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

January 26, 1981

Jackson Brothers
514 North Main
Eureka, Kansas 67045

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Pixlee "B" Lease, Well No. 27, located in Greenwood County, Kansas and submitted to our laboratory on December 8, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

5 c to Eureka, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Jackson Brothers Lease Pixlee "B" Well No. 27

Location -

Section 8 Twp. 22S Rge. 10E County Greenwood State Kansas

Elevation, Feet	-
Name of Sand	Bartlesville
Top of Core	2284.0
Bottom of Core	2330.0
Top of Sand	2284.0
Bottom of Sand	2330.0
Total Feet of Permeable Sand	37.4
Total Feet of Floodable Sand	14.6

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	11.9	11.9
5 - 10	4.1	16.0
10 - 20	7.5	23.5
20 - 50	6.3	29.8
50 & Above	7.6	37.4

Average Permeability Millidarcys	24.7
Average Percent Porosity	15.5
Average Percent Oil Saturation	28.8
Average Percent Water Saturation	56.6
Average Oil Content, Bbls./A. Ft.	357.
Total Oil Content, Bbls./Acre	15,707.
Average Percent Oil Recovery by Laboratory Flooding Tests	5.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	71.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,039.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section

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

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
2284.0 - 2284.9	Light brown shaly sandstone.
2284.9 - 2286.9	Grayish light brown conglomeratic shaly sandstone.
2286.9 - 2295.1	Light brown shaly sandstone.
2295.1 - 2296.7	Light brown sandstone.
2296.7 - 2298.8	Light brown and gray laminated sandstone and shale.
2298.8 - 2301.7	Light brown shaly sandstone.
2301.7 - 2304.3	Light brown slightly calcareous sandstone.
2304.3 - 2305.0	Light brown shaly sandstone.
2305.0 - 2310.6	Light brown slightly calcareous sandstone.
2310.6 - 2314.0	Light brown slightly calcareous shaly sandstone.
2314.0 - 2316.2	Light brown slightly calcareous sandstone.
2316.2 - 2316.8	Light brown slightly calcareous shaly sandstone.
2316.8 - 2317.7	Light brown slightly calcareous sandstone.
2317.7 - 2318.9	Hard light brown calcareous shaly sandstone.
2318.9 - 2325.6	Light brown sandstone.
2325.6 - 2328.0	Light brown and gray laminated sandstone and shale.
2328.0 - 2330.0	Light brown sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 1,039 barrels of oil per acre was obtained from 14.6 feet of sand. The weighted average percent oil saturation was reduced from 35.1 to 29.8, or represents an average recovery of 5.3 percent. The weighted average effective permeability of the samples is 4.08 millidarcys, while the average initial fluid production pressure is 21.1 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 44 samples tested, 14 produced water and oil, and 12 samples produced water only. This indicates that approximabely 32 percent of the sand represented by these samples is floodable pay sand.

CALCULATED RECOVERY

It would appear from a study of the core data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 2,020 barrels of oil per acre. This is an average recovery of 138 barrels per acre foot from 14.6 feet of floodable sand analyzed in this core.

These recovery values were calculated using the following data and assumptions:

Original formation volume factor, estimated	1.18
Reservoir water saturation, percent, estimated	40.0
Average porosity, percent	16.9
Oil saturation after flooding, percent	29.8
Performance factor, percent, estimated	50.0
Net floodable sand, feet	14.6

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Jackson Brothers Lease Pixlee "B" Well No. 27

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	2284.6	6.1	15	80	95	71	1.1	0.9	0.9	64	0.99
2	2287.5	7.4	18	76	94	103	0.90	1.0	1.9	103	0.90
3	2288.4	18.4	34	44	78	485	12.	1.0	2.9	485	12.00
4	2289.5	13.3	43	55	98	444	Imp.	1.0	3.9	444	0.00
5	2290.5	9.7	26	70	96	196	Imp.	1.0	4.9	196	0.00
6	2291.4	14.1	13	65	78	142	0.17	1.0	5.9	142	0.17
7	2292.5	14.3	39	48	87	433	Imp.	1.0	6.9	433	0.00
8	2293.5	10.4	7	85	92	57	3.2	1.0	7.9	57	3.20
9	2294.4	14.8	25	48	73	287	Imp.	1.2	9.1	344	0.00
10	2295.5	19.2	30	48	78	447	17.	1.0	10.1	447	17.00
11	2296.5	15.2	27	61	88	318	27.	0.6	10.7	191	16.20
12	2297.5	19.6	29	46	75	441	Imp.	1.0	11.7	441	0.00
13	2298.5	16.9	25	50	75	328	1.6	1.1	12.8	361	1.76
14	2299.5	5.8	20	69	89	90	0.33	1.0	13.8	90	0.33
15	2300.5	15.9	26	71	97	321	4.6	1.0	14.8	321	4.60
16	2301.5	19.0	56	7	63	826	8.5	0.9	15.7	743	7.65
17	2302.5	14.0	30	62	92	326	47.	1.0	16.7	326	47.00
18	2303.6	15.8	30	61	91	368	52.	1.6	18.3	589	83.20
19	2304.7	12.2	20	60	80	189	0.56	0.7	19.0	132	0.39
20	2305.4	25.7	19	47	66	379	52.	1.0	20.0	379	52.00
21	2306.5	17.5	25	73	98	339	30.	1.0	21.0	339	30.00
22	2307.6	18.8	35	59	94	510	9.9	1.0	22.0	510	9.90
23	2308.5	17.6	32	60	92	437	52.	1.0	23.0	437	52.00
24	2309.6	17.8	16	82	98	221	66.	1.0	24.0	221	66.00
25	2310.5	19.7	37	57	94	565	19.	0.6	24.6	339	11.40
26	2311.5	17.6	27	62	89	369	3.0	1.0	25.6	369	3.00
27	2312.5	19.0	49	40	89	722	2.9	1.0	26.6	722	2.90
28	2313.5	15.8	35	58	93	429	7.5	1.6	28.2	686	12.00
29	2314.5	19.4	38	42	80	572	18.	1.0	29.2	572	18.00
30	2315.5	19.1	33	46	79	489	16.	1.0	30.2	489	16.00

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Jackson Brothers Lease Pixlee "B" Well No. 27

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.		
31	2316.4	18.8	28	47	75	408	5.0	0.6	30.8	245	3.00
32	2317.5	19.8	30	51	81	461	15.	0.9	31.7	415	13.50
33	2318.4	13.7	32	56	88	340	1.1	1.2	32.9	408	1.32
34	2319.5	13.8	13	27	40	139	181.	1.0	33.9	139	181.00
35	2320.6	14.5	41	57	98	461	10.	1.0	34.9	461	10.00
36	2321.5	15.5	32	44	76	385	23.	1.0	35.9	385	23.00
37	2322.5	15.5	39	52	91	469	59.	1.0	36.9	469	59.00
38	2323.6	17.0	35	46	81	462	43.	1.0	37.9	462	43.00
39	2324.5	14.9	34	53	87	393	21.	0.7	38.6	275	14.70
40	2325.5	10.9	22	75	97	186	11.	1.0	39.6	186	11.00
41	2326.5	14.8	17	69	86	195	Imp.	1.4	41.0	273	0.00
42	2327.3	7.7	24	68	92	143	0.24	1.0	42.0	143	0.24
43	2328.4	17.1	25	56	81	332	21.	1.0	43.0	332	21.00
44	2329.4	17.9	39	46	85	542	76.	1.0	44.0	542	76.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Jackson Brothers Lease Pixlee "B" Well No. 27

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
2284.0 - 2201.7	10.5	6.2	64.80
2201.7 - 2330.0	26.9	32.0	860.55
2284.0 - 2330.0	37.4	24.7	925.35

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
2284.0 - 2201.7	15.7	13.8	26.9	57.6	310	4,862
2201.7 - 2330.0	28.3	16.4	29.8	56.0	383	10,845
2284.0 - 2330.0	44.0	15.5	28.8	56.6	357	15,707

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Jackson Brothers Lease Pixlee "B" Well No. 27

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	2284.6	6.2	15	72	0	0	15	80	72	0	Imp.	-
2	2287.5	7.6	17	100	0	0	17	77	100	6	0.20	40
3	2288.4	18.5	34	488	0	0	34	54	488	21	0.56	40
4	2289.5	13.0	44	444	0	0	44	54	444	0	Imp.	-
5	2290.5	9.8	26	198	0	0	26	70	198	0	Imp.	-
6	2291.4	14.6	12	136	0	0	12	68	136	0	Imp.	-
7	2292.5	14.1	38	416	0	0	38	50	416	0	Imp.	-
8	2293.5	10.3	7	56	0	0	7	85	56	0	Imp.	-
9	2294.4	15.1	24	281	0	0	24	50	281	0	Imp.	-
10	2295.5	19.3	30	449	0	0	30	60	449	33	0.60	35
11	2296.5	15.4	27	323	0	0	27	63	323	55	1.20	35
12	2297.5	19.1	30	445	0	0	30	47	445	0	Imp.	-
13	2298.5	17.0	25	330	0	0	25	73	330	23	0.25	20
14	2299.5	5.9	20	92	0	0	20	74	92	6	0.20	45
15	2300.5	16.1	26	325	0	0	26	71	325	0	Imp.	-
16	2301.5	19.5	55	832	0	0	55	10	832	0	Imp.	-
17	2302.5	14.2	30	330	2	22	28	70	308	116	2.00	25
18	2303.6	15.9	30	370	2	25	28	69	345	32	0.45	20
19	2304.7	12.5	19	184	0	0	19	72	184	34	0.20	30
20	2305.4	25.2	20	391	0	0	20	73	391	279	11.44	15
21	2306.5	17.6	25	341	0	0	25	73	341	45	1.00	25
22	2307.6	18.9	35	513	4	59	31	64	454	356	4.58	15
23	2308.5	17.8	32	442	2	28	30	63	414	249	5.20	20
24	2309.6	17.8	16	221	0	0	16	82	221	61	1.10	30
25	2310.5	19.5	37	560	5	76	32	63	484	6	0.10	25
26	2311.5	17.5	27	367	0	0	27	66	367	12	0.30	40
27	2312.5	19.0	49	722	15	221	34	57	501	8	0.20	35
28	2313.5	15.7	35	426	5	61	30	67	365	130	2.99	10
29	2314.5	19.2	38	566	7	104	31	64	462	58	1.30	25

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 Jackson Brothers Lease Pixlee "B" Well No. 27

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.			
30	2315.5	19.0	33	486	0	0	33	47	486	0	Imp.	-
31	2316.4	19.2	27	402	0	0	27	50	402	0	Imp.	-
32	2317.5	19.7	30	458	2	31	28	68	427	355	6.60	15
33	2318.4	13.6	32	338	3	32	29	67	306	16	0.30	40
34	2319.5	14.3	12	133	0	0	12	37	133	0	Imp.	-
35	2320.6	15.0	40	465	0	0	40	58	465	0	Imp.	-
36	2321.5	15.8	31	380	0	0	31	50	380	0	Imp.	-
37	2322.5	15.6	39	472	9	109	30	65	363	406	17.49	10
38	2323.6	17.1	35	464	6	80	29	55	384	41	0.70	20
39	2324.5	15.1	34	398	5	59	29	63	339	135	3.60	20
40	2325.5	11.0	22	188	0	0	22	75	188	0	Imp.	-
41	2326.5	15.0	17	198	0	0	17	70	198	0	Imp.	-
42	2327.3	7.9	23	141	0	0	23	70	141	0	Imp.	-
43	2328.4	17.1	25	332	0	0	25	69	332	242	16.24	10
44	2329.4	17.9	39	542	9	125	30	68	417	204	13.74	15

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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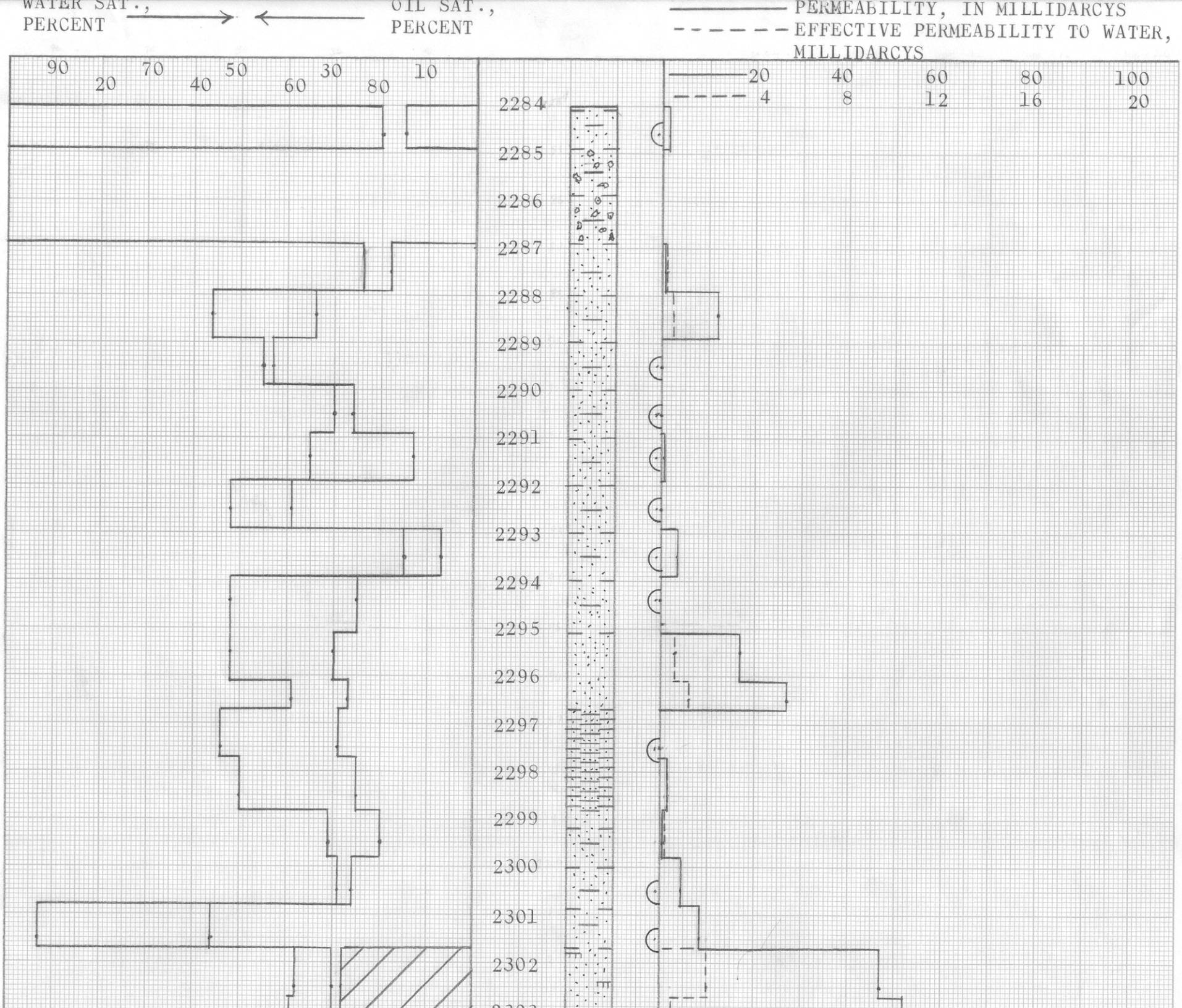
SUMMARY OF LABORATORY FLOODING TESTS

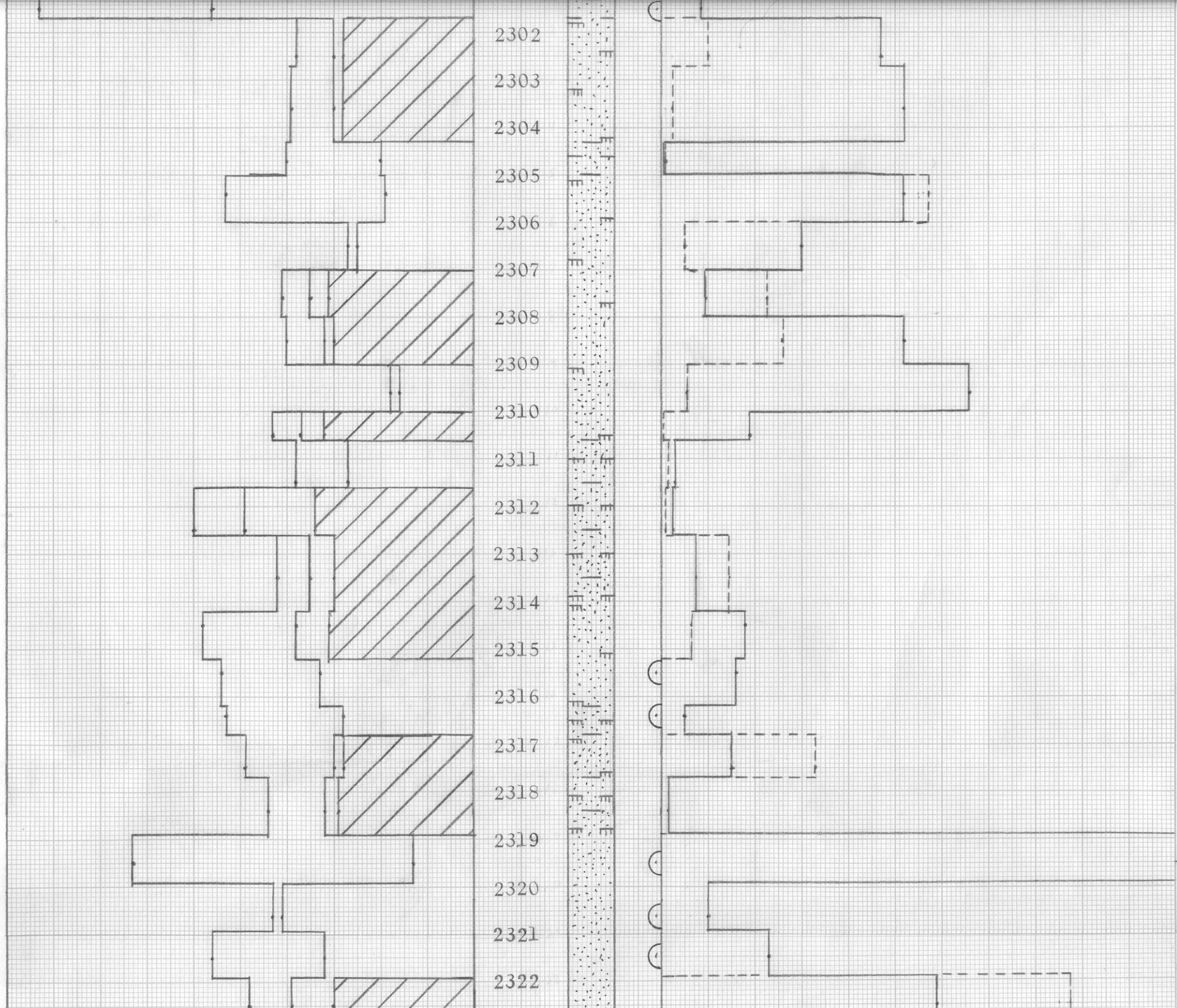
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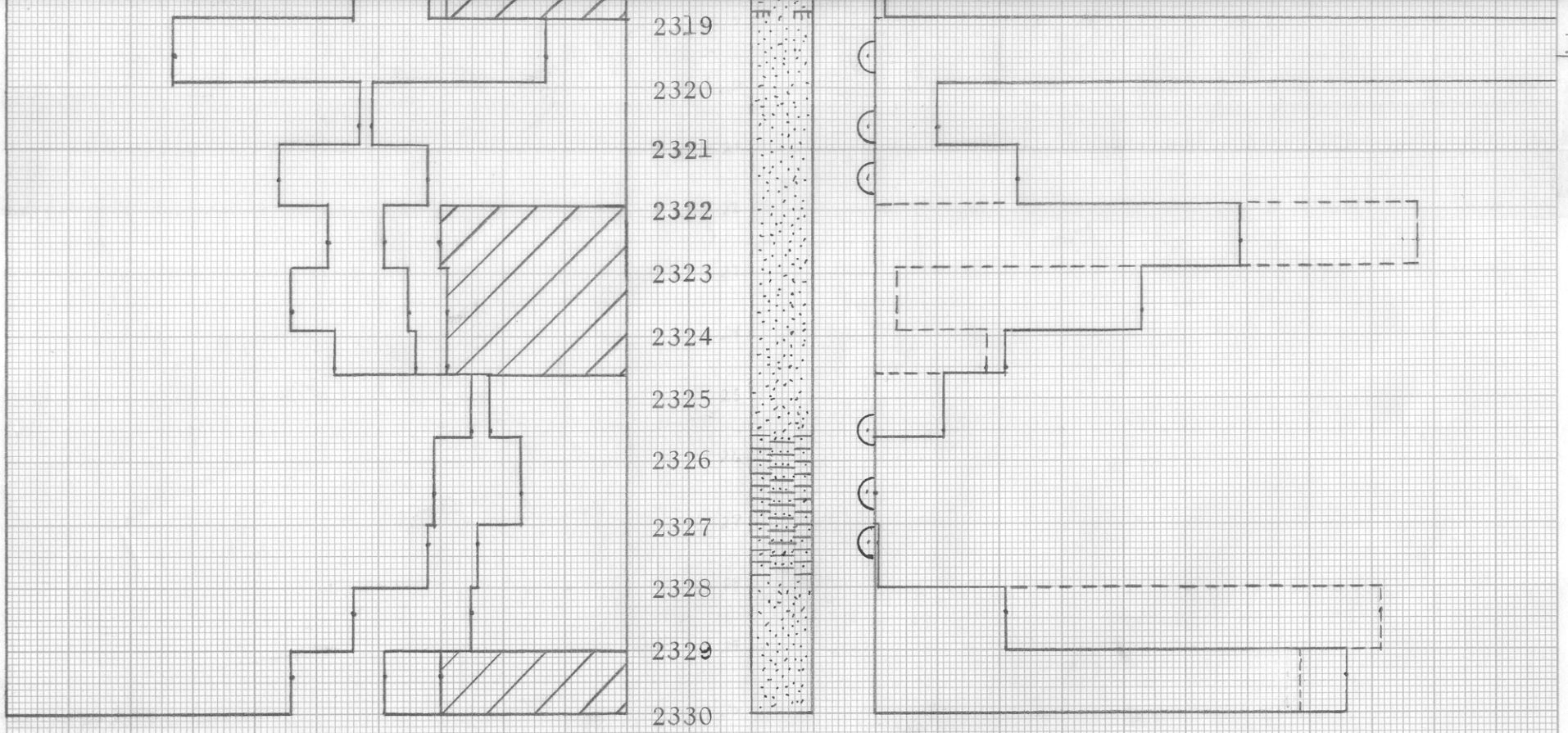
Company Jackson Brothers Lease Pixlee "B" Well No. 27

Depth Interval, Feet	2201.7 - 2330.0
Feet of Core Analyzed	14.6
Average Percent Porosity	16.9
Average Percent Original Oil Saturation	35.1
Average Percent Oil Recovery	5.3
Average Percent Residual Oil Saturation	29.8
Average Percent Residual Water Saturation	64.9
Average Percent Total Residual Fluid Saturation	94.7
Average Original Oil Content, Bbls./A. Ft.	463.
Average Oil Recovery, Bbls./A. Ft.	71.
Average Residual Oil Content, Bbls./A. Ft.	392.
Total Original Oil Content, Bbls./Acre	6,756.
Total Oil Recovery, Bbls./Acre	1,039.
Total Residual Oil Content, Bbls./Acre	5,717.
Average Effective Permeability, Millidarcys	4.08
Average Initial Fluid Production Pressure, p.s.i.	21.1

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


WATER SAT., PERCENT
OIL SAT., PERCENT
PERMEABILITY, IN MILLIDARCYS
EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS
90 70 50 30 10
20 40 60 80
20 40 60 80 100
4 8 12 16 20
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
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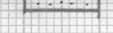
KEY:

- SANDSTONE
- SHALY SANDSTONE
- CALCAREOUS SANDSTONE
- CALCAREOUS SHALY SANDSTONE
- LAMINATED SANDSTONE AND SHALE
- CONGLOMERATIC SHALY SANDSTONE
- FLOODPOT RESIDUAL OIL SATURATION
- IMPERMEABLE TO WATER

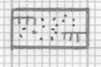
JACKSON BROTHERS

PIXLEE 'B' LEASE

WELL NO. 27


SANDSTONE


SHALY SANDSTONE


CALCAREOUS SANDSTONE


CALCAREOUS SHALY SANDSTONE


LAMINATED SANDSTONE AND SHALE


CONGLOMERATIC SHALY SANDSTONE


FLOODPOT RESIDUAL OIL SATURATION


IMPERMEABLE TO WATER

JACKSON BROTHERS

PIXLEE 'B' LEASE WELL NO. 27

GREENWOOD COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. / ACRE
2284.0 - 2201.7	15.7	13.8	26.9	57.6	6.2	
2201.7 - 2330.0	28.3	16.4	29.8	56.0	32.0	
2284.0 - 2330.0	44.0	15.5	28.8	56.6	24.7	2020

(PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
JANUARY, 1981

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