

# Kansas Cores

PETROLEUM RESERVOIR ENGINEERING

CORE ANALYSIS

1026 NORTH LIGHTNER  
WICHITA, KANSAS 67208

Sept. 30, 1966

Re: CORE ANALYSIS REPORT  
Beardmore Drilling Co. &  
Shawver-Armour, Inc.  
Haines #2  
Sumner County  
Kansas

Beardmore Drlg. Co.  
One-Twenty Building  
Wichita, Kansas

Gentlemen:

The cores from your well, Haines #2, Sumner County, Kansas have been analysed for permeability, porosity, and residual saturation of oil and water. The data will be found tabulated on the following pages and indicated on the coregraph. The data averages and recovery estimates will be found at the end of this report.

The following is a short discussion of the section cored and analysed.

## 3727' to 3732' - Gas Productive

The Mississippian encountered at this depth was composed of a hard grey crystalline limestone, dolomitic in part, with low porosities and poor permeabilities. The oil percentages indicate this zone will be only gas productive.

## 3733' to 3748' - Oil Productive

A soft limey dolomite was found in the top 4' of this section, and the remainder was mainly a limestone interspersed with some dolomitic limestone and some dolomite. Fair oil saturation was measured throughout except in streaks of non-permeable limestone. The water percentages are well in line for oil production. Fairly low and erratic permeabilities were noted, and the porosities show the limey nature of the samples. After acid treatment to increase the permeabilities this zone is expected to be commercially productive.

Yours very truly,

KANSAS CORES

*Ivan L. Stuber*  
Ivan L. Stuber

Attachments

cc: 10 copies to Beardmore Drlg. Co., Wichita, Ks.

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WICHITA, KANSAS

## DATA AVERAGES AND OIL RECOVERY FIGURES

DEPTH	3733'-3748'		
FEET OF PRODUCTION FORMATION OF SECTION ANALYZED	12		
AVERAGE PERMEABILITY IN MILLIDARCYS	17.4		
AVERAGE POROSITY, PER CENT	12.5		
AVERAGE TOTAL WATER % OF PORE SPACE	34.3		
AVERAGE RESIDUAL OIL % OF PORE SPACE	12.1		
AVERAGE CONNATE WATER CALCULATED % OF PORE SPACE	27.4		
ESTIMATED FORMATION VOLUME FACTOR - USED IN CALCULATING RECOVERABLE OIL	1.24		
PRODUCTIVE CAPACITY - PRODUCTIVE FEET X AVERAGE PERMEABILITY IN MILLIDARCYS	209		
RECOVERABLE OIL BY WATER DRIVE - BBLs. PER ACRE FOOT	372		
RECOVERABLE OIL BY GAS EXPANSION - BBLs. PER ACRE FOOT	223*		

\*From original bottom hole pressure to zero

# Kansas Cores

PETROLEUM RESERVOIR ENGINEERING  
WICHITA, KANSAS 67208

WELL Haines #2 COUNTY Sumner STATE Kansas  
 COMPANY Shawver-Beardmore Drlg. & Armour, Inc. DATE 9-30-66 FILE NO. S-690  
 FIELD \_\_\_\_\_ TYPE CORES Diamond ANALYST IS

## ANALYSIS DATA AND INTERPRETATIONS

SAMPLE No.	DEPTH	PERMEABILITY MILLIDARCYS		POROSITY %	SATURATION WATER % PORE SPACE	SATURATION OIL % PORE SPACE	PROBABLE PRODUCTION	REMARKS
		HORIZONTAL	VERTICAL					
1	3727	0.8	0.0	7.3	48.2	0.0	Gas	
	28							
2	3728	1.6	0.8	9.2	46.0	0.0	Gas	
	29							
3	3729	11.0	8.9	14.0	43.9	0.0	Gas	
	30							
4	3730	23.1	13.0	13.7	46.9	1.5	Gas	
	31							
5	3731	3.1	0.0	9.0	47.0	1.8	Gas	
	32							
6	3732	0.0	0.0	6.5	24.0	1.6	No Perm	Vertical fractures
	33							
7	3733	8.2	10.7	13.6	31.1	13.3	Oil	
	34							
8	3734	9.8	18.6	13.7	29.2	9.8	Oil	
	35							
9	3735	32.2	25.8	16.3	38.5	12.0	Oil	
	36							
10	3736	54.8	43.7	16.0	39.6	14.6	Oil	
	37							
11	3737	5.1	4.2	10.2	31.0	14.5	Oil	
	38							
12	3738	0.0	0.0	3.9	52.7	0.0	No Perm	
	39							
13	3739	0.0	0.0	4.0	50.6	0.0	No Perm	
	40							
14	3740	6.7	9.8	9.9	38.3	10.3	Oil	
	41							
15	3741	22.1	18.9	12.4	32.0	11.3	Oil	
	42							
16	3742	25.8	20.6	15.2	28.0	10.0	Oil	
	43							
17	3743	1.0	0.0	10.6	35.1	11.8	Oil	
	44							
18	3744	0.0	0.0	7.6	40.5	8.7	No Perm	
	45							
19	3745	4.0	1.2	9.6	33.3	13.3	Oil	
	46							
20	3746	35.9	14.7	16.2	32.5	10.9	Oil	
	47							
21	3747	3.4	5.8	11.6	40.5	13.1	Oil	
	48							

Re: CORE DESCRIPTION  
Beardmore Drlg. and  
Shawver-Armeur, Inc.  
Haines #2  
Sumner County, Kansas

CORE #1

3727' to 3743'

Cut 16'

Rec. 16'

- 3727--29 Soft light grey finely crystalline slightly fossiliferous and slightly dolomitic limestone: No stain, poor odor
- 3729--31 Soft brown finely crystalline dolomitic limestone, slightly vugular with some clear calcite inclusions bottom: No stain, fair odor
- 3731--33 Hard grey coarse crystalline to some dense tan limestone, some vertical fractures bottom: Spotted slight staining
- 3733--35 Soft brown coarse crystalline dolomitic limestone: Good stain and odor
- 3735--37 Soft dark brown sucresic to finely crystalline dolomite: Good stain and odor
- 3737--38 Hard crystalline, medium to coarse, slightly dolomitic limestone: Good stain and odor
- 3738--40 Very hard grey to tan and brown coarse crystalline limestone: No stain or odor
- 3740--43 Hard brown coarse crystalline limey dolomite, becoming more dolomitic toward bottom, some white to clear calcite inclusions bottom: Good stain and odor

CORE #2

3743' to 3748'

Cut 5'

Rec. 5'

- 3743--45 Fairly hard grey-brown coarse crystalline dolomitic limestone: Fair stain and odor
- 3745--46 Soft brown coarse crystalline limey dolomite: Good stain and odor
- 3746--48 Soft brown finely crystalline dolomite, trace fossils: Good stain and odor

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PETROLEUM RESERVOIR ENGINEERING  
WICHITA, KANSAS

COMPANY Beardmore Drilg. & Shawver-Armeur, Inc DATE 9-30-66

WELL Haines #2 ANALYST IS

FIELD \_\_\_\_\_

COUNTY Sumner STATE Kansas

The analyses and interpretations are based on material brought to Kansas Cores by the client, and such data and interpretations are accessible only to that company which the client represents. Kansas Cores makes no warranty and makes no guarantee for the interpretations and opinions of the data. Our opinions of an analysis are placed at the discretion of the operator.

PERMEABILITY MILLIDARCYS  $\circ \text{---} \circ$

200 150 100 50 0

POROSITY-% ~~X~~X

20 10 0

CONNATE WATER % SATURATION

0 70 60 50 40  $\circ \text{---} \circ$

OIL % PORE SATURATION ~~X~~X

0 10 20

