

34-215-34w

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

December 5, 1950

The Shallow Water Refining Company
114 West Pine
Garden City, Kansas

Attention: Mr. Maurice L. Brown

Subject: Core Analysis
Aeilts No. 3 Well
Nunn Field
Finney County, Kansas

Gentlemen:

Limestone cores obtained from the Aeilts No. 3 well were logged, sampled and quick-frozen by a representative of The Shallow Water Refining Company and shipped to Oklahoma City for analysis. Data from the analysis are given in tabular and graphical form on the accompanying Coregraph. Three separate horizons are represented by the samples.

The Marmaton zone, sampled between 4307 and 4315 feet, is found to be oil productive where permeable. The permeability is fairly good in two separate lenses and with the aid of acid should make a fairly productive zone, although limited in reserves. A summary and estimates of recovery for this zone are presented on page one of the report.

The Mississippian lime was sampled between 4643 and 4652 feet and is interpreted to be oil productive where permeable. A section of seven feet appears to be productive and a satisfactory, though limited reserve, completion can be anticipated in this interval.

Additional oil productive lime formation was submitted for the interval, 4724 through 4727 feet. This section is highly permeable and, though limited in thickness, can be expected to be prolific in production.

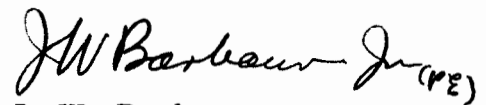
A summary of each of the zones is given on page one of the report and estimates of recovery are prepared based on assumed reservoir fluid

characteristics. These estimates are presented in two increments, that to be derived by solution gas drive and the additional oil to be recovered if an effective efficient water drive is present.

We are pleased to have been of service.

Very truly yours,

Core Laboratories, Inc.



J. W. Barbour, Jr.,
District Engineer

JWB:aa

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS

Page 1 of 1File OCL-486Well Aeilts No. 3

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

CORE SUMMARY

FORMATION NAME	Marmaton	Mississippian	Mississippian	
DEPTH, FEET	4308.0-4315.0	4644.0-4651.0	4724.0-4727.0	
% CORE RECOVERY	100	100	100	
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	5.0	7.0	3.0	
AVERAGE PERMEABILITY MILLIDARCYS	38	23	251	
CAPACITY — AVERAGE PERMEABILITY X FEET PRODUCTIVE FORMATION	190	161	753	
AVERAGE POROSITY, PERCENT	17.8	9.5	10.1	
AVERAGE RESIDUAL OIL SATURATION, % PORE SPACE	13.2	15.2	12.9	
GRAVITY OF OIL, °A.P.I.	42	38	38	
AVERAGE TOTAL WATER SATURATION, % PORE SPACE	50.8	32.4	26.9	
AVERAGE CALCULATED CONNATE WATER SATURATION, % PORE SPACE	46	32	26.9	
SOLUTION GAS-OIL RATIO, CUBIC FEET PER BARREL (1)	410	490	490	
FORMATION VOLUME FACTOR—VOLUME THAT ONE BARREL OF STOCK TANK OIL OCCUPIES IN RESERVOIR (1)	1.26	1.29	1.29	

CALCULATED RECOVERABLE OIL { Prediction dependent upon complete isolation of each division. Structural position of well, total permeable thickness of oil zone and drainage area of well should be considered.

BY NATURAL OR GAS EXPANSION, BBLs. PER ACRE FOOT (2)	164	99	111	
INCREASE DUE TO WATER DRIVE, BBLs. PER ACRE FOOT	246	177	232	
TOTAL AFTER COMPLETE WATER DRIVE, BBLs. PER ACRE FOOT (3)	410	276	343	

Core Laboratories, Inc.

NOTE:

(*) REFER TO ATTACHED LETTER.

(1) REDUCTION IN PRESSURE FROM estimated SATURATION PRESSURE TO ATMOSPHERIC PRESSURE.

(2) AFTER REDUCTION FROM ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.

(3) RESERVOIR PRESSURE MAINTAINED BY WATER DRIVE OR ABOVE estimated ORIGINAL SATURATION PRESSURE.

(4) NO ESTIMATE FOR GAS PHASE RESERVOIRS.



J. W. Barbour, Jr.

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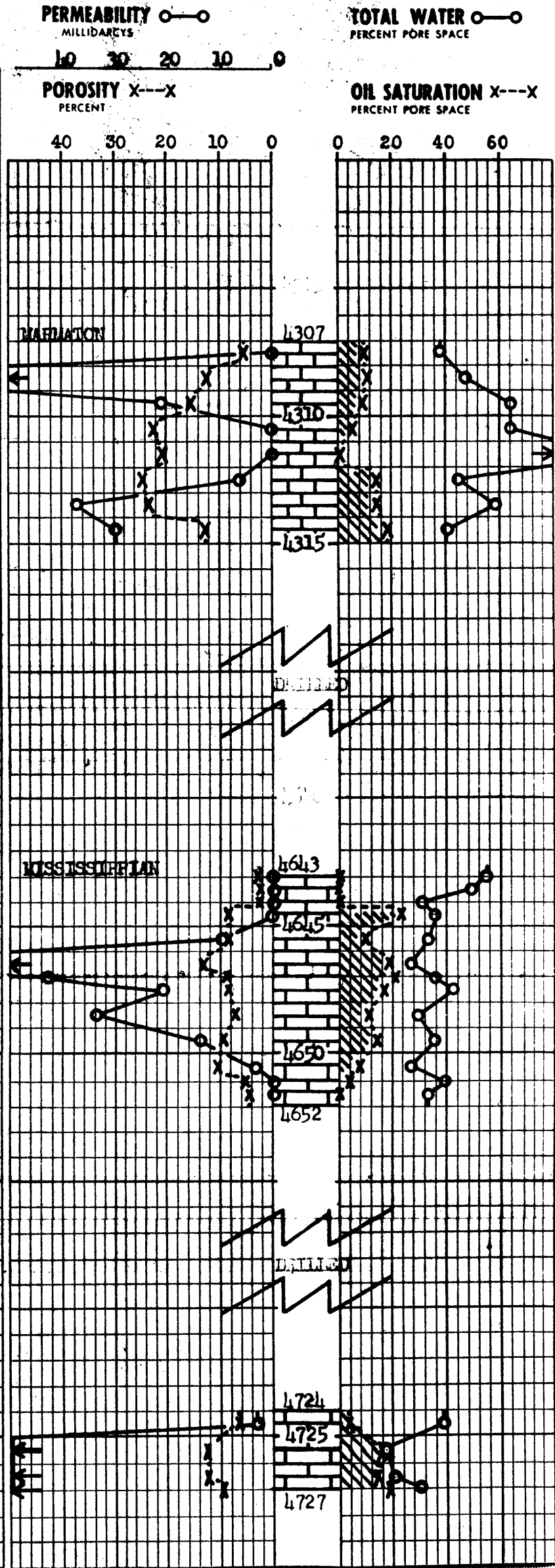
COMPANY	THE SHALLOW WATER REFINING CO.	DATE	11/17/50-11/30/50	FILE	OGL-486 WC
WELL	AKELTS # 3	CORES	DIAMOND	ANALYSTS	WILSHUSEN
FIELD	NINNY	FORMATION	AS NOTED	ELEVATION	2955' GL
COUNTY	FINNEY	DRIG. FLUID	WATER BASE	LOCATION	Q 3E NW
STATE	KANSAS	REMARKS	SERVICE # 3		SEC. 34-21S-34W

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CORE ANALYSIS AND
INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY %	RESIDUAL LIQUID SATURATION % PORE SPACE		PROBABLE PROD.
				OIL	TOTAL WATER	
1	1307.5	0.0	5.5	9.1	38.2	
2	08.5	98	12.5	11.2	47.2	OIL
3	09.5	21	15.3	8.5	64.0	OIL
4	10.5	0.0	22.8	5.3	64.1	
5	11.5	0.0	21.0	0.0	87.3	
6	12.5	6.1	21.8	11.1	144.4	OIL
7	13.5	37	23.6	11.4	58.1	OIL
8	14.5	30	12.9	17.8	40.3	OIL
9	1613.0	0.0	3.7	0.0	51.1	
10	13.5	0.0	2.7	0.0	18.2	
11	14.0	0.0	2.1	0.0	30.4	
12	14.5	0.2	8.8	23.9	35.2	OIL
13	15.5	10	8.2	9.8	32.9	OIL
14	16.5	55	13.8	18.8	26.8	OIL
15	17.0	13	8.8	28.3	42.8	OIL
16	17.5	21	8.5	16.5	41.2	OIL
17	18.5	34	7.2	11.1	29.2	OIL
18	19.5	14	9.8	13.3	35.7	OIL
19	50.5	3.3	10.5	7.6	26.7	OIL
20	51.0	0.0	5.3	3.8	39.6	
21	51.5	0.0	4.6	0.0	32.7	
22	1724.5	2.9	6.4	3.1	39.0	OIL
23	25.5	110	12.5	15.2	16.8	OIL
24	26.5	332	12.1	14.1	20.7	OIL
25	27.0	259	9.4	19.2	30.9	OIL

COMPLETION COREGRAPH



51. 2555'

Heater	3762	-801
Leaving-K.L.	3782	-821
Monroeton	4261	-1300
Mississippi	4623	-1662
Mississippi Line	4639	-1678
Total Depth	4727	

Massachusetts

Core #1 4297 - 4327

4307 1/2 - 4314 3/4

4332 - 4337

4365 - 4370

4381 - 4388

4409 - 4415

4446 - 4452

4448 - 4455

4461 - 4468

Limestone

Shale Limestone

Finely x l. Limestone

oolitic, finely x l.

finely x l. dol. Limestone

Medium x l. Limestone

oolitic x l. dol.

oolitic finely x l. Limestone

Core #2 4637 - 4657

4539 - 4540

4540 - 4542

4546 1/2 - 4549 1/2

4555 - 4556

4556 - 4557

4578 - 4579

1 in to dense

impure finely x l. Limestone

finely x l. to dense

thin. Limestone in dense Limestone

dark gray - gray green dol.

finely x l. to dense dol. Limestone

Mississippi

Core #3

4618 - 4641

4623 - 4625

4640 - 4641

finely x l. glauconitic dol.

stronger Limestone and mud, more angular chert

Core #4 4644 - 4689

4641 - 4641 1/2

4641 1/2 - 4649 3/4

4650 - 4650 1/2

4680 - 4689

buff, finely x l.

oolitic, fine point porosity

finely x l., dolomitic Limestone

finely x l., slightly oolitic

Gobleman 8-A

C/SW-NE Sec. 34, T. 21S., R. 34W.

Cored in Mountain from 4300. - 4309.5'

2 Boxes

E1. 2948'

Herington	2502	453
Winfield	2560	395
Towanda	2618	337
FT. Riley	2649	306
B/Flomine	2736	219
W. refund	2793	162
Nevo	2968	-13
Navaho	3048	-93
Galvanee ?	3086	-131
Pennsylvanian	3220	-265
Tadus	3320	-365
Europaria	3559	-404
Topcha	3500	-545
Keckner	3751	-796
Lansing - K.G.	3769	-814
Marionston	4251	-1293
Mississippi	4629	-1674
Mississippi Line	4633	-1678
T.D.	4731	

#3 AERILTS CONTINUED.

Case #5 4689 - 4727

4723 1/2 - 4727

finally x line for

The geological report on
the #3 Aerlts has been
included with the #3
Aerlts file - please see that
file.

From the Desk of—

W. J. EBANKS, JR.

Cole seems to be
Pennsylvanian, not
Miss., as reported.
check?

13. Shallow Water

C SE NW 34-21S-34W

#3 Aeilts

Mississippian 4620-4682

Core Available In: 10 Six-Foot Boxes

Condition: Whole Core

Coverage: Incomplete

Available Footage (By Box)

4620-25

4625-30

4630-35

4635-58 Incomplete

4658-64 Incomplete

4664-70 Incomplete

4670-72

4672-77

4677-80

4680-82

NOTES: 13 samples (for ϕ , k, Srw, Sro) taken from 4643'-4651.5'
probably account for part of missing intervals.

Shallow water, Refg. Co.
#3 Acilts, CSE NW
34-21-34w

T.D. - 4727
Elev. - 2958.

Top Miss.

Miss. Ls. ?

T.D. - 4727