

OILFIELD RESEARCH LABORATORIES

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

March 13, 1981

Global Oil, Inc.
166 Harbor Drive # 2
Key Biscayne, Florida 33149

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Hines Lease, Well No. 6, located in Miami 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

4 c to Key Biscayne, Florida
1 c to Rantoul, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Global Oil, Inc. Lease Hines Well No. 6

Location _____

Section 29 Twp. 21S Rge. 22E County Miami State Kansas
17

Elevation, Feet -

Name of Sand Peru

Top of Core 439.0

Bottom of Core 450.6

Top of Sand (Tested) 439.2

Bottom of Sand 449.2

Total Feet of Permeable Sand 9.5

Total Feet of Floodable Sand 7.8

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
30 - 40	2.9	2.9
60 - 95	3.8	6.7
110 & Above	2.8	9.5

Average Permeability Millidarcys 77.5

Average Percent Porosity 19.3

Average Percent Oil Saturation 54.5

Average Percent Water Saturation 28.4

Average Oil Content, Bbls./A. Ft. 807.

Total Oil Content, Bbls./Acre 7,668.

Average Percent Oil Recovery by Laboratory Flooding Tests 14.1

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. 211.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre 1,649.

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 a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
439.0 - 439.2	Light brown shaly sandstone.
439.2 - 444.0	Brown slightly calcareous sandstone.
444.0 - 444.8	Light brown and gray laminated slightly calcareous sandstone and shale.
444.8 - 445.3	Hard gray limestone.
445.3 - 449.2	Brown slightly calcareous sandstone.
449.2 - 450.6	Gray shaly sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 1,649 barrels of oil per acre was obtained from 7.8 feet of sand. The weighted average percent oil saturation was reduced from 56.7 to 42.6, or represents an average recovery of 14.1 percent. The weighted average effective permeability of the samples is 5.15 millidarcys, while the average initial fluid production pressure is 23.8 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 10 samples tested, 8 produced water and oil, and 1 sample produced water only. This indicates that approximately 80 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 2,180 barrels of oil per acre. This is an average recovery of 280 barrels per acre foot from 7.8 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.03
Reservoir water saturation, percent, estimated	15.0
Average porosity, percent	18.8
Oil saturation after flooding, percent	42.6
Performance factor, percent, estimated	50.0
Net floodable sand, feet	7.8

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Global Oil, Inc. Lease Hines Well No. 6

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	439.5	26.0	41	37	78	827	118.	0.8	0.8	662	94.40
2	440.5	23.6	56	24	80	1025	145.	1.0	1.8	1025	145.00
3	441.6	20.3	62	19	81	976	90.	1.0	2.8	976	90.00
4	442.5	19.0	60	18	78	884	77.	1.0	3.8	884	77.00
5	443.5	22.9	52	34	86	924	110.	1.0	4.8	924	110.00
6	444.5	19.0	47	47	94	693	60.	0.8	5.6	554	48.00
7	445.6	12.7	61	22	83	601	72.	1.0	6.6	601	72.00
8	446.5	19.4	56	29	85	843	35.	1.0	7.6	843	35.00
9	447.5	14.0	57	21	78	619	37.	1.0	8.6	619	37.00
10	448.6	17.3	48	40	68	644	31.	0.9	9.5	580	27.90

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Lease	Hines	Well No.		6
Depth Interval, Feet	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbl./Acre
439.2 - 449.2	9.5	19.3	54.5	807	7,668
439.2 - 449.2	9.5	19.3	28.4	807	7,668

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Well No. 6

Lease Hines

Company Global Oil, Inc.

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc*	Effective Permeability Mhdarcy**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water			
1	439.5	25.9	41	824	0	0	41	56	74	1.35	25
2	440.5	23.6	56	1025	17	311	39	59	298	9.00	15
3	441.6	20.2	62	973	22	345	40	51	266	8.55	20
4	442.5	18.8	60	875	13	190	47	50	230	5.55	25
5	443.5	22.7	52	916	13	229	39	52	74	1.80	35
6	444.5	19.2	47	700	12	179	35	60	166	3.75	20
7	445.6	12.6	61	596	10	98	51	46	86	2.25	30
8	446.5	19.6	56	852	14	213	42	46	56	1.20	25
9	447.5	14.1	57	624	11	120	46	51	268	7.50	20
10	448.6	16.9	49	642	0	0	49	42	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.

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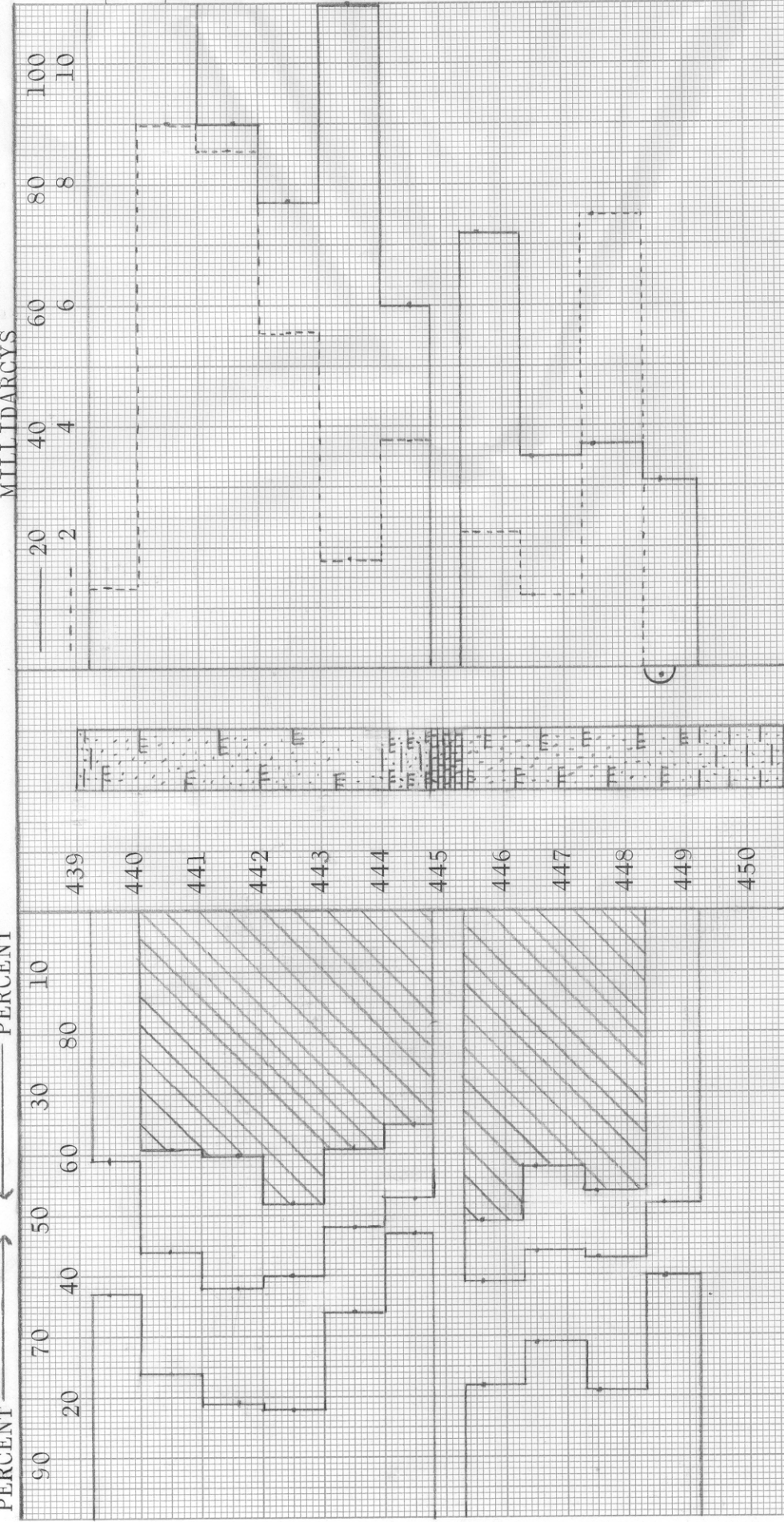
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company	Global Oil, Inc.	Lease	Hines	Well No.	6
Depth Interval, Feet	439.2 - 449.2				
Feet of Core Analyzed	7.8				
Average Percent Porosity	18.8				
Average Percent Original Oil Saturation	56.7				
Average Percent Oil Recovery	14.1				
Average Percent Residual Oil Saturation	42.6				
Average Percent Residual Water Saturation	51.7				
Average Percent Total Residual Fluid Saturation	94.3				
Average Original Oil Content, Bbls./A. Ft.	823.				
Average Oil Recovery, Bbls./A. Ft.	211.				
Average Residual Oil Content, Bbls./A. Ft.	612.				
Total Original Oil Content, Bbls./Acre	6,420.				
Total Oil Recovery, Bbls./Acre	1,649.				
Total Residual Oil Content, Bbls./Acre	4,771.				
Average Effective Permeability, Millidarcys	5.15				
Average Initial Fluid Production Pressure, p.s.i.	23.8				

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

WATER SAT., PERCENT → ← OIL SAT., PERCENT



KEY:

- SHALY SANDSTONE
- CALCAREOUS SANDSTONE
- FLOODPOT RESIDUAL OIL SATURATION ○

- LAMINATED CALCAREOUS SANDSTONE AND SHALE
- LIMESTONE
- IMPERMEABLE TO WATER

GLOBAL OIL, INCORPORATED

HINES LEASE
MIAMI COUNTY, KANSAS
WELL NO. 6

118

145

LIMESTONE

SANDSTONE

FLOODPOT RESIDUAL OIL SATURATION IMPERMEABLE TO WATER

GLOBAL OIL, INCORPORATED

WELL NO. 6

HINES LEASE

MIAMI 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
439.2 - 449.2	9.5	19.3	54.5	28.4	77.5	2,180 (PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MARCH, 1981