CORE ANALYSIS REPORT

FOR

MURFIN DRILLING COMPANY, INC.

M.V. ANDERSON NO. 1
TRAPP FIELD
RUSSELL COUNTY, KANSAS

7 - 15-13W

15-167-23207

Core Lab
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November 6, 2001

KANSAS GEOLOGICAL SURVEY
University of Kansas
Campus West
1930 Constant Avenue
Lawrence, Kansas 66047

File No.: 57181-18423
Subject: Core Analysis
MURFIN DRILLING COMPANY, INC.
M.V. Anderson No. 1
Trapp Field
Russell County, Kansas

Gentlemen:

The subject well was cored using diamond coring equipment and water base mud to obtain 4 inch diameter cores from 2972 to 3024 feet from the Lansing-Kansas City formation.

Core analysis data is presented in tabular and graphical form for your convenience. A porosity vs. permeability plot was prepared for statistical evaluation. Core analysis data is contained on a 3 1/2 inch computer diskette.

We trust these data will be useful in the evaluation of your property and thank you for the opportunity of serving you.

Very truly yours,

CORE LABORATORIES, INC.

John Sebian
Laboratory Supervisor

JS/ym

MURFIN DRILLING COMPANY, INC.
M.V. Anderson No 1
File No. 57181-18423
Procedural Page

The cores were preserved shipped to Midland by Kansas geological survey.

Core analysis was made on selected intervals requested on one inch diameter plug samples.

Fluid removal and saturations were determined using a Dean Stark/ gas solvent extraction method.

Plug direct grain volume measurement was made using Boyle's law helium expansion. Bulk volume was measured by Archimedes Principle on samples after cleaning. Porosity was calculated using bulk volume and grain volume measurements.

$$\text{Porosity} = \frac{\text{Bulk Vol.} - \text{Grain Vol.}}{\text{Bulk Vol.}} \times 100$$

Steady State Air Permeability was measured in a horizontal direction while the core was confined in a Hassler rubber sleeve.

The core plugs will be returned to the Kansas Geological Survey.

CORE LABORATORIES

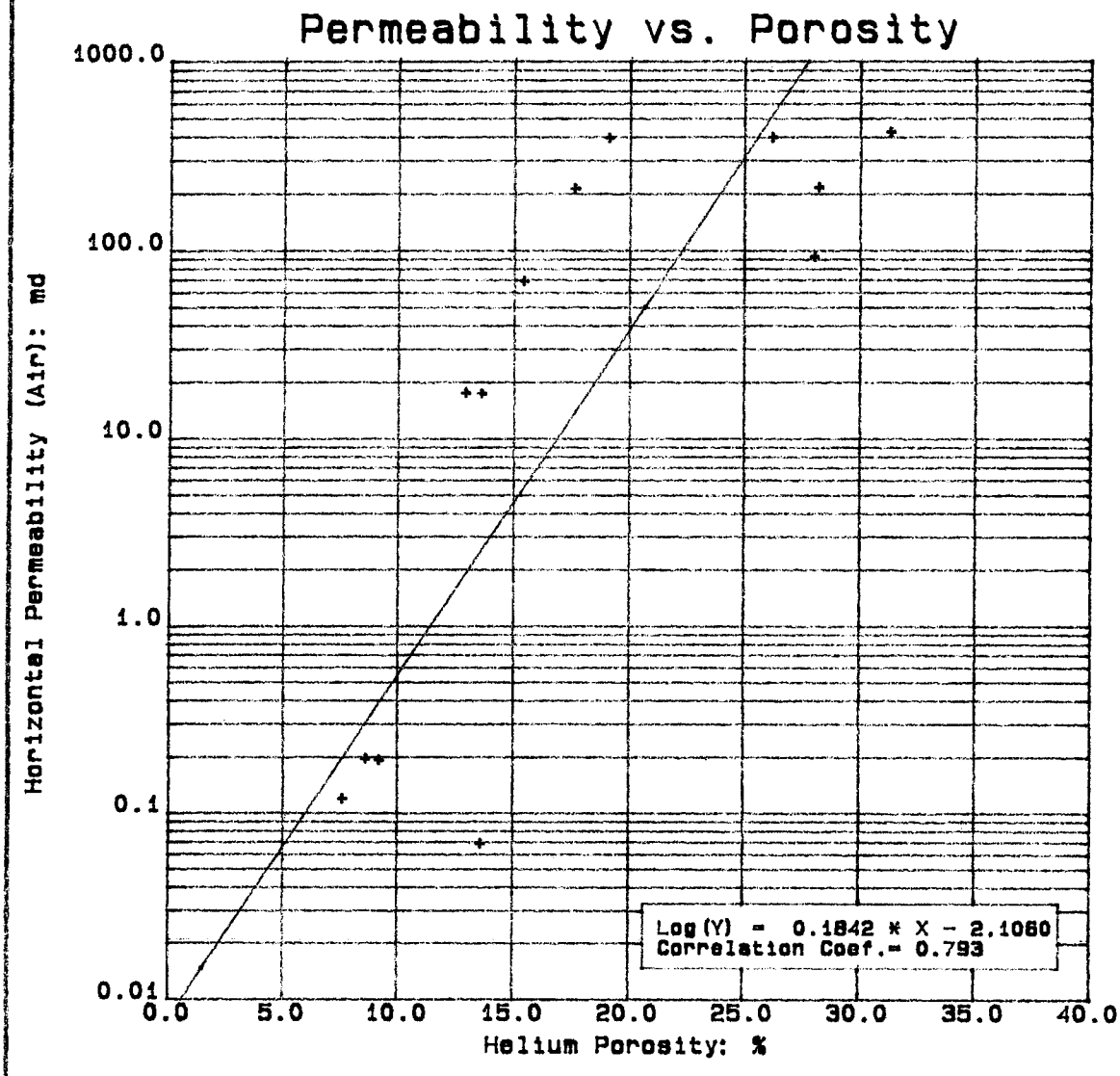
Company : MURFIN DRILLING COMPANY, INC.
Well : M.V. ANDERSON NO. 1
Location : 1650' FNL & 330' FEL, SEC. 7, T-15-S, R-12-W
Co,State : RUSSELL COUNTY, KANSAS

Field : TRAPP
Formation : LANSING-KANSAS CITY
Coring Fluid : WATER BASE MUD
Elevation : 1785' KB

File No.: 57181-18423
Date : 11-5-01
API No. : 15-167-23207
Analysts: SEBIAN

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH ft	PERMEABILITY (HORIZONTAL) Kair md	POROSITY (HELIUM) %	SATURATION (PORE VOLUME) OIL %	SATURATION (PORE VOLUME) WATER %	GRAIN DENSITY gm/cc	DESCRIPTION
1	2972.9	17.1	13.6	19.4	49.0	2.79	Lim, sli/dol, sli/pp, ool, 75% dull yel flu
2	2982.8	0.07	13.6	4.0	13.8	2.72	Lim, pp, ool, 10% dull yel flu
3	2983.6	397.	26.2	5.4	50.8	2.73	Lim, pp, ool, 30% dull yel flu
4	2985.0	214.	28.2	12.0	44.3	2.72	Lim, pp, ool, 90% dull yel flu
5	2985.8	423.	31.3	10.8	39.2	2.73	Lim, pp, ool, 85% dull yel flu
6	2986.1	91.9	28.0	8.9	29.7	2.72	Lim, pp, ool, 70% dull yel flu
7	2987.4	68.2	15.4	14.4	56.2	2.73	Lim, sli/pyrt, pp, ool, 50% dull yel flu
8	2988.5	212.	17.6	10.4	58.1	2.73	Lim, sli/pyrt, pp, ool, 50% dull yel flu
9	2989.5	394.	19.1	12.1	59.0	2.72	Lim, pp, ool, 35% dull yel flu
10	2990.7	17.3	12.9	9.8	54.1	2.72	Lim, sli/pyrt, pp, ool, 25% dull yel flu
11	2991.8	0.19	8.6	5.4	69.7	2.71	Lim, sli/pp, styl, ool, 40% dull yel flu
12	2992.7	0.19	9.2	7.4	69.6	2.71	Lim, sh lam, sli/pp, ool, 65% dull yel flu
13	2994.7	0.12	7.6	4.7	63.6	2.71	Lim, sli/pp, sli/ool, 10% dull yel flu
14	3023.7	4.31	11.6	30.5	41.4	2.71	Lim, sli/pp, sli/ool, 80% gold flu



MURFIN DRILLING COMPANY, INC.
M.V. ANDERSON NO. 1
TRAPP FIELD

LANSING-KANSAS CITY (2972.4-3023.7 feet)

Core Laboratories 11-5-01

- LEGEND -
LANSING-KS CTY

CORE LABORATORIES

Company : MURFIN DRILLING COMPANY, INC.
Well : M.V. ANDERSON NO. 1

Field : TRAPP
Formation : LANSING-KS CTY

File No.: 57181-18423
Date : 11-5-01

TABLE I

SUMMARY OF CORE DATA

ZONE AND CUTOFF DATA

ZONE:
- Identification -------- LANSING-KS CTY
- Top Depth ---------- 2972.9 ft
- Bottom Depth ---------- 3023.7 ft
- Number of Samples -------- 13

DATA TYPE:
- Porosity ---------- (HELIUM)
- Permeability ------- (HORIZONTAL) Kair

CUTOFFS:

Porosity (Minimum) -------	0.0	%
Porosity (Maximum) -------	100.0	%
Permeability (Minimum) ---	0.0100	md
Permeability (Maximum) ---	1000.	md
Water Saturation (Maximum)	100.0	%
Oil Saturation (Minimum) -	0.0	%
Grain Density (Minimum) --	2.00	gm/cc
Grain Density (Maximum) --	3.00	gm/cc
Lithology Excluded -------	NONE	

CHARACTERISTICS REMAINING AFTER CUTOFFS

ZONE:

Number of Samples -----	13	
Thickness Represented -	13.0	ft

POROSITY:

Storage Capacity ------	231.3	ϕ-ft
Arithmetic Average ----	17.8	%
Minimum ----------	7.6	%
Maximum ----------	31.3	%
Median ----------	15.4	%
Standard Deviation ----	±8.1	%

GRAIN DENSITY:

Arithmetic Average ----	2.73	gm/cc
Minimum ----------	2.71	gm/cc
Maximum ----------	2.79	gm/cc
Median ----------	2.72	gm/cc
Standard Deviation ----	±0.02	gm/cc

PERMEABILITY:

Flow Capacity ---------	1836.0	md-ft
Arithmetic Average ----	141.	md
Geometric Average -----	14.8	md
Harmonic Average ------	0.39	md
Minimum ----------	0.07	md
Maximum ----------	423.	md
Median ----------	68.2	md
Standard Dev. (Geom) --	$K \cdot 10^{\pm 1.498}$	md

HETEROGENEITY (Permeability):

Dykstra-Parsons Var. --	0.942	
Lorenz Coefficient ----	0.440	

AVERAGE SATURATIONS (Pore Volume):

Oil ----------	9.9	%
Water ----------	47.2	%

CORE LABORATORIES

LITHOLOGICAL ABBREVIATIONS

Anhy, anhy	Anhydrite (-ic)
Ark, ark	arkos (-ic)
bnd	band (-ed)
brec	breccia
Calc, calc	calcite (-ic)
carb	carbonaceous
crs gr	course grained
Chk, chky	chalk (-y)
Cht, cht	chert (-y)
Cgl, cgl	conglomerate (-ic)
crs xln	coursely crystalline
dns	dense
Dol, dol	dolomite (-ic)
Frac	randomly oriented fractures
frac	slightly fractured
f gr	fine grained
foss	fossil (-iferous)
f xln	finely crystalline
Gil, gil	gilsonite
Glauc, clauc	glauconite (-itic)
Grt	granite
Gyp, gyp	gypsum (-iferous)
hor frac	perdominantly horizontally fractured
incl	inclusion (-ded)
intbd	interbedded
lam	lamina (-tions,-ated)
Lim, lim	limestone
med gr	medium grain
Mtrx	matrix
NA	interval not analyzed
Nod, nod	nodules (-ar)
Ool, ool	oolite (-itic)
Piso, piso	pisolite (-itic)
pp	pin-point (porosity)
Pyr, pyr	pyrite (-itized, itic)
Sd, sdy	sand (-y)
Shr	solid hydrocarbon residue
sli/	slightly
Sltstn, slty	siltstone, silty
styl	stylolite (-itic)
suc	sucrosic
Su, su	sulphur, sulphurous
TBFA	TOO BROKEN FOR ANALYSIS
Trip, trip	tripolitic
v/	very
vert frac	perdominantly vertically fractured
vug	vuggy
xbd	crossbedded
xln	medium crystalline
xtl	crystal

THE FIRST WORD IN THE DESCIPTION COLUMN OF THE CORE ANALYSIS REPORT DESCIBES THE ROCK TYPE. FOLLOWING ARE ROCK MODIFIERS IN DECREASING ABUNDANCE AND MISCELLANEOUS DESCRIPTIVE TERMS.

DISTRIBUTION OF FINAL REPORTS

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KANSAS GEOLOGICAL SURVEY
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LAWRENCE KS 66047

COMPLETION COREGRAPH

MURFIN DRILLING COMPANY, INC.

M.V. ANDERSON NO. 1

TRAPP FIELD

LANSING-KANSAS CITY (2972.9-3023.7 feet)

Core Laboratories 11-5-01

Vertical Scale
5.00 in = 100.0 ft