



OILFIELD RESEARCH LABORATORIES

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

May 9, 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 Alexander Lease, Well No. Global # 1, located in Leavenworth County, Kansas and submitted to our laboratory on April 24, 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 Alexander Well No. Global # 1

Location _____

Section 18 Twp. 14S Rgc. 20E County Leavenworth State Kansas

Elevation, Feet

Name of Sand

Top of Core 1308.0

Bottom of Core 1320.5

Top of Sand 1308.0

Bottom of Sand 1316.0

Total Feet of Permeable Sand 6.1

Total Feet of Floodable Sand 3.9

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 500	3.8	3.8
500 - 1000	1.0	4.8
1000 - 200	1.3	6.1

Average Permeability Millidarcys 565.5

Average Percent Porosity 17.3

Average Percent Oil Saturation 50.7

Average Percent Water Saturation 9.1

Average Oil Content, Bbls./A. Ft. 764.

Total Oil Content, Bbls./Acre 6,492.

Average Percent Oil Recovery by Laboratory Flooding Tests 15.3

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. 283.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre 1,105.

Total Calculated Oil Recovery, Bbls./Acre See "Calculated Recovery"
Section

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The core was sampled by a representative of Oilfield Research Laboratories.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
1308.0 - 1311.6	Dark brown calcareous carbonaceous conglomeratic sandstone.
1311.6 - 1312.4	Dark brown calcareous carbonaceous sandstone.
1312.4 - 1313.6	Gray shale.
1313.6 - 1314.6	Dark brown calcareous slightly carbonaceous sandstone.
1314.6 - 1316.0	Grayish light brown calcareous sandstone.
1316.0 - 1318.0	No Core.
1318.0 - 1319.7	Gray vuggy limestone.
1319.7 - 1320.5	Gray shale.

LABORATORY FLOODING TESTS

The upper portion of the sand in this core responded to laboratory flooding tests, as a total recovery of 1,105 barrels of oil per acre was obtained from 3.9 feet of sand. The weighted average percent oil saturation was reduced from 63.0 to 47.7, or represents an average recovery of 15.3 percent. The weighted average effective permeability of the samples is 9.96 millidarcys, while the average initial fluid production pressure is 30.0 pounds per square inch (See Table V).

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By observing the data given in Table IV, you will note that of the 10 samples tested, 5 produced water and oil, and 2 samples produced water only. This indicates that approximately 50 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 1,280 barrels of oil per acre. This is an average recovery of 327 barrels per acre foot from 3.9 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.09
Reservoir water saturation, percent, estimated	10.0
Average porosity, percent	24.2
Oil saturation after flooding, percent	47.7
Performance factor, percent, estimated	50.0
Net floodable sand, feet	3.9

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Global Oil, Inc. Lease Alexander Well No. Global # 1

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	1308.6	22.1	59	7	1012	382.	1.0	1.0	1012	382.00
2	1309.5	25.0	79	10	1532	463.	1.0	2.0	1532	463.00
3	1310.5	23.3	61	21	1103	509.	1.0	3.0	1103	509.00
4	1311.5	22.8	64	15	1132	355.	0.6	3.6	679	213.00
5	1312.3	27.9	46	12	996	1095.	0.8	4.4	797	876.00
6	1313.7	13.0	65	2	656	93.	0.5	4.9	328	46.50
7	1314.5	20.2	61	1	957	1916.	0.5	5.4	479	958.00
8	1315.6	8.6	33	3	220	Imp.	1.4	6.8	308	0.00
9	1318.5	5.2	26	13	105	Imp.	1.0	7.8	105	0.00
10	1319.5	9.8	28	3	213	2.7	0.7	8.5	149	1.89

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Global Oil, Inc.	Lease	Alexander	Well No.	Global # 1
	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	
	1308.0 - 1314.6	5.4	638.4	3447.50	
	1314.6 - 1319.7	0.7	2.7	1.89	
	1308.0 - 1319.7	6.1	565.5	3449.39	

	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
	1308.0 - 1314.6	5.4	22.8	62.4	10.8	1,098	5,930
	1314.6 - 1319.7	3.1	24.1	30.3	6.2	181	562
	1308.0 - 1319.7	8.5	17.3	50.7	9.1	764	6,492

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Global Oil, Inc. Lease Alexander Well No. Global # 1

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			
1	1308.6	22.2	59	1016	0	0	59	27	240	10.85	20
2	1309.5	25.0	79	1532	27	524	52	46	246	13.87	25
3	1310.5	23.2	61	1098	13	234	48	40	316	7.20	30
4	1311.5	22.7	64	1127	19	335	45	39	28	0.60	50
5	1312.3	28.1	46	1003	3	65	43	37	198	11.24	25
6	1313.7	13.3	64	660	0	0	64	25	368	17.99	20
7	1314.5	20.2	61	956	12	188	49	36	332	16.86	20
8	1315.6	8.6	33	220	0	0	33	10	0	Imp.	-
9	1318.5	5.1	27	107	0	0	27	15	0	Imp.	-
10	1319.5	10.1	27	212	0	0	27	6	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	Alexander	Well No.	Global # 1
Depth Interval, Feet	1308.0 - 1314.6				
Feet of Core Analyzed	3.9				
Average Percent Porosity	24.2				
Average Percent Original Oil Saturation	63.0				
Average Percent Oil Recovery	15.3				
Average Percent Residual Oil Saturation	47.7				
Average Percent Residual Water Saturation	40.3				
Average Percent Total Residual Fluid Saturation	88.0				
Average Original Oil Content, Bbls./A. Ft.	1,176.				
Average Oil Recovery, Bbls./A. Ft.	283.				
Average Residual Oil Content, Bbls./A. Ft.	893.				
Total Original Oil Content, Bbls./Acre	4,587.				
Total Oil Recovery, Bbls./Acre	1,105.				
Total Residual Oil Content, Bbls./Acre	3,482.				
Average Effective Permeability, Millidarcys	9.96				
Average Initial Fluid Production Pressure, p.s.i.	30.0				

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

WATER SAT.,		OIL SAT.,	
PERCENT	→	←	PERCENT
100			100
90			90
80			80
70			70
60			60
50			50
40			40
30			30
20			20
10			10
0			0



CALCAREOUS SANDSTONE

SHALE

VUGGY LIMESTONE

CARBONACEOUS CALCAREOUS SANDSTONE

CONGLOMERATIC CARBONACEOUS CALCAREOUS SANDSTONE

FLOODPOT RESIDUAL OIL SATURATION

IMPERMEABLE TO WATER

GLOBAL OIL, INCORPORATED

ALEXANDER LEASE

LEAVENWORTH COUNTY, KANSAS

WELL NO.: GLOBAL # 1

GLOBAL OIL, INCORPORATED

ALEXANDER LEASE

WELL NO. GLOBAL # 1

LEAVENWORTH 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
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1038.0 - 1314.6	5.4	22.8	62.4	10.8	638.4	
1314.6 - 1319.7	3.1	24.1	30.3	6.2	2.7	
1308.0 - 1319.7	8.5	17.3	50.7	9.1	565.5	1280 (PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MAY, 1981

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