

OILFIELD RESEARCH LABORATORIES

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

March 16, 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-12, located in Anderson County, Kansas and submitted to our laboratory on January 27, 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-12

Location 1100' SNL & 25' EWL SW $\frac{1}{4}$

Section 3 Twp. 23S Rge. 19E County Anderson State Kansas

Elevation, Feet Datum: Mean Sea Level (Ground Level) 1030.5

Name of Sand - - - - - Squirrel

Top of Core - - - - - 691.0

Bottom of Core - - - - - 711.3

Top of Sand - - - - - 693.3

Bottom of Sand - - - - - 702.6

Total Feet of Permeable Sand - - - - - 4.8

Total Feet of Floodable Sand - - - - - 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 1	2.8	2.8
4 & Above	2.0	4.8

Average Permeability Millidarcys - - - - - 3.0

Average Percent Porosity - - - - - 15.4

Average Percent Oil Saturation - - - - - 38.4

Average Percent Water Saturation - - - - - 41.9

Average Oil Content, Bbls./A. Ft. - - - - - 454.

Total Oil Content, Bbls./Acre - - - - - 4,221.

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.

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>
691.0 - 693.3	Shale, gray, sandy.
693.3 - 695.1	Sandstone, brown, shaly.
695.1 - 696.0	Sandstone, grayish brown, very shaly.
696.0 - 699.0	Sandstone, brown, shaly.
699.0 - 702.6	Sandstone, grayish brown, very shaly.
702.6 - 711.3	Shale, gray, sandy.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company James E. Russell Petroleum, Inc. Lease Minckley B, Sec. 3 Well No. W-12

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	693.5	17.3	33	43	76	0.18	1.0	1.0	443	0.18
2	694.5	16.7	52	28	80	0.83	0.8	1.8	539	0.66
3	695.5	9.9	42	50	92	Imp.	0.9	2.7	291	0.00
4	696.5	12.6	54	16	70	0.88	1.0	3.7	528	0.88
5	697.5	19.3	45	16	61	8.9	1.0	4.7	674	8.90
6	698.5	19.6	28	32	60	4.0	1.0	5.7	426	4.00
7	699.6	13.7	32	56	88	Imp.	1.0	6.7	340	0.00
8	700.6	15.7	26	68	94	Imp.	1.0	7.7	317	0.00
9	701.5	13.6	36	58	94	Imp.	1.0	8.7	380	0.00
10	702.5	15.2	40	55	95	Imp.	0.6	9.3	283	0.00

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		James E. Russell Petroleum, Inc.		Lease	Minckley B, Sec. 3		Well No.	W-12
Depth Interval, Feet		Feet of Core Analyzed		Average Permeability, Millidarcys		Permeability Capacity Ft. x Md.		Total Oil Content Bbls./Acre
693.3 - 699.0		4.8		3.0		14.62		509
699.0 - 702.6		0.0		0.0		0.00		367
693.3 - 702.6		4.8		3.0		14.62		454
Depth Interval, Feet		Feet of Core Analyzed		Average Percent Oil Saturation		Average Percent Water Saturation		Average Oil Content Bbl./A. Ft.
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6		14.5		32.8		59.7
693.3 - 702.6		9.3		15.4		38.4		41.9
693.3 - 699.0		5.7		16.0		42.0		30.6
699.0 - 702.6		3.6						

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Minckley B, Sec. 3 Well No. W-12

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	693.5	17.8	32	442	0	0	32	45	442	0	Imp.	-
2	694.5	16.8	52	678	0	0	52	29	678	0	Imp.	-
3	695.5	9.9	42	323	0	0	42	50	323	0	Imp.	-
4	696.5	12.3	55	525	0	0	55	18	525	0	Imp.	-
5	697.5	19.2	45	670	0	0	45	17	670	0	Imp.	-
6	698.5	19.2	29	432	0	0	29	33	432	0	Imp.	-
7	699.6	13.6	32	338	0	0	32	56	338	0	Imp.	-
8	700.6	16.1	25	312	0	0	25	70	312	0	Imp.	-
9	701.5	13.6	36	380	0	0	36	58	380	0	Imp.	-
10	702.5	14.9	41	474	0	0	41	54	474	0	Imp.	-

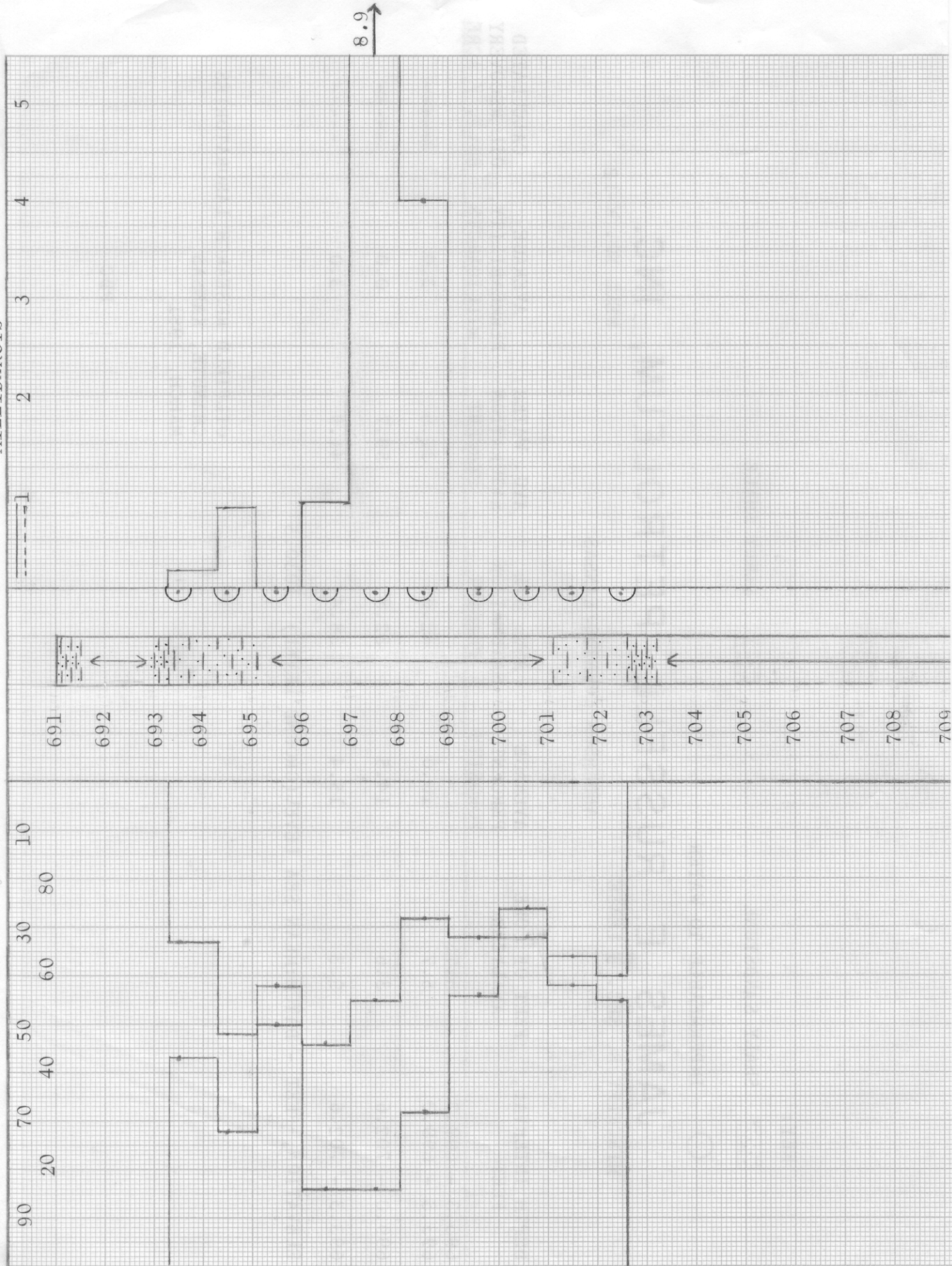
Notes: cc—cubic centimeter.

*—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 —————>

-----> EFFECTIVE PERMEABILITY TO WATER, IN
MILLIDARCS



710

711

KEY:

SHALY SANDSTONE

SANDY SHALE

○ IMPERMEABLE TO WATER

JAMES E. RUSSELL PETROLEUM, INC.

MINCKLEY B, SEC. 3 LEASE

WELL NO. W-12

ANDERSON COUNTY, KANSAS

DEPTH INTERVAL,
FEETFEET OF CORE
ANALYZEDAVERAGE
PERCENT
POROSITYAVG. OIL
SATURATION
PERCENTAVG. WATER
SATURATION
PERCENTAVERAGE
PERMEABILITY,
MILLIDARCSCALCULATED
OIL RECOVERY
BBLs. / ACRE

693.3 - 699.0

5.7

16.0

42.0

30.6

3.0

699.0 - 702.6

3.6

14.5

32.8

59.7

0.0

693.3 - 702.6

9.3

15.4

38.4

41.9

3.0

ELEVATION, FEET - DATUM: MEAN SEA LEVEL (GROUND LEVEL) 1030.5

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MARCH, 1981

PDC