COMPANY LEE PHILLIPS OIL & E.W. ADAIR OIL

WELL LADD #4

LOCATION [illegible] NE NW 19-25-9E

COUNTY GREENWOOD

STATE KANSAS

KANSAS CORES

PETROLEUM RESERVOIR ENGINEERING

CORE ANALYSIS

Kansas Cores

PETROLEUM RESERVOIR ENGINEERING

WICHITA, KANSAS

COMPANY Lee Phillips Oil & E.H. Adair Oil DATE 3-20-65

WELL Ladd #4 ANALYST IS

FIELD

COUNTY Greenwood STATE Kansas

PERMEABILITY MILLIDARCYS O—O

80 60 40 20 0

POROSITY – % X—X

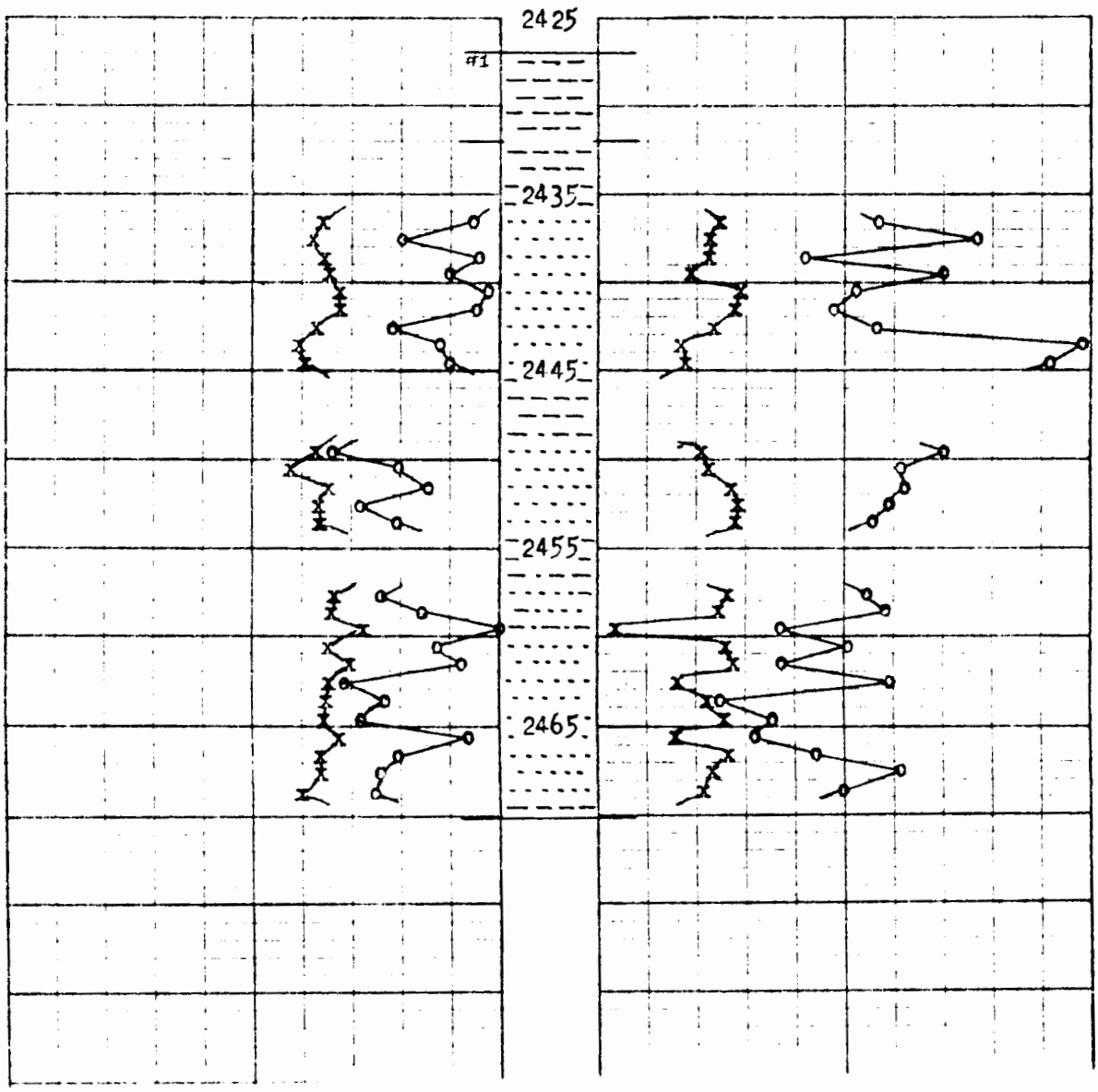
20 10 0

CONNATE WATER % SATURATION O—O

0 70 60 50 40

OIL % PORE SATURATION X—X

0 10 20



Kansas Cores
PETROLEUM RESERVOIR ENGINEERING
CORE ANALYSIS
1026 NORTH LIGHTNER
WICHITA, KANSAS 67208

Mar. 20, 1965

Re: CORE ANALYSIS REPORT
Lee Phillips Oil & E.H. Adair Oil
Ladd #4
Greenwood County, Kansas

Lee Phillips Oil Co.
Wichita Plaza Bldg.
Wichita, Kansas

Gentlemen:

The cores from your well, Ladd #4, Greenwood 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 figures will be found at the end of this report.

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

2436' to 2445' - Oil Productive

The sand found at this depth was a very fine grained slightly silty sand, becoming more friable and larger grained toward the bottom. Fair porosities and low permeabilities were measured. Good, even saturation was noted, and the water percentages are in line for oil production. A commercial well can be expected from this zone after a successful "frac" increases the permeabilities.

2449' to 2461' - Oil Productive

The upper 5' of this section was composed of a good friable sand with good permeabilities and porosities. Good oil percentages were measured, and the waters are in line for oil production. The lower 4' was separated from the upper by 3' of shale, and was somewhat carbonaceous and shaley. Good oil production can be expected from this zone, especially the top 5'. The water contact was found at 2461', with permeable sand below.

Yours very truly,

KANSAS CORES

Ivan L. Stuber

Attachments
cc: 6 copies to Lee Phillips Oil Co., Wichita, Ks.

Re: CORE DESCRIPTION
Lee Phillips Oil Co.
Ladd #4
Greenwood County
Kansas

CORE #1

2427' to 2470' Cut 43' Rec. 43'

5' Hard light grey slightly micaceous shale

2' Same as above with few thin streaks of silty sand: Trace bleeding oil in sand

2' Grey silty shale

6' Soft very fine grained light grey-green slightly friable sand: Good stain and odor

3' Soft grey friable fine grained sand: Good stain and odor

4' Grey shale, slightly sandy bottom 1'

5' Soft grey-green friable fine grained sand: Good stain and odor

3' Grey sandy shale

2' Soft fine to medium grained friable grey sand with few black carbonaceous inclusions and trace black micaceous shale laminations: Good stain and odor

1' Light grey silty sand with numerous black shale streaks: Trace staining

1' Soft brown fine to medium grained friable sand: Good stain and odor

5' Fine to medium grained friable sand with some specks of carbonaceous material , trace carbonaceous inclusions: Good stain, fair odor

3' Soft brown fine to medium grained sand: Good stain and odor

1' Hard slick green-black shale

Kansas Cores

PETROLEUM RESERVOIR ENGINEERING
WICHITA, KANSAS 67208

WELL Ladd #4 COUNTY Greenwood STATE Kansas

COMPANY Lee Phillips Oil DATE 3-20-65 FILE NO. S-593

FIELD TYPE CORES Diamond ANALYST IS

ANALYSIS DATA AND INTERPRETATIONS

SAMPLE No.	DEPTH	PERMEABILITY MILLIDARCYS HORIZONTAL	PERMEABILITY MILLIDARCYS VERTICAL	POROSITY %	SATURATION WATER % PORE SPACE	SATURATION OIL % PORE SPACE	PROBABLE PRODUCTION	REMARKS
1	2436 37	6.8	3.2	18.2	51.8	12.1	Oil	
2	2437 38	20.2	12.8	19.2	41.9	11.5	Oil	
3	2438 39	5.8	3.1	18.3	59.5	11.0	Oil	
4	2439 40	10.1	4.9	17.9	45.0	9.0	Oil	
5	2440 41	1.8	0.8	16.9	54.1	14.4	Oil	
6	2441 42	5.8	2.1	16.2	56.6	13.9	Oil	
7	2442 43	21.6	20.4	18.9	52.0	11.6	Oil	
8	2443 44	11.6	6.9	20.6	30.5	8.7	Oil	
9	2444 45	10.5	5.8	19.7	34.4	8.9	Oil	
		Greyshale						
10	2449 50	38.6	6.1	18.5	45.1	10.5	Oil	
11	2450 51	20.4	24.8	21.3	49.3	10.9	Oil	
12	2451 52	14.5	21.0	17.4	48.9	13.4	Oil	
13	2452 53	28.3	35.6	18.0	50.4	14.6	Oil	
14	2453 54	10.4	8.6	18.0	52.5	14.6	Oil	
		Greyshale						
15	2457 58	24.3	2.0	16.5	53.6	13.1	Oil	
16	2458 59	16.5	10.5	17.2	51.0	11.9	Oil	
17	2459 60	0.0	0.0	14.1	61.7	1.2	No Perm	
18	2460 61	12.6	8.9	17.6	54.9	12.3	Oil	
19	2461 62	8.4	3.9	15.0	61.5	14.0	Water	
20	2462 63	32.3	24.7	17.5	50.5	8.0	Water	
21	2463 64	23.5	16.9	17.5	68.0	11.6	Water	
22	2464 65	28.8	27.9	17.9	62.4	12.8	Water	
23	2465 66	7.3	4.8	16.2	64.2	7.7	Water	
24	2466 67	20.4	8.1	18.4	58.7	13.0	Water	
25	2467 68	24.5	17.6	18.5	49.1	11.8	Water	

PETROLEUM RESERVOIR ENGINEERING
WICHITA, KANSAS

Ladd #4
19-25 S-9E

DATA AVERAGES AND OIL RECOVERY FIGURES

DEPTH	2436'-2461'
FEET OF PRODUCTION FORMATION OF SECTION ANALYZED	17
AVERAGE PERMEABILITY IN MILLIDARCYS	15.5
AVERAGE POROSITY, PER CENT	18.3
AVERAGE TOTAL WATER % OF PORE SPACE	48.9
AVERAGE RESIDUAL OIL % OF PORE SPACE	11.9
AVERAGE CONNATE WATER CALCULATED % OF PORE SPACE	38.3
ESTIMATED FORMATION VOLUME FACTOR — USED IN CALCULATING RECOVERABLE OIL	1.18
PRODUCTIVE CAPACITY — PRODUCTIVE FEET X AVERAGE PERMEABILITY IN MILLIDARCYS	264
RECOVERABLE OIL BY WATER DRIVE — BBLS. PER ACRE FOOT	574
RECOVERABLE OIL BY GAS EXPANSION — BBLS. PER ACRE FOOT	344*

*From original bottom hole pressure to zero