OILFIELD RESEARCH LABORATORIES

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December 10, 1980

Scimitar Resources Limited
104 South Silver
P. O. Box 221
Paloa, Kansas 66071

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Harbison Lease, Well No. S-2, located in Miami County, Kansas and submitted to our laboratory on October 3, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/mkf

4 c to Paola, Ks.

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GENERAL INFORMATION & SUMMARY

Company Scimitar Resources Ltd. Lease Harbison Well No. S-2

Location SE¼

Section 31 Twp. 17S Rge. 22E County Miami State Kansas

Elevation, Feet	-
Name of Sand	Peru
Top of Core	311.0
Bottom of Core	325.5
Top of Sand (Tested)	315.7
Bottom of Sand	325.0
Total Feet of Permeable Sand	7.1
Total Feet of Floodable Sand	3.0

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	2.4	2.4
10 - 20	1.0	3.4
50 - 60	1.0	4.4
70 - 90	2.0	6.4
90 & Above	0.7	7.1

Average Permeability Millidarcys	49.8
Average Percent Porosity	19.1
Average Percent Oil Saturation	31.9
Average Percent Water Saturation	54.1
Average Oil Content, Bbls./A. Ft.	496.
Total Oil Content, Bbls./Acre	4014.
Average Percent Oil Recovery by Laboratory Flooding Tests	8.0
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	140.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	420.
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.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
311.0 - 314.8	Brown and gray laminated slightly calcareous sandstone and shale.
314.8 - 319.7	Dark brown slightly calcareous sandstone.
319.7 - 321.9	Grayish light brown very shaly slightly calcareous sandstone.
321.9 - 322.6	Dark brown slightly calcareous sandstone.
322.6 - 325.0	Grayish light brown shaly sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 420 barrels of oil per acre was obtained from 3.0 feet of sand. The weighted average percent oil saturation was reduced from 43.3 to 35.3, or represents as average recovery of 8.0 percent. The weighted average effective permeability of the samples is 2.50 millidarcys, while the average initial fluid production pressure is 30.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 8 samples tested, 3 produced water and oil, and 2 samples produced water only. This indicates that approximately 38 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 1230 barrels of oil per acre. This is an average recovery of 410 barrels per acre foot from 3.0 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	20.0
Average porosity, percent	22.7
Oil saturation after flooding, percent	35.3
Performance factor, percent, estimated	55.0
Net floodable sand, feet	3.0

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Scimitar Resources Ltd. Lease Harbison Well No. S-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	316.5	23.5	40	37	77	729	58.	1.0	1.0	729	58.00
2	317.5	22.7	35	43	78	616	73.	1.0	2.0	616	73.00
3	318.5	21.9	55	21	76	935	83.	1.0	3.0	935	83.00
4	319.5	19.6	37	49	86	563	13.	1.0	4.0	563	13.00
5	320.5	16.2	29	63	92	365	Imp.	1.0	5.0	365	0.00
6	322.5	17.6	26	55	81	355	164.	0.7	5.7	249	114.80
7	323.5	16.3	28	70	98	354	5.8	1.4	7.1	496	8.12
8	324.5	15.6	5	89	94	61	3.6	1.0	8.1	61	3.60

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Scimitar Resources Ltd. Lease Harbison Well No. S-2

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
315.7 - 318.7	3.0	71.3	214.00
318.7 - 325.0	4.1	34.0	139.52
315.7 - 325.0	7.1	49.8	253.52

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
315.7 - 318.7	3.0	22.7	43.3	33.7	760	2,280
318.7 - 325.0	5.1	17.0	25.2	66.2	340	1,734
315.7 - 325.0	8.1	19.1	31.9	54.1	496	4,014

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Scimitar Resources Ltd. Lease Harbison Well No. S-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	316.5	23.5	40	729	8	146	32	61	583	137	3.00	30
2	317.5	22.8	35	619	5	88	30	65	531	76	1.50	30
3	318.5	21.8	55	930	11	186	44	52	744	139	3.00	30
4	319.5	19.6	37	563	0	0	37	56	563	186	3.40	30
5	320.5	15.8	30	368	0	0	30	64	368	0	Imp.	-
6	322.5	18.1	25	351	0	0	25	71	351	21	0.40	40
7	323.5	16.3	28	354	0	0	28	70	354	0	Imp.	-
8	324.5	15.5	5	60	0	0	5	90	60	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 Scimitar Resources Ltd. Lease Harbison Well No. S-2

Depth Interval, Feet	315.7 - 318.7
Feet of Core Analyzed	3.0
Average Percent Porosity	22.7
Average Percent Original Oil Saturation	43.3
Average Percent Oil Recovery	8.0
Average Percent Residual Oil Saturation	35.3
Average Percent Residual Water Saturation	59.3
Average Percent Total Residual Fluid Saturation	95.6
Average Original Oil Content, Bbls./A. Ft.	759.
Average Oil Recovery, Bbls./A. Ft.	140.
Average Residual Oil Content, Bbls./A. Ft.	619.
Total Original Oil Content, Bbls./Acre	2278.
Total Oil Recovery, Bbls./Acre	420.
Total Residual Oil Content, Bbls./Acre	1858.
Average Effective Permeability, Millidarcys	2.50
Average Initial Fluid Production Pressure, p.s.i.	30.0

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