

CORE ANALYSIS REPORT
FOR
A. D. ALLISON
TURNER NO. 3 WELL
EL DORADO FIELD
BUTLER COUNTY, KANSAS

CORE LABORATORIES. INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

October 23, 1958

REPLY TO
707 MID-CONTINENT BLDG.
TULSA, OKLAHOMA

A. D. Allison
3212 East Kellogg
Wichita, Kansas

Subject: Core Analysis
Turner No. 3 Well
El Dorado Field
Butler County, Kansas

Gentlemen:

Diamond coring equipment and water base mud were used to core the interval, 2410 to 2461 feet, in the Turner No. 3. An engineer of Core Laboratories, Inc. selected samples of recovered formation for analysis as directed by a representative of A. D. Allison. These samples were quick-frozen to preserve fluid content and were transported to the Wichita laboratory. The results of the analysis are shown in graphical form on the accompanying Completion Coregraph and in tabular form on page one.

Simpson formation from 2410 to 2434 feet exhibits favorable residual fluid saturations and is interpreted to be capable of oil production where permeability equals or exceeds 0.1 millidarcy. The 22 productive feet in this zone have an average permeability of 65 millidarcys and a total observed natural productive capacity of 1430 millidarcy-feet, considered adequate to support satisfactory rates of flow without the necessity for major treatment. The measured porosity averages 14.1 per cent and the connate water saturation, as estimated from capillary pressure data for this field, averages 31 per cent of pore space.

Estimates of recoverable oil have been calculated for the Simpson formation interval, 2410 to 2434 feet, using observed and estimated core analysis data for the 22 productive feet in conjunction with estimated reservoir fluid characteristics considered applicable. These estimates are

A. D. Allison
Turner No. 3 Well

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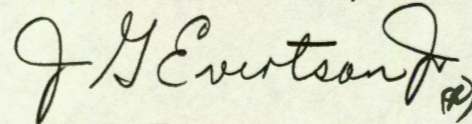
presented on page two of this report and are subject, in all respects, to the conditions set forth in the body of and in the footnotes to the summary page. These recoverable oil estimates are theoretical maximum values which have not been discounted for past production or for the economic limiting factors affecting ultimate recovery.

From 2434 to 2440 feet, formation exhibits low permeability in association with somewhat erratic residual fluid saturations. This zone is considered to be of little productive importance and it is respectfully suggested that it be excluded from the completed interval.

Thank you for the opportunity to be of service. We trust that this report will assist the preliminary evaluation of the Simpson formation analyzed from the Turner No. 3.

Very truly yours,

Core Laboratories, Inc.



J. G. Evertson, Jr.,
District Manager

JGE:JDJ:sp

7 cc. - Addressee

1 cc. - Mr. Delbert Costa
Wichita, Kansas

CORE ANALYSIS RESULTS

Company A. D. Allison Formation Simpson File CP-10-164 FC
 Well Turner No. 3 Core Type Diamond Date Report 10-23-58
 Field El Dorado Drilling Fluid Water Base Mud Analysts DWE - THC
 County Butler State Kansas Elev. 1309' DF Location SE SE NW Sec. 16-26S-4E

Lithological Abbreviations

SAND - SD DOLOMITE - DOL ANHYDRITE - ANHY SANDY - SDY FINE - FN CRYSTALLINE - XLN BROWN - BRN FRACTURED - FRAC SLIGHTLY - SL/
 SHALE - SH CHERT - CH CONGLOMERATE - CONG SHALY - SHY MEDIUM - MED GRAIN - GRN GRAY - GY LAMINATION - LAM VERY - V/
 LIME - LM GYPSUM - GYP FOSSILIFEROUS - FOSS LIMY - LMY COARSE - CSE GRANULAR - GRNL VUGGY - VGY STYLOLITIC - STY WITH - W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER	
1	2410-11	0.6	9.2	20.6	47.8	Sd, fn grn, dk gy, sl/qtz
2	11-12	4.8	12.5	20.0	36.0	Sd, fn grn, dk gy, sl/qtz
3	12-13	1.1	13.5	31.8	33.3	Sd, fn grn, dk gy, sl/qtz
4	13-14	<0.1	4.1	0.0	41.5	Sd, fn grn, white
5	14-15	<0.1	4.1	0.0	75.6	Sd, fn grn, white, sl/shy
6	15-16	0.9	8.7	42.5	27.6	Sd, fn grn, brn, pyr
7	16-17	10	8.7	29.8	37.9	Sd, fn grn, tn
8	17-18	21	10.1	21.8	38.6	Sd, fn grn, tn
9	18-19	36	11.8	27.1	47.5	Sd, fn grn, brn, sl/pyr
10	19-20	32	11.5	26.1	45.2	Sd, fn grn, brn, sl/pyr
11	20-21	85	14.6	30.8	44.5	Sd, fn grn, brn, sl/pyr
12	21-22	90	12.8	28.1	43.7	Sd, fn grn, brn
13	22-23	212	18.2	20.9	57.2	Sd, fn grn, tn, sl/pyr
14	23-24	7.7	13.7	25.5	46.0	Sd, fn grn, tn, sl/pyr, qtz
15	24-25	48	14.3	23.1	46.8	Sd, fn grn, tn, sl/pyr
16	25-26	82	15.8	22.1	50.0	Sd, fn grn, tn, sl/pyr
17	26-27	48	15.8	23.4	41.7	Sd, fn grn, tn, sl/pyr
18	27-28	9.3	11.5	17.4	40.8	Sd, fn grn, vert frac, qtz, sl/pyr
19	28-29	43	17.3	20.2	42.7	Sd, fn grn, tn, pyr
20	29-30	69	15.1	24.5	43.0	Sd, fn grn, tn, pyr
21	30-31	28	11.0	30.9	27.3	Sd, fn grn, tn, pyr
22	31-32	311	23.3	13.8	52.8	Sd, fn grn, fri, dk gy
23	32-33	199	21.1	20.9	49.4	Sd, fn grn, fri, dk gy
24	33-34	96	20.2	23.2	40.0	Sd, fn grn, fri, dk gy
25	34-35	2.5	19.4	5.1	61.4	Sd, v/shy, green
26	35-36	1.5	17.6	11.9	63.6	Sd, v/shy, green
27	36-37	0.5	18.3	32.7	44.2	Sd, shy, v/fn grn
	37-38					Sd, v/shy, no show
28	38-39	0.1	18.2	20.3	62.6	Sd, v/shy, v/fn grn
29	39-40	0.3	18.9	21.1	61.3	Sd, v/shy, v/fn grn
	40-49					Sd, v/shy, gy-green, sl/qtz
	2449-61					Sd, v/shy, no show

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

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Well Turner No. 3

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Simpson 2410.0-2434.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	24.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	42.7
FEET OF CORE INCLUDED IN AVERAGES	22.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	31
AVERAGE PERMEABILITY: MILLIDARCYB	65	OIL GRAVITY: °API (e)	39
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	1430	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	160
AVERAGE POROSITY: PER CENT	14.1	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.14
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	24.8	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	662

Calculated maximum solution gas drive recovery is 163 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 391 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYB		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-FEET		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is _____ barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is _____ barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

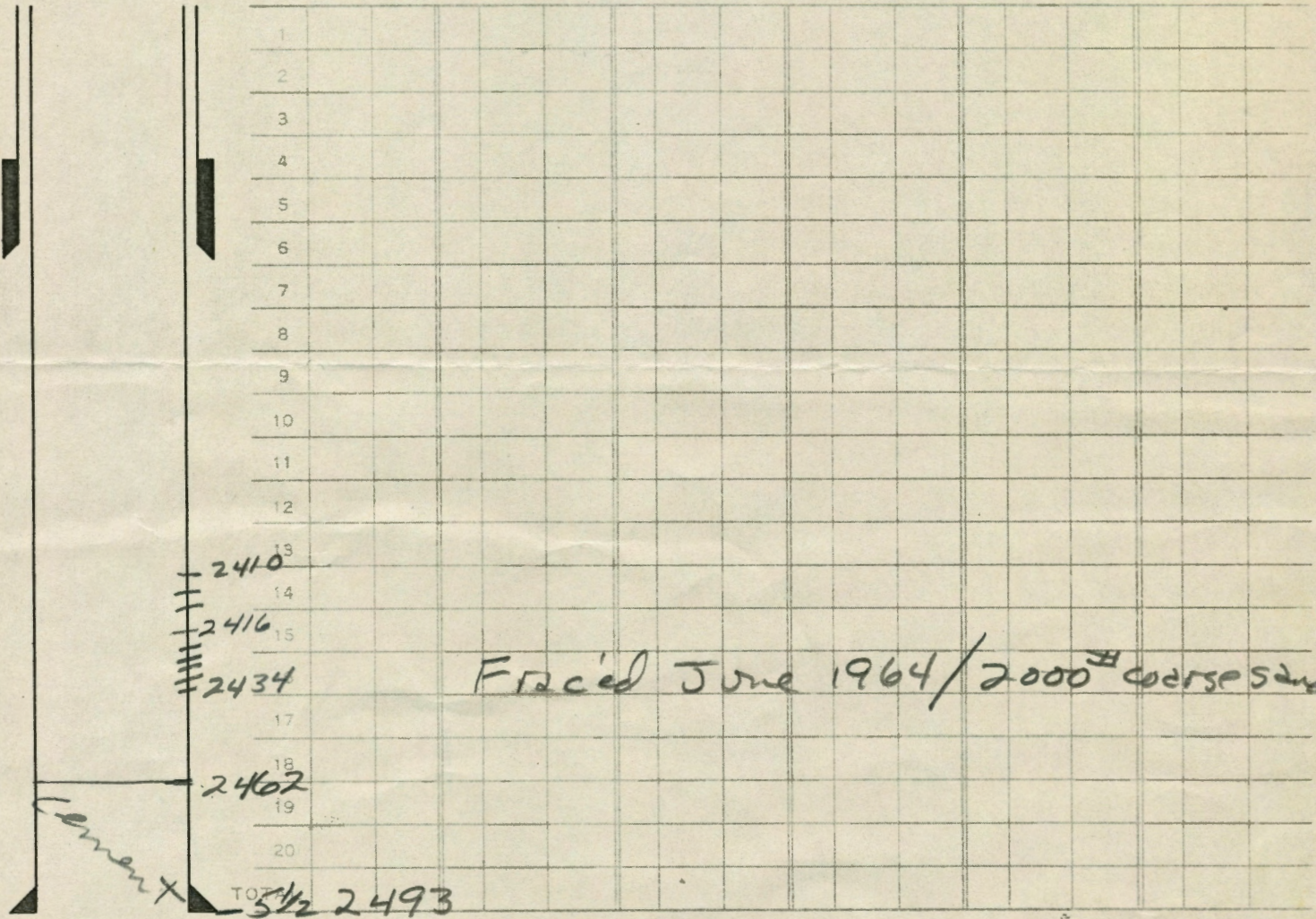
(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc., and its officers and employees assume no responsibility and make no warranty or representation as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

THINK IT OUT! WRITE IT OUT!

DATE _____ WELL NO. 3 LEASE TURNER FIELD Berndsen

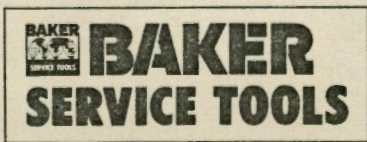


TUBING SIZE AND CAPACITY

SIZE	WEIGHT (LB/FT)	ID	BBL/FT
1 1/2	2.90	1.810	0.0025
2 1/16	3.40	1.751	0.0030
2 3/8	4.70	1.995	0.0039
2 1/2	6.40	2.441	0.0058
2 1/2	8.60	2.259	0.0050
3	7.70	2.943	0.0091
3	9.30	2.867	0.0087
3	10.20	2.797	0.0083
3	12.95	2.625	0.0074
3 1/2	9.50	3.548	0.0122
3 1/2	11.00	3.476	0.0117
4	12.60	3.958	0.0152

CASING SIZE AND CAPACITY

OD	WEIGHT (LB/FT)	ID	BBL/FT	OD	WEIGHT (LB/FT)	ID	BBL/FT
4 1/2	9.50	4.090	0.0163	5 1/2	17.00	4.892	0.0232
4 1/2	10.50	4.052	0.0159	5 1/2	20.00	4.778	0.0222
4 1/2	11.60	4.000	0.0155	5 1/2	23.00	4.670	0.0212
4 1/2	12.75	3.953	0.0152	7	17.00	6.538	0.0415
4 1/2	13.50	3.920	0.0149	7	20.00	6.456	0.0405
4 1/2	15.10	3.826	0.0142	7	23.00	6.366	0.0394
4 3/4	16.00	4.082	0.0163	7	24.00	6.336	0.0390
5	13.00	4.494	0.0196	7	26.00	6.276	0.0383
5	15.00	4.408	0.0189	7	29.00	6.184	0.0371
5	18.00	4.276	0.0178	7	30.00	6.154	0.0368
5	21.00	4.154	0.0168	7	32.00	6.094	0.0361
5 1/2	14.00	5.012	0.0244	7	35.00	6.004	0.0350
5 1/2	15.00	4.974	0.0240	7	38.00	5.920	0.0340
5 1/2	15.50	4.950	0.0238				





CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY A. D. ALLISON DATE ON 10-15-58 FILE NO. GP-10-164
 WELL TURNER NO. 3 DATE OFF 10-16-58 ENGRS. EASTERWOOD
 FIELD EL DORADO FORMATION SIMPSON ELEV. 1309' DF
 COUNTY BUTLER STATE KANSAS DRLG. FLD. WATER BASE MUD CORES DIAMOND
 LOCATION SE SE NW SEC 16-26S-4E REMARKS SAMPLED BY CLI AS DIRECTED

COMPLETION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

SAND	LIMESTONE	CONGLOMERATE	CHERT
SHALE	DOLOMITE		

VERTICAL SCALE: 5" = 100'

