OILFIELD RESEARCH LABORATORIES

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November 19, 1980

Samson Oil Company
842 One Energy Square
Dallas, Texas 75206

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Demaranville Lease, Well No. 1, located in Leavenworth County, Kansas and submitted to our laboratory on August 29, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

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GENERAL INFORMATION & SUMMARY

Company Samson Oil Co. **Lease** Demaranville **Well No.** 1

Location 1650' FNL & 1100' FWL

Section 3 **Twp.** 9S **Rge.** 20E **County** Leavenworth **State** Kansas

Elevation, Feet	-
Name of Sand	McClouth
Top of Core	1472.0
Bottom of Core	1490.4
Top of Sand	1478.0
Bottom of Sand	1489.3
Total Feet of Permeable Sand	8.6
Total Feet of Floodable Sand	8.3

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 65	0.9	0.9
280 - 380	2.9	3.8
950 - 1140	1.9	5.7
1330 & Above	2.9	8.6

Average Permeability Millidarcys	933.2
Average Percent Porosity	20.7
Average Percent Oil Saturation	46.2
Average Percent Water Saturation	30.5
Average Oil Content, Bbls./A. Ft.	739.
Total Oil Content, Bbls./Acre	7,090.
Average Percent Oil Recovery by Laboratory Flooding Tests	17.6
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	290.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	2,404.
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
1472.0 - 1475.8	Gray shale.
1475.8 - 1477.7	Coal.
1477.7 - 1478.0	Black shale.
1478.0 - 1479.9	Dark brown slightly calcareous sandstone.
1479.9 - 1480.8	Brown and gray laminated slightly calcareous sandstone and shale.
1480.8 - 1481.8	Brown and gray conglomeratic slightly calcareous sandstone and shale.
1481.8 - 1482.7	Dark brown slightly calcareous sandstone.
1482.7 - 1483.4	Gray sandy shale.
1483.4 - 1487.0	Dark brown slightly calcareous sandstone.
1487.0 - 1488.0	Gray shale.
1488.0 - 1489.3	Brown and gray laminated sandstone and shale.
1489.3 - 1490.4	Gray shale.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 2404 barrels of oil per acre was obtained from 8.3 feet of sand. The weighted average percent oil saturation was reduced from 46.4 to 28.8, or represents an average recovery of 17.6 percent. The weighted average effective permeability of the samples is 48.67 millidarcys, while the average initial fluid production pressure is 12.8 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 10 samples tested, 9 produced water and oil, and 1 sample produced water only. This indicates that approximately 90 percent of the sand represented by these samples is floodable pay sand. The tests also show that the sand has a relatively high permeability profile.

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 3370 barrels of oil per acre. This is an average recovery of 406 barrels per acre foot from 8.3 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.10
Reservoir water saturation, percent, estimated	15.0
Average porosity, percent	21.6
Oil saturation after flooding, percent	28.8
Performance factor, percent, estimated	50.0
Net floodable sand, feet	8.3

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Samson Oil Co. Lease Demaranville Well No. 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	Total			Ft.	Cum. Ft.		
1	1478.5	18.6	59	16	75	851	377.	1.0	1.0	851	377.00
2	1479.5	21.0	50	28	78	815	1333.	0.9	1.9	734	1199.70
3	1480.5	21.4	46	20	66	764	958.	0.9	2.8	688	862.20
4	1481.5	20.3	45	49	94	709	Imp.	1.0	3.8	709	0.00
5	1482.5	25.1	40	31	71	779	60.	0.9	4.7	701	54.00
6	1483.5	19.0	45	23	68	663	335.	0.6	5.3	398	201.00
7	1484.5	19.1	40	46	86	593	1132.	1.0	6.3	593	1132.00
8	1485.5	24.9	42	27	69	811	1978.	1.0	7.3	811	1978.00
9	1486.5	23.6	50	23	73	915	1858.	1.0	8.3	915	1858.00
10	1488.5	15.2	45	36	81	531	280.	1.3	9.6	690	364.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Samson Oil Co. Lease Demaranville Well No. 1

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
1478.0 - 1489.3	8.6	933.2	8,025.90

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
1478.0 - 1489.3	9.6	20.7	46.2	30.5	739	7,090

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Samson Oil Co. Lease Demaranville Well No. 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	Bbls./A. Ft.			
1	1478.5	18.7	59	856	32	464	27	58	392	162	17.32	10
2	1479.5	21.0	50	815	20	326	30	64	489	118	34.65	10
3	1480.5	21.5	46	767	21	350	25	70	417	196	41.48	10
4	1481.5	20.2	45	705	20	313	25	73	392	156	31.99	15
5	1482.5	25.2	40	782	14	274	26	69	508	152	31.49	15
6	1483.5	18.8	45	636	8	117	37	58	539	196	16.56	20
7	1484.5	19.3	40	599	13	195	27	63	404	330	67.47	15
8	1485.5	24.8	42	809	13	250	29	56	558	280	88.63	10
9	1486.5	23.7	50	919	14	257	36	51	662	312	89.96	10
10	1488.5	15.7	45	548	0	0	45	45	548	38	1.60	50

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 Samson Oil Co. Lease Demaranville Well No. 1

Depth Interval, Feet	1478.0 - 1489.3
Feet of Core Analyzed	8.3
Average Percent Porosity	21.6
Average Percent Original Oil Saturation	46.4
Average Percent Oil Recovery	17.6
Average Percent Residual Oil Saturation	28.8
Average Percent Residual Water Saturation	62.5
Average Percent Total Residual Fluid Saturation	91.3
Average Original Oil Content, Bbls./A. Ft.	772.
Average Oil Recovery, Bbls./A. Ft.	290.
Average Residual Oil Content, Bbls./A. Ft.	482.
Total Original Oil Content, Bbls./Acre	6,408.
Total Oil Recovery, Bbls./Acre	2,404.
Total Residual Oil Content, Bbls./Acre	4,004.
Average Effective Permeability, Millidarcys	48.67
Average Initial Fluid Production Pressure, p.s.i.	12.8

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