OILFIELD RESEARCH LABORATORIES

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November 17, 1980

Worldwide Oil Corporation
% Global Oil
166 Harvor Drive, #2
Key Biscayne, Florida 33149

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Hayes Lease, Well No. 5, located in Miami County, Kansas and submitted to our laboratory on August 27, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/mkf

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

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Worldwide Oil Corp. Lease Hayes Well No. 5

Location –

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

Elevation, Feet	–
Name of Sand	Peru
Top of Core	440.0
Bottom of Core	456.7
Top of Sand	440.0
Bottom of Sand	449.5
Total Feet of Permeable Sand	9.5
Total Feet of Floodable Sand	6.5

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 – 50	4.5	4.5
50 – 100	4.0	8.5
100 – 150	1.0	9.5

Average Permeability Millidarcys	49.5
Average Percent Porosity	13.8
Average Percent Oil Saturation	57.6
Average Percent Water Saturation	24.9
Average Oil Content, Bbls./A. Ft.	586.
Total Oil Content, Bbls./Acre	5,571.
Average Percent Oil Recovery by Laboratory Flooding Tests	16.9
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	181.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,173.
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:

Depth Interval, Feet	Description
440.0 - 448.9	Brown calcareous sandstone.
448.9 - 449.5	Brown and gray laminated slightly calcareous sandstone and shale.
449.5 - 456.7	Gray shale.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 1173 barrels of oil per acre was obtained from 6.5 feet of sand. The weighted average percent oil saturation was reduced from 47.2 to 40.3, or represents an average recovery of 16.9 percent. The weighted average effective permeability of the samples is 9.31 millidarcys, while the average initial fluid production pressure is 24.3 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 10 samples tested, 7 produced water and oil, and 3 produced water only. This indicates that approximately 70 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 1890 barrels of oil per acre. This is an average recovery of 291 barrels per acre foot from 6.5 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	10.0
Average porosity, percent	14.5
Oil saturation after flooding, percent	40.3
Performance factor, percent, estimated	55.0
Net floodable sand, feet	6.5

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Worldwide Oil Corp. Lease Hayes Well No. 5

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	440.5	10.2	58	13	71	459	24.	1.0	1.0	459	24.00
2	441.3	9.7	66	27	93	497	19.	1.0	2.0	497	19.00
3	442.5	17.2	52	17	69	533	121.	1.0	3.0	533	121.00
4	443.5	14.5	64	18	82	720	65.	1.0	4.0	720	65.00
5	444.5	11.2	68	24	92	591	82.	1.0	5.0	591	82.00
6	445.5	13.9	65	21	86	701	63.	1.0	6.0	701	63.00
7	446.5	14.1	64	16	80	700	63.	1.0	7.0	700	63.00
8	447.5	17.4	39	50	89	527	22.	1.0	8.0	527	22.00
9	448.5	14.5	46	43	89	518	11.	0.9	8.9	466	9.90
10	449.2	16.2	50	20	70	628	2.0	0.6	9.5	377	1.20

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Worldwide Oil Corp. Lease Hayes Well No. 5

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
440.0 - 449.5	9.5	49.5	470.10

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
440.0 - 449.5	9.5	13.8	57.6	24.9	586	5,571

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Worldwide Oil Corp. Lease Hayes Well No. 5

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	440.5	10.3	58	463	0	0	58	37	463	57	1.20	40
2	441.3	9.9	66	507	0	0	66	35	507	23	0.75	45
3	442.5	17.0	52	686	0	0	52	45	686	136	13.74	20
4	443.5	14.7	64	730	22	251	42	55	479	371	14.84	15
5	444.5	11.2	68	591	28	243	40	47	348	216	5.70	30
6	445.5	14.1	65	711	15	164	50	43	547	305	11.41	20
7	446.5	14.1	64	700	23	252	41	53	448	208	8.50	15
8	447.5	17.2	39	520	6	80	33	62	440	393	19.34	20
9	448.5	14.4	46	514	10	112	36	56	402	8	0.30	45
10	449.2	16.1	50	625	11	137	39	56	488	40	0.75	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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SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

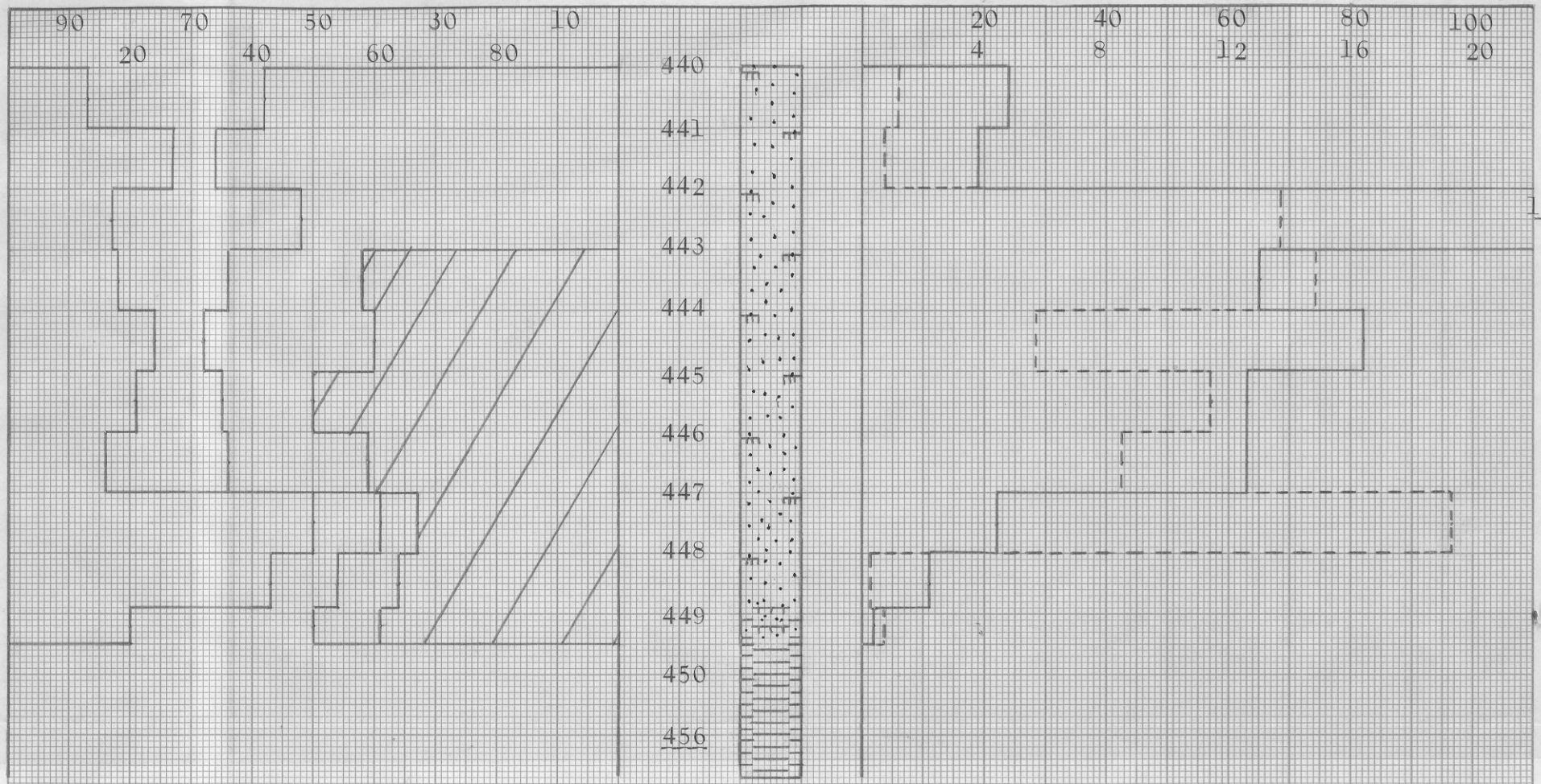
Company Worldwide Oil Corp. Lease Hayes Well No. 5

Depth Interval, Feet	440.0 - 449.5
Feet of Core Analyzed	6.5
Average Percent Porosity	14.5
Average Percent Original Oil Saturation	47.2
Average Percent Oil Recovery	16.9
Average Percent Residual Oil Saturation	40.3
Average Percent Residual Water Saturation	52.9
Average Percent Total Residual Fluid Saturation	93.2
Average Original Oil Content, Bbls./A. Ft.	630.
Average Oil Recovery, Bbls./A. Ft.	181.
Average Residual Oil Content, Bbls./A. Ft.	449.
Total Original Oil Content, Bbls./Acre	4,090.
Total Oil Recovery, Bbls./Acre	1,173.
Total Residual Oil Content, Bbls./Acre	2,917.
Average Effective Permeability, Millidarcys	9.31
Average Initial Fluid Production Pressure, p.s.i.	24.3

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



KEY:

CALCAREOUS SANDSTONE

LAMINATED CALCAREOUS SANDSTONE & SHALE

SHALE

FLOODPOT RESIDUAL OIL SATURATION

WORLDWIDE OIL CORP.

HAYES LEASE WELL NO. 5

MIAMI COUNTY, KANSAS

 CALCAREOUS SANDSTONE

 SHALE

 LAMINATED CALCAREOUS SANDSTONE & SHALE

 FLOODPOT RESIDUAL OIL SATURATION

WORLDWIDE OIL CORP.

HAYES LEASE WELL NO. 5

MIAMI 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
440.0 - 449.5	9.5	13.8	57.6	24.9	49.5	1,890 (PRIMARY & WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
NOVEMBER, 1980 SO