

15-073-21318

Kansas Cores

12-22s-10E

PETROLEUM RESERVOIR ENGINEERING

CORE ANALYSIS

Mar. 27, 1978

1026 NORTH LIGHTNER
WICHITA, KANSAS 67208

Re: CORE ANALYSIS REPORT
R.R. Abderhalden
DAS #94
C SW NE 12-22-10E
Greenwood Co., Kans.

R.R. Abderhalden
Suite 1640
Vickers-KSBT Bldg.
Wichita, Kansas

Gentlemen:

The cores from the captioned well 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 figures will be found at the end of this report.

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

2035' to 2050' - Oil Productive

This upper section of the Bartlesville consisted of a fine grained light grey-brown slightly friable sand with good oil saturation and waters in line for oil production. Good porosities and fairly low permeabilities were measured. A commercial well can be expected from this section.

2053' to 2118' - Water Productive

This clean and permeable sand was separated from that above by 3' of hard tight shale and silt, and has apparently been affected by the water flood on this field. Some oil is trapped at the top of this zone, but it is believed to be non-commercial with the water from below soon overcoming the oil.

Yours very truly,

KANSAS CORES

Ivan L. Stuber
Ivan L. Stuber

Attachments

cc: 3 copies to R.R. Abderhalden, Wichita, Ks.

Re: CORE DESCRIPTION
R.R. Abderhalden
D & S #94
Greenwood County
Kansas

CORE #1 2035' to 2086' Cut 51' Rec. 51'

- 2035--46 Slightly friable fine grained light grey-brown clean sands: Good stain and odor, streaked bleeding oil with traces water
- 2046--47 Light grey very fine grained silt and traces silty sand with some thin grey-green shale laminations: Traces scattered bleeding oil
- 2047--50 Fine grained friable fairly clean light grey-brown sands: Good stain and odor, scattered bleeding oil with some water
- 2050--53 Very fine grained light grey-green silt with traces silty sand and some laminations of grey-green shale: Traces stain in part
- 2053--67 Fine grained friable fairly clean sand, light grey-brown: Fair odor, good stain, bleeding traces oil with salt water, water increasing downward
- 2067--72 Grey-green shale with some very fine grained grey silt and some hard grey quartzitic sand: Traces stain in part
- 2072--86 Fine grained light grey-brown and grey sand, friable in streaks: Fair odor, good stain, bleeding water with some oil in part

CORE #2 2086' to 2125' Cut 39' Rec. 38'

- 2086--2120 Soft friable fine grained light grey-brown and grey sand, becoming slightly larger grained downwards: Fair odor decreasing downward, fair stain, bleeding water with traces oil toward top, no oil bleeding in bottom 20'
- 2120--24 Dark grey shale
- 2124--25 No recovery

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WELL D&S #94 COUNTY Greenwood STATE Kansas
COMPANY R.R. Abderhalden DATE 3-27-78 FILE NO 8-1346
FIELD _____ TYPE CORES Diamond ANALYST IS

ANALYSIS DATA AND INTERPRETATIONS

SAMPLE	DEPTH	PERMEABILITY MILLIDARCYs		POROSITY %	SATURATION WATER % PORE SPACE	SATURATION OIL % PORE SPACE	PROBABLE PRODUCTION	REMARKS
		HORIZONTAL	VERTICAL					
1	2035 36	4.6	2.1	19.7	50.5	14.7	Oil	
2	2036 37	7.2	2.3	19.6	49.3	15.8	Oil	
3	2037 38	4.5	1.8	18.6	47.0	15.7	Oil	
4	2038 39	4.1	2.3	17.9	50.9	13.9	Oil	
5	2039 40	7.1	8.9	18.9	44.1	22.1	Oil	
6	2040 41	11.3	5.0	17.2	42.0	19.2	Oil	
7	2041 42	4.8	4.8	16.8	50.0	23.8	Oil	
8	2042 43	10.1	5.3	18.6	39.2	20.2	Oil	
9	2043 44	4.8	4.2	17.6	42.6	23.7	Oil	
10	2044 45	2.0	0.0	16.5	51.6	19.3	Oil	
11	2045 46	27.4	25.1	21.7	36.5	19.1	Oil	
12	2046 47	0.0	0.0	14.5	81.0	3.1	No Perm	
13	2047 48	7.3	0.0	18.3	44.1	22.6	Oil	
14	2048 49	3.9	1.0	17.8	46.2	17.4	Oil	
15	2049 50	4.7	5.0	18.0	45.3	22.7	Oil	
16	2050 51	0.0	0.0	9.4	93.5	0.2	No Perm	
17	2051 52	0.0	0.0	10.5	77.5	4.4	No Perm	
18	2052 53	0.0	0.0	9.7	90.7	0.0	No Perm	

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WELL _____ COUNTY _____ STATE _____

COMPANY _____ DATE _____ FILE No. _____

FIELD _____ TYPE CORES _____ ANALYST _____

ANALYSIS DATA AND INTERPRETATIONS

SAMPLE	DEPTH	PERMEABILITY MILLIDARCYs		POROSITY %	SATURATION WATER % PORE SPACE	SATURATION OIL % PORE SPACE	PROBABLE PRODUCTION	REMARKS
		HORIZONTAL	VERTICAL					
19	2053 54	24.1	11.5	17.5	47.3	17.8	Oil & Water	
20	2054 55	28.1	22.3	17.6	53.3	22.5	Oil & Water	
21	2055 56	26.3	21.7	16.8	57.0	24.8	Oil & Water	
22	2056 57	23.0	14.7	17.3	46.6	16.8	Oil & Water	
23	2059 60	12.5	12.0	16.9	56.6	17.6	Water	
24	2062 63	26.7	21.9	16.5	52.7	17.6	Water	
25	2066 67	31.5	35.3	16.2	59.6	18.1	Water	
26	2069 70	0.0	0.0	8.5	74.6	0.0	No Perm	
27	2072 73	6.8	2.1	23.2	41.4	4.6	Water	
28	2075 76	7.1	4.6	16.8	56.3	15.0	Water	
29	2078 79	51.2	34.5	24.1	43.6	14.8	Water	
30	2081 82	28.0	25.1	25.0	40.4	11.7	Water	
31	2084 85	8.1	0.0	14.4	69.4	15.1	Water	
32	2087 88	26.7	3.2	17.2	49.7	20.6	Water	
33	2093 94	54.8	34.3	18.0	48.3	20.2	Water	
34	2099 2100	38.2	25.9	15.9	55.8	16.9	Water	
35	2105 06	60.3	46.8	17.9	47.2	10.1	Water	
36	2111 12	32.3	21.5	19.6	43.7	13.5	Water	
37	2117 18	98.1	84.7	19.2	57.8	14.5	Water	

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DATA AVERAGES AND OIL RECOVERY FIGURES

DEPTH	2035'-2050'	
FEET OF PRODUCTION FORMATION OF SECTION ANALYZED	14	
AVERAGE PERMEABILITY IN MILLIDARCYS	7.4	
AVERAGE POROSITY, PER CENT	18.4	
AVERAGE TOTAL WATER % OF PORE SPACE	45.7	
AVERAGE RESIDUAL OIL % OF PORE SPACE	19.3	
AVERAGE CONNATE WATER CALCULATED % OF PORE SPACE	36.5	
ESTIMATED FORMATION VOLUME FACTOR -- USED IN CALCULATING RECOVERABLE OIL	1.18	
PRODUCTIVE CAPACITY -- PRODUCTIVE FEET X AVERAGE PERMEABILITY IN MILLIDARCYS	104	
RECOVERABLE OIL BY WATER DRIVE -- BBLs. PER ACRE FOOT	346 *	
RECOVERABLE OIL BY GAS EXPANSION -- BBLs. PER ACRE FOOT	192 **	

* 45% of the oil in place

** 25% of the oil in place

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COMPANY R.R. Abderhalden DATE 3-27-78
WELL D&S #94 ANALYST IS
FIELD _____ ELEVATION _____
COUNTY Greenwood STATE Kansas GR _____ KB _____

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 0 80

80 60 40 20 0

POROSITY - % X 20 10 0

CORING TIME

MIN/FT

5 10 15

CONNATE WATER % SATURATION

0 80 70 60 50

OIL % PORE SATURATION X 10 20 30

