

# OILFIELD RESEARCH LABORATORIES

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

December 15, 1981

Smith & Forbis Enterprises, Inc.  
P. O. Box 1501  
Pasadena, Texas 77501

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Johnson Lease, Well No. 2, located in Bourbon County, Kansas and submitted to our laboratory on December 10, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/mkf

5 c to Pasadena, Tx.

**Oilfield Research Laboratories**  
**GENERAL INFORMATION & SUMMARY**

Company Smith & Forbis Enterprises, Inc. Lease Johnson Well No. 2  
 Location \_\_\_\_\_  
 Section 33 Twp. 23S Rge. 25E County Bourbon State Kansas

Elevation, Feet .....  
 Name of Sand.....  
 Top of Core .....  
 Bottom of Core .....  
 Top of Sand .....  
 Bottom of Sand .....  
 Total Feet of Permeable Sand .....  
 Total Feet of Floodable Sand .....

BARTLESVILLE  
 225.0  
 245.4  
 237.0  
 245.4  
 4.3  
 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 2	2.3	2.3
2 - 5	2.0	4.3

Average Permeability Millidarcys ..... 2.3  
 Average Percent Porosity ..... 12.0  
 Average Percent Oil Saturation ..... 15.5  
 Average Percent Water Saturation..... 78.1  
 Average Oil Content, Bbls./A. Ft. .... 171.  
 Total Oil Content, Bbls./Acre..... 1,438.  
 Average Percent Oil Recovery by Laboratory Flooding Tests..... 0.  
 Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. .... 0.  
 Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre ..... 0.  
 Total Calculated Oil Recovery, Bbls./Acre..... 0.

The core was sampled by a representative of Oilfield Research Laboratories. Fresh water mud was used as a drilling fluid.

Inasmuch as the core did not respond to flooding susceptibility tests, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
225.0 - 237.0	Gray shale.
237.0 - 238.4	Gray shaly sandstone.
238.4 - 239.1	Grayish brown shaly sandstone.
239.1 - 239.7	Gray and brown laminated shale and sandstone.
239.7 - 242.7	Grayish brown shaly sandstone.
242.7 - 245.4	Gray very shaly sandstone.

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## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Smith & Forbis Enterprises, Inc. Lease Johnson Well No. 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	237.5	2.7	10	85	95	21	Imp.	1.4	1.4	29	0.00
2	238.6	20.5	20	58	78	318	1.1	0.7	2.1	223	0.77
3	239.3	16.8	26	72	98	339	0.28	0.6	2.7	203	0.17
4	240.4	16.5	12	81	93	154	1.7	1.0	3.7	154	1.70
5	241.6	18.3	19	73	92	270	2.4	1.0	4.7	270	2.40
6	242.4	17.3	36	58	94	483	4.7	1.0	5.7	483	4.70
7	243.3	2.0	11	86	97	17	Imp.	1.2	6.9	20	0.00
8	244.3	12.0	4	92	96	37	Imp.	1.5	8.4	56	0.00

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## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Smith & Forbis Enterprises, Inc. Lease Johnson Well No. 2

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Oil Saturation	Average Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
237.0 - 245.4	4.3	2.3	9.74	15.5	78.1	171	1,438
237.0 - 245.4	8.4	12.0		15.5	78.1	171	1,438

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## RESULTS OF LABORATORY FLOODING TESTS

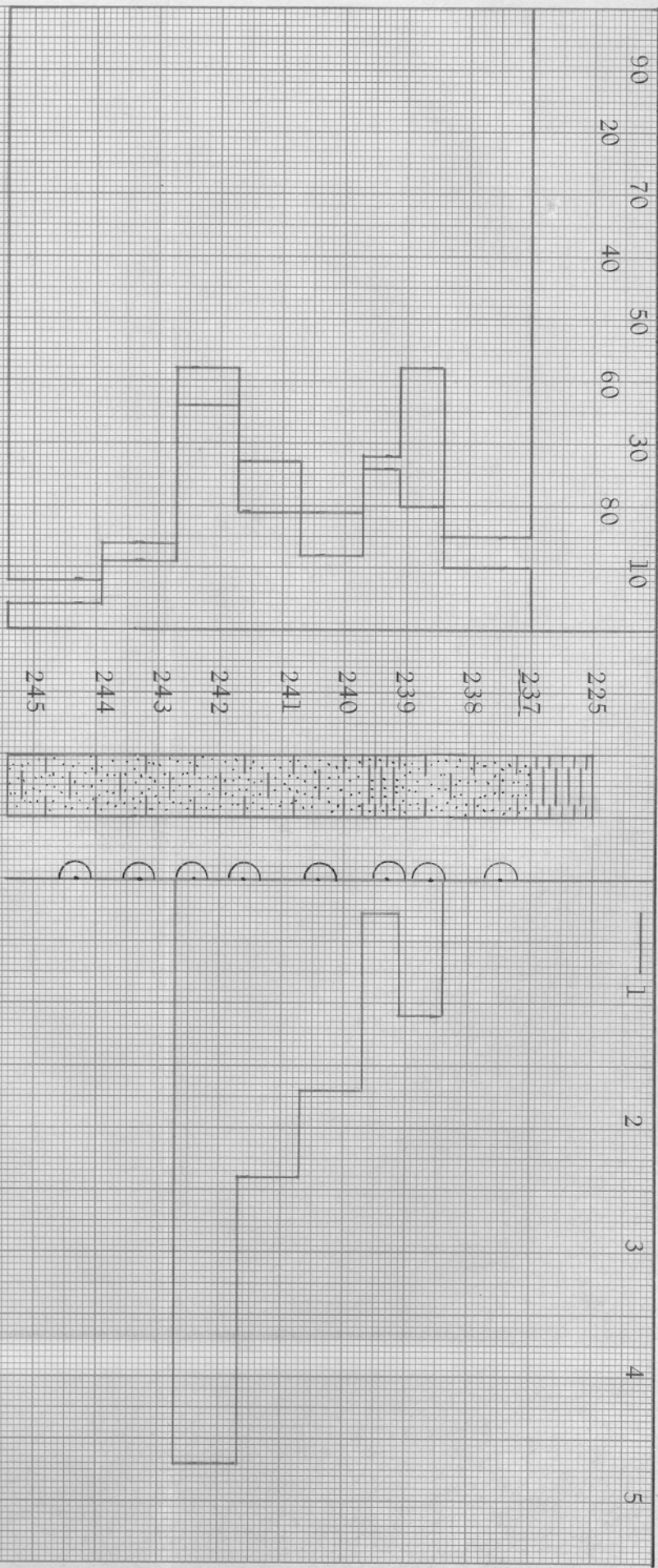
TABLE IV

Company Smith & Forbis Enterprises, Inc. Lease Johnson Well No. 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			
1	237.5	2.8	10	22	0	0	10	85	0	Imp.	-
2	238.6	20.4	20	317	0	0	20	59	0	Imp.	-
3	239.3	16.5	27	346	0	0	27	71	0	Imp.	-
4	240.4	16.8	11	143	0	0	11	83	0	Imp.	-
5	241.6	18.4	19	271	0	0	19	74	0	Imp.	-
6	242.4	17.8	35	483	0	0	35	60	0	Imp.	-
7	243.3	2.0	11	17	0	0	11	86	0	Imp.	-
8	244.3	11.9	4	37	0	0	4	93	0	Imp.	-

WATER SAT., ———> ←—— OIL SAT.,  
PERCENT PERCENT

———— PERMEABILITY, IN MILLIDARCYS  
EFFECTIVE PERMEABILITY TO WATER, IN  
MILLIDARCYS



KEY:  
SHALE

SHALY SANDSTONE  
LAMINATED SANDSTONE AND SHALE  
IMPERMEABLE TO WATER

225  
237  
238  
239  
240  
241  
242  
243  
244  
245

1 2 3 4 5

# SMITH & FORBIS ENTERPRISES

WELL NO. 2

JOHNSON LEASE

BOURBON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCY	CALCULATED OIL RECOVERY BBLs. / ACRE
237.0 - 245.4	8.4	12.0	15.5	78.1	2.3	-

OILFIELD RESEARCH LABORATORIES  
 CHANUTE, KANSAS  
 DECEMBER, 1981

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