OILFIELD RESEARCH LABORATORIES

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

September 8, 1982

Glen J Oil Company
P. O. Box 586
Independence, Kansas 67301

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Thompson Lease, Well No. 2, located in Montgomery County, Kansas and submitted to our laboratory on August 26, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/rmc

5 c to Independence, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Glen J Oil Company Lease Thompson Well No. 2

Location

Section 1 Twp. 34S Rge. 13E County Montgomery State Kansas

Elevation, Feet	
Name of Sand	Redd
Top of Core	532.5
Bottom of Core	545.0
Top of Sand	532.5
Bottom of Sand (Tested)	544.6
Total Feet of Permeable Sand	12.1
Total Feet of Floodable Sand	11.4

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
8 - 26	1.3	1.3
50 - 100	4.8	6.1
105 - 200	6.0	12.1

Average Permeability Millidarcys	102.8
Average Percent Porosity	20.4
Average Percent Oil Saturation	31.4
Average Percent Water Saturation	42.5
Average Oil Content, Bbls./A. Ft.	502.
Total Oil Content, Bbls./Acre	6,074.
Average Percent Oil Recovery by Laboratory Flooding Tests	7.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	119.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,361.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section

The core was sampled and the samples sealed in plastic bags by a representative of the client. Fresh water mud was used as a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
532.5 - 533.1	Brown sandstone.
533.1 - 533.8	Grayish brown slightly shaly sandstone.
533.8 - 544.6	Brown sandstone.
544.6 - 545.0	Grayish brown very shaly sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 1,361 barrels of oil per acre was obtained from 11.4 feet of sand. The weighted average percent oil saturation was reduced from 32.3 to 25.0, or represents an average recovery of 7.3 percent. The weighted average effective permeability of the samples is 5.36 millidarcys, while the average initial fluid production pressure is 14.6 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 13 samples tested, 12 produced water and oil. This indicates that approximately 92 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 4,150 barrels of oil per acre. This is an average recovery of 364 barrels per acre foot from 11.4 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.06
Reservoir water saturation, percent, estimated	30.0
Average porosity, percent	20.8
Oil saturation after flooding, percent	25.0
Performance factor, percent, estimated	55.0
Net floodable sand, feet	11.4

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Glen J Oil Company Lease Thompson Well No. 2

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	532.7	17.2	33	51	84	440	25.	0.6	0.6	264	15.00
2	533.5	16.9	17	66	83	223	8.2	0.7	1.3	156	5.74
3	534.6	19.4	29	37	66	437	118.	1.0	2.3	437	118.00
4	535.5	19.6	31	33	64	471	163.	1.0	3.3	471	163.00
5	536.5	18.8	28	55	83	408	54.	1.0	4.3	408	54.00
6	537.6	18.7	40	38	78	580	137.	1.0	5.3	580	137.00
7	538.5	20.2	36	35	71	564	199.	1.0	6.3	564	199.00
8	539.5	23.6	42	32	74	769	163.	1.0	7.3	769	163.00
9	540.6	23.2	35	37	72	630	108.	1.0	8.3	630	108.00
10	541.5	22.6	31	37	68	544	99.	1.0	9.3	544	99.00
11	542.5	20.6	27	45	72	432	54.	0.8	10.1	346	43.20
12	543.5	22.3	29	42	71	502	87.	1.0	11.1	502	87.00
13	544.5	20.0	26	55	81	403	52.	1.0	12.1	403	52.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Glen J Oil Company Lease Thompson Well No. 2

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
532.5 - 544.6	12.1	102.8	1,243.94

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
532.5 - 544.6	12.1	20.4	31.4	42.5	502	6,074

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Glen J Oil Company Lease Thompson Well No. 2

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	532.7	17.4	33	445	7	94	26	61	351	56	1.00	20
2	533.5	16.3	18	228	0	0	18	65	228	0	Imp.	-
3	534.6	19.5	29	439	6	91	23	63	348	320	6.30	15
4	535.5	19.7	31	474	7	107	24	55	367	232	3.80	10
5	536.5	18.9	28	411	4	59	24	64	352	456	8.60	15
6	537.6	18.8	40	583	11	160	29	55	423	300	5.80	15
7	538.5	20.2	36	564	10	157	26	49	407	210	2.60	10
8	539.5	23.7	42	772	13	239	29	57	533	364	6.40	15
9	540.6	23.4	35	635	11	200	24	62	435	254	3.90	15
10	541.5	22.7	31	546	6	106	25	58	440	408	10.80	10
11	542.5	20.8	27	436	4	65	23	63	371	346	6.20	15
12	543.5	22.5	29	506	5	87	24	63	419	274	5.00	15
13	544.5	20.3	26	409	3	47	23	62	362	124	2.30	20

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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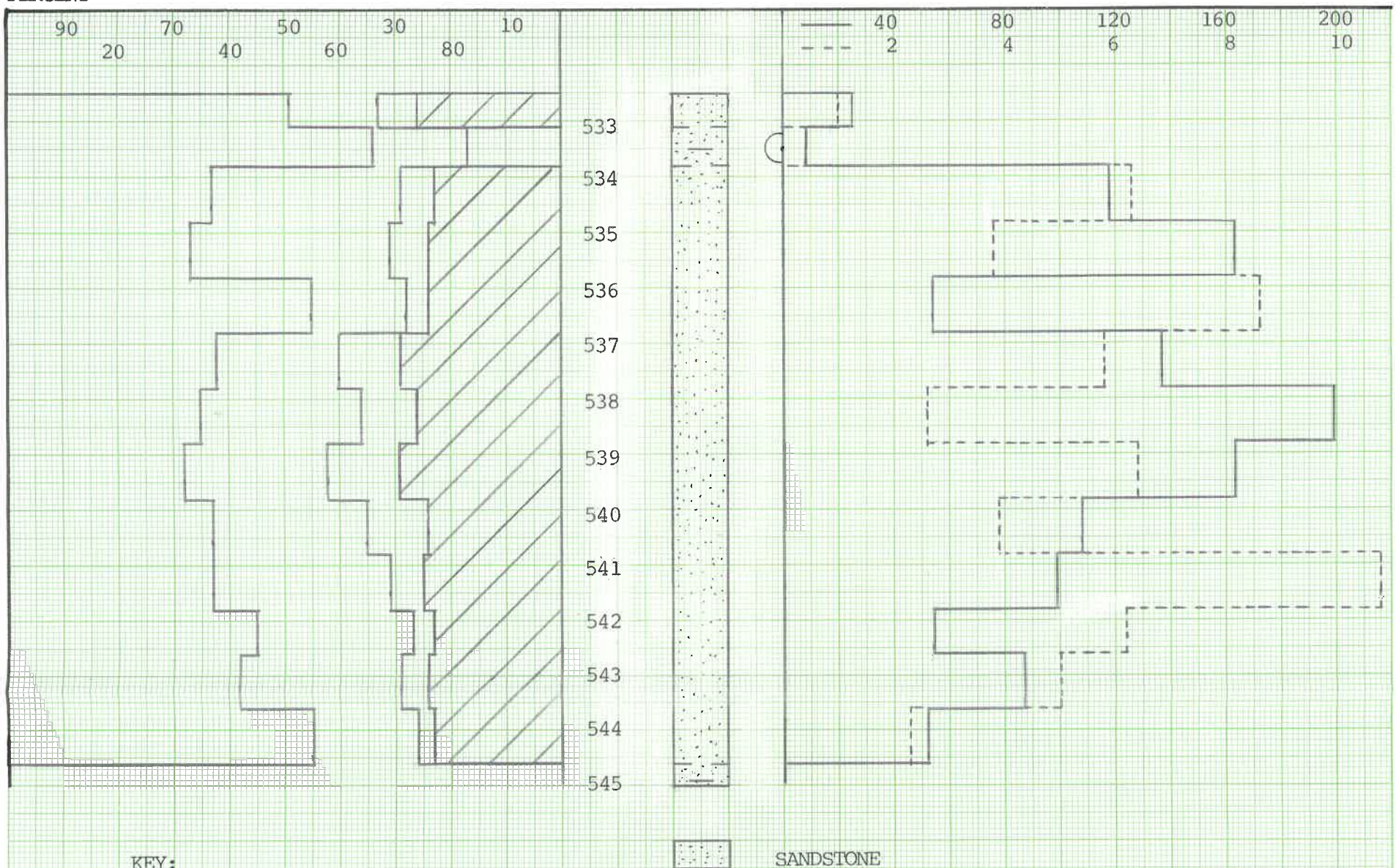
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Glen J Oil Company Lease Thompson Well No. 2

Depth Interval, Feet	532.5 - 544.6
Feet of Core Analyzed	11.4
Average Percent Porosity	20.8
Average Percent Original Oil Saturation	32.3
Average Percent Oil Recovery	7.3
Average Percent Residual Oil Saturation	25.0
Average Percent Residual Water Saturation	59.2
Average Percent Total Residual Fluid Saturation	84.2
Average Original Oil Content, Bbls./A. Ft.	522.
Average Oil Recovery, Bbls./A. Ft.	119.
Average Residual Oil Content, Bbls./A. Ft.	403.
Total Original Oil Content, Bbls./Acre	5,955.
Total Oil Recovery, Bbls./Acre	1,361.
Total Residual Oil Content, Bbls./Acre	4,594.
Average Effective Permeability, Millidarcys	5.36
Average Initial Fluid Production Pressure, p.s.i.	14.6

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



KEY:

SANDSTONE

SHALY SANDSTONE

IMPERMEABLE TO WATER

FLOODPOT RESIDUAL OIL SATURATION

GLENN J OIL COMPANY

THOMPSON LEASE WELL NO. 2

MONTGOMERY 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
532.5 - 544.6	12.1	20.4	31.4	42.5	102.8	4150 (PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
SEPTEMBER, 1982 PDC