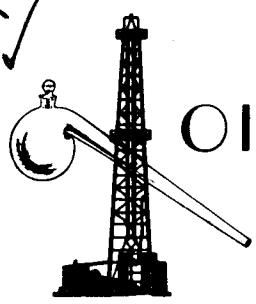


OILFIELD RESEARCH LABORATORIES

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

October 16, 1980

Evans Industries
908 Hulman Building
Evansville, Indiana 74048

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Williams Lease, Well No. 53, located in Allen County, Kansas and submitted to our laboratory on July 29, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/ks

3 c to Evansville, Indiana

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Evans Industries Lease Williams Well No. 53

Location -

Section - Twp. - Rge. - County Allen State Kansas

Elevation, Feet	-
Name of Sand	Bartlesville
Top of Core	667.0
Bottom of Core	673.3
Top of Sand (Analyzed)	667.0
Bottom of Sand (Analyzed)	673.3
Total Feet of Permeable Sand	6.3
Total Feet of Floodable Sand	1.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	4.7	4.7
10 & Above	1.6	6.3

Average Permeability Millidarcys	38.6
Average Percent Porosity	19.2
Average Percent Oil Saturation	43.4
Average Percent Water Saturation	45.9
Average Oil Content, Bbls./A. Ft.	660.
Total Oil Content, Bbls./Acre	4153.
Average Percent Oil Recovery by Laboratory Flooding Tests	3.0
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	40
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	40
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section

This core was sampled and the samples sealed in plastic bags by a representative of the client. The core is from a non-virgin area. Fresh water mud was used as the circulating fluid while taking this core.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
667.0 - 668.2	Grayish brown shaly sandstone.
668.2 - 669.8	Brown sandstone.
669.8 - 673.3	Brown slightly carbonaceous very shaly sandstone.

LABORATORY FLOODING TESTS

A portion of the sand in this core responded to laboratory flooding tests, as a total recovery of 40 barrels of oil per acre was obtained from 1.0 feet of sand. The weighted average percent oil saturation was reduced from 33.0 to 30.0, or represents an average recovery of 3.0 percent. The weighted average effective permeability of the samples is 3.00 millidarcys, while the average initial fluid production pressure is 15.0 pounds per square inch (See Table V).

CALCULATED RECOVERY

A study of the results of the laboratory testing indicates that efficient primary and waterflooding operations in the vicinity of this well should recover approximately 160 barrels of oil per acre. This is an average of 160 barrels per acre foot from the one foot of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.06
Reservoir water saturation, percent, estimated	45.0
Average porosity, percent	17.1
Oil saturation after flooding, percent	30.0
Performance factor, percent, estimated	55.0
Net floodable pay sand, feet	1.0

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Evans Industries Lease Williams Well No. 53

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	667.5	16.4	27	55	82	344	7.5	1.2	1.2	413	9.00
2	668.5	17.5	33	61	94	448	15.	1.0	1.8	448	15.00
3	669.5	19.6	29	61	90	441	360.	0.6	2.8	264	216.00
4	670.5	20.0	45	46	91	698	1.3	1.0	3.8	698	1.30
5	671.3	20.4	55	24	79	870	1.7	1.0	4.8	870	1.70
6	672.4	20.9	60	37	97	973	0.19	1.5	6.3	1460	0.29

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Evans Industries Lease Williams Well No. 53

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
667.0 - 673.3	6.3	38.6	243.29

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
667.0 - 673.3	6.3	19.2	43.4	45.9	660	4,153

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Evans Industries Lease Williams Well No. 53

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	667.3	16.3	29	367	0	0	29	67	367	12	0.30	30
2	668.5	17.1	33	438	3	40	30	68	398	237	3.00	15
3	669.5	19.6	28	426	0	0	28	63	426	250	14.70	10
4	670.5	19.6	47	715	0	0	47	47	715	0	Imp.	-
5	671.3	20.5	55	875	0	0	55	28	875	0	Imp.	-
6	672.4	20.6	63	1007	0	0	63	35	1007	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.

Oilfield Research Laboratories

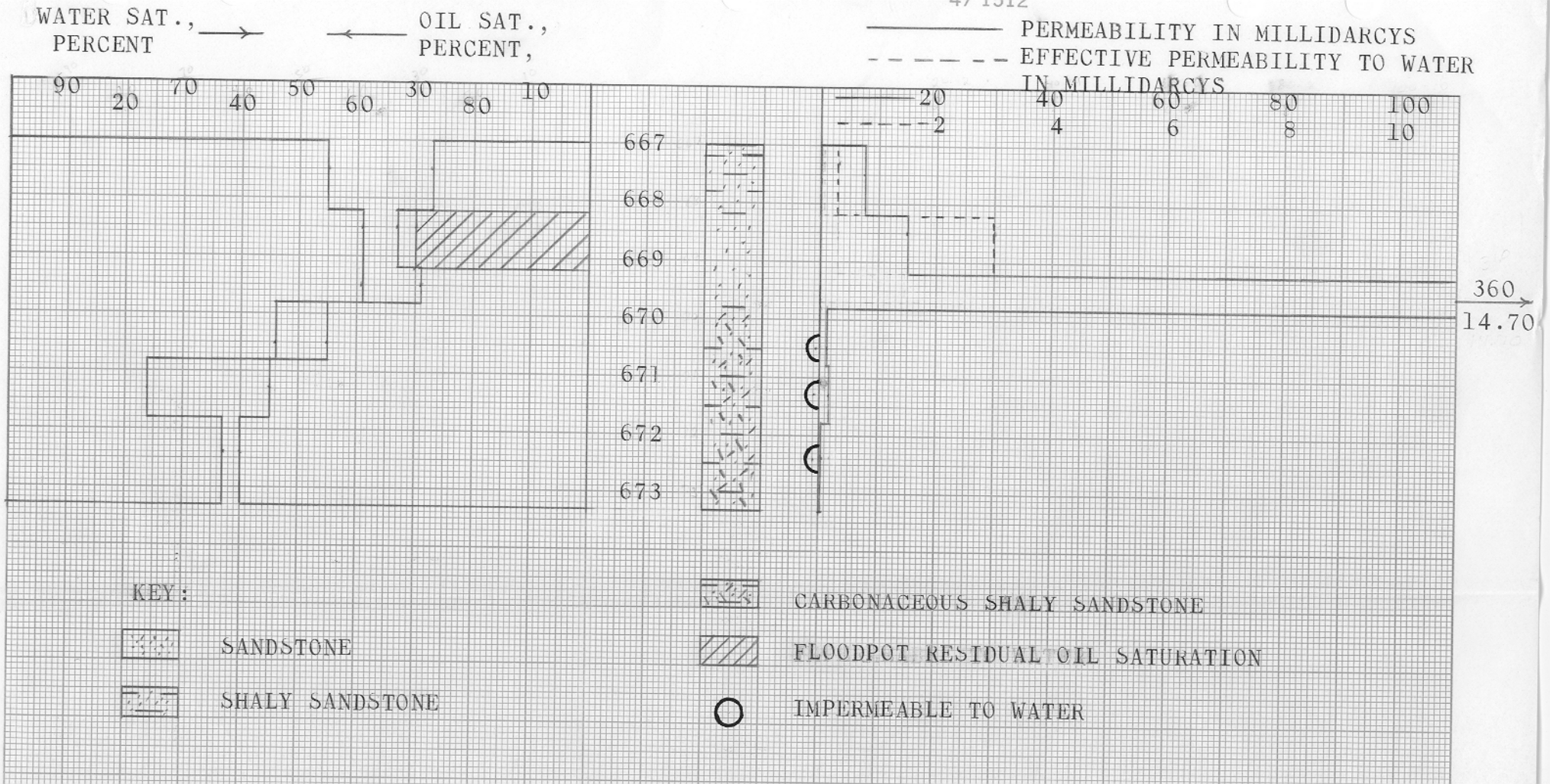
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Evans Industries Lease Williams Well No. 53

Depth Interval, Feet	667.0 - 673.3
Feet of Core Analyzed	1.0
Average Percent Porosity	17.1
Average Percent Original Oil Saturation	33.0
Average Percent Oil Recovery	3.0
Average Percent Residual Oil Saturation	30.0
Average Percent Residual Water Saturation	68.0
Average Percent Total Residual Fluid Saturation	98.0
Average Original Oil Content, Bbls./A. Ft.	438.
Average Oil Recovery, Bbls./A. Ft.	40.
Average Residual Oil Content, Bbls./A. Ft.	398.
Total Original Oil Content, Bbls./Acre	438.
Total Oil Recovery, Bbls./Acre	40.
Total Residual Oil Content, Bbls./Acre	398.
Average Effective Permeability, Millidarcys	3.00
Average Initial Fluid Production Pressure, p.s.i.	15.0

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


WATER SAT., PERCENT
90 20 70 40 50 60 30 80 10
OIL SAT., PERCENT,
PERMEABILITY IN MILLIDARCYS
EFFECTIVE PERMEABILITY TO WATER IN MILLIDARCYS
20 40 60 80 100
2 4 6 8 10
667
668
669
670
671
672
673
360
14.70
KEY:
SANDSTONE
SHALY SANDSTONE
CARBONACEOUS SHALY SANDSTONE
FLOODPOT RESIDUAL OIL SATURATION
IMPERMEABLE TO WATER

EVANS INDUSTRIES

WILLIAMS LEASE WELL NO. 53

ALLEN 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
667.0-673.3	6.3	19.2	43.4	45.9	38.6	160 (PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
OCTOBER, 1980

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