0	0	55	31	0	Imp.	-
8	699.5	16.7	51	661	0	0	51	20	16	0.72	40
9	700.5	15.0	57	663	0	0	57	27	0	Imp.	-

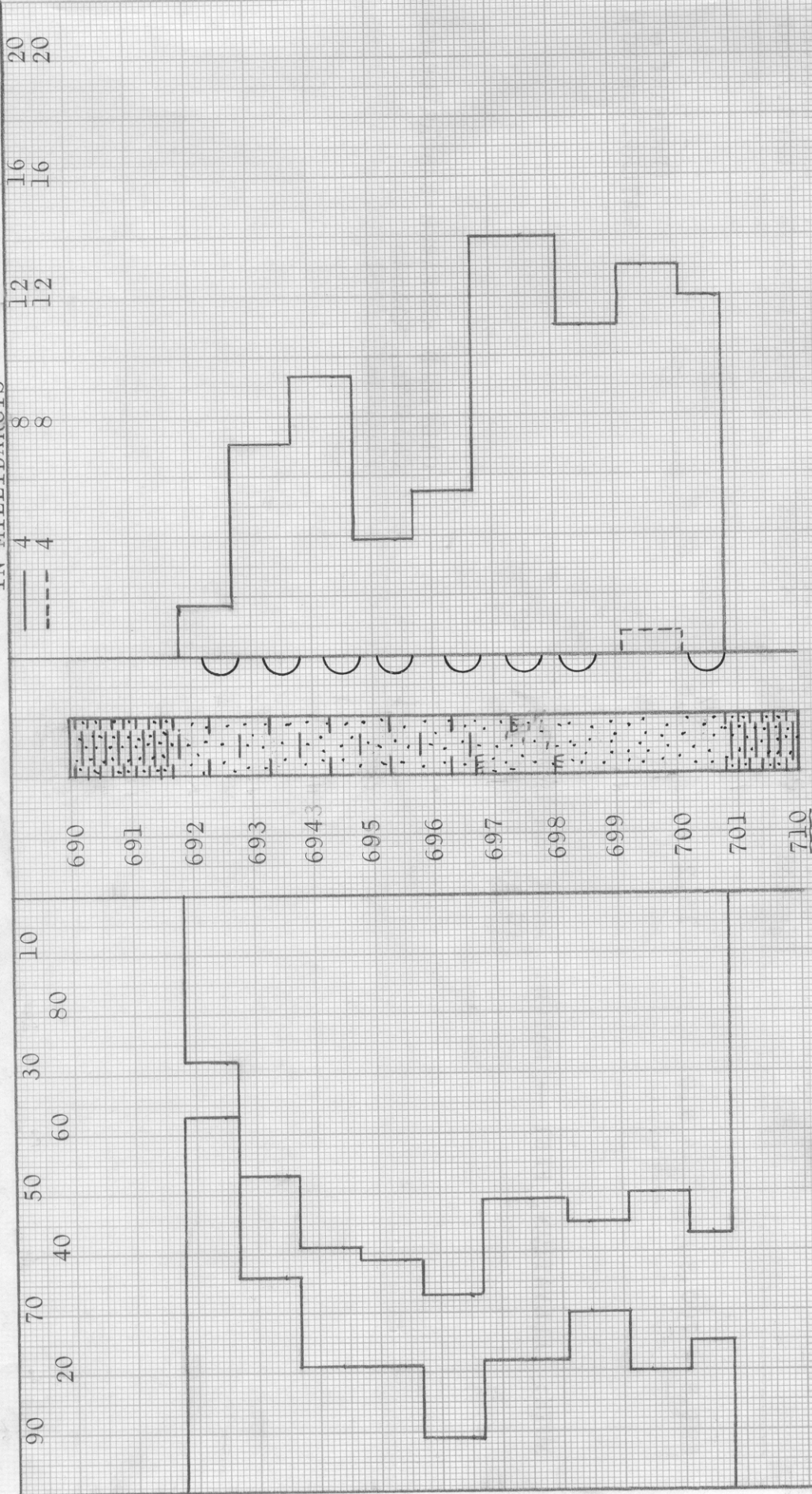
Notes: cc—cubic centimeter.

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

^{aa}—Determined by passing water through sample which still contains residual oil.

WATER SAT., ———> OIL SAT., ———>
PERCENT PERCENT

—— PERMEABILITY, IN MILLIDARCYS
--- EFFECTIVE PERMEABILITY TO WATER,
IN MILLIDARCYS



KEY:

—— SANDY SHALE

..... CALCAREOUS SANDSTONE

..... SANDSTONE

SHALY SANDSTONE

○ IMPERMEABLE TO WATER

JAMES E. RUSSELL PETROLEUM, INC.

MINCKLEY "B" LEASE

WELL NO. W-11

ANDERSON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY MILLIDARCYs	CALCULATED OIL RECOVERY BBLS./ACRE
691.8 - 700.8	9.0	15.2	52.8	26.9	8.8	- - - (PRIMARY & WATERFLOODING)

NOTE: ELEVATION, FEET — DATUM: MEAN SEA LEVEL
(C.L.) 1,034.6

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
FEBRUARY, 1981

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