

M & M DRILLING, INC.

CORE ANALYSIS REPORT

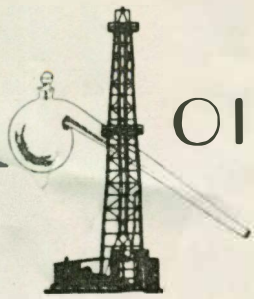
GEORGE ARD LEASE WELL NO. ^{W-1}

ALLEN COUNTY, KANSAS

OILFIELD RESEARCH LABORATORIES

536 N. HIGHLAND

CHANUTE, KANSAS



OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

August 31, 1976

M & M Drilling, Inc.
R. 1
Mound City, Kansas 66056

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary core taken from the George Ard Lease, Well No. 1, Allen County, Kansas, and submitted to our laboratory on August 25, 1976.

This core is from a semi-virgin territory and was sampled by a representative of Oilfield Research Laboratories.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:bl
5 c to Mound City, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

W-1

Company M & M Drilling, Inc. Lease George Ard Well No. X

Location 325' NSL & 475' WEL, SE $\frac{1}{4}$

Section 10 Twp. 26S Rge. 20E County Allen State Kansas

Name of Sand - - - - - Bartlesville

Top of Core - - - - - 692.0

Bottom of Core - - - - - 714.3

Top of Sand - - - - - 692.2

Bottom of Sand - - - - - 713.0

Total Feet of Permeable Sand - - - - - 18.3

Total Feet of Floodable Sand - - - - -

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	6.9	6.9
10 - 20	4.4	11.3
20 - 40	4.5	15.8
40 & above	2.5	18.3

Average Permeability Millidarcys - - - - - 26.1

Average Percent Porosity - - - - - 17.5

Average Percent Oil Saturation - - - - - 35.7

Average Percent Water Saturation - - - - - 53.5

Average Oil Content, Bbls./A. Ft. - - - - - 493.

Total Oil Content, Bbls./Acre - - - - - 9,014.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - -

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - -

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - -

Total Calculated Oil Recovery, Bbls./Acre - - - - -

Packer Setting, Feet - - - - -

Viscosity, Centipoises @ - - - - -

A. P. I. Gravity, degrees @ 60 °F - - - - -

Elevation, Feet - - - - -

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-LOG-

Company M & M Drilling, Inc. Lease George Ard Well No. W-1
X

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
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692.0 - 692.2	- Gray very shaly sandstone.
692.2 - 693.6	- Light brown fine grained sandstone.
693.6 - 695.7	- Gray laminated sandy shale.
695.7 - 699.4	- Light brown fine grained sandstone.
699.4 - 699.8	- Sandy shale.
699.8 - 700.4	- Light brown sandstone.
700.4 - 700.8	- Gray sandy shale.
700.8 - 702.9	- Brown fine grained sandstone.
702.9 - 705.0	- Brown fine grained shaly sandstone.
705.0 - 706.7	- Gray sandy limestone.
706.7 - 710.8	- Brown medium grained sandstone.
710.8 - 711.7	- Light brown shaly sandstone.
711.7 - 713.0	- Dark brown sandstone.
713.0 - 714.3	- Gray shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company M & M Drilling, Inc. Lease George Ard Well No. W-1

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X sd.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	692.5	19.2	32	46	78	477	12.	0.8	0.8	382	9.60
2	693.5	20.3	33	56	89	519	33.	0.6	1.4	311	19.80
3	694.5	11.8	16	78	94	147	0.16	1.4	2.8	206	0.22
4	695.6	12.2	17	76	93	161	1.2	0.7	3.5	113	0.84
5	696.5	17.5	38	57	95	516	17.	1.3	4.8	671	22.10
6	697.5	19.1	40	49	89	593	30.	1.0	5.8	593	30.00
7	698.5	19.2	42	46	88	625	22.	1.4	7.2	875	30.80
8	700.2	17.7	35	54	89	480	12.	0.6	7.8	288	7.20
9	701.5	22.4	33	38	71	573	60.	1.2	9.0	688	72.00
10	702.5	18.6	38	58	96	549	15.	0.9	9.9	494	13.50
11	703.5	20.1	48	48	96	748	6.2	1.1	11.0	823	6.82
12	704.5	17.5	42	52	94	570	0.87	1.0	12.0	570	0.87
13	707.8	14.3	43	52	95	477	3.9	1.8	13.8	859	7.02
14	709.5	20.6	45	47	92	720	28.	1.5	15.3	1,080	42.00
15	710.5	14.8	32	53	85	368	12.	0.8	16.1	294	9.60
16	711.5	15.0	33	63	96	384	2.8	0.9	17.0	346	2.52
17	712.5	18.5	43	47	90	618	156.	1.3	18.3	803	202.80

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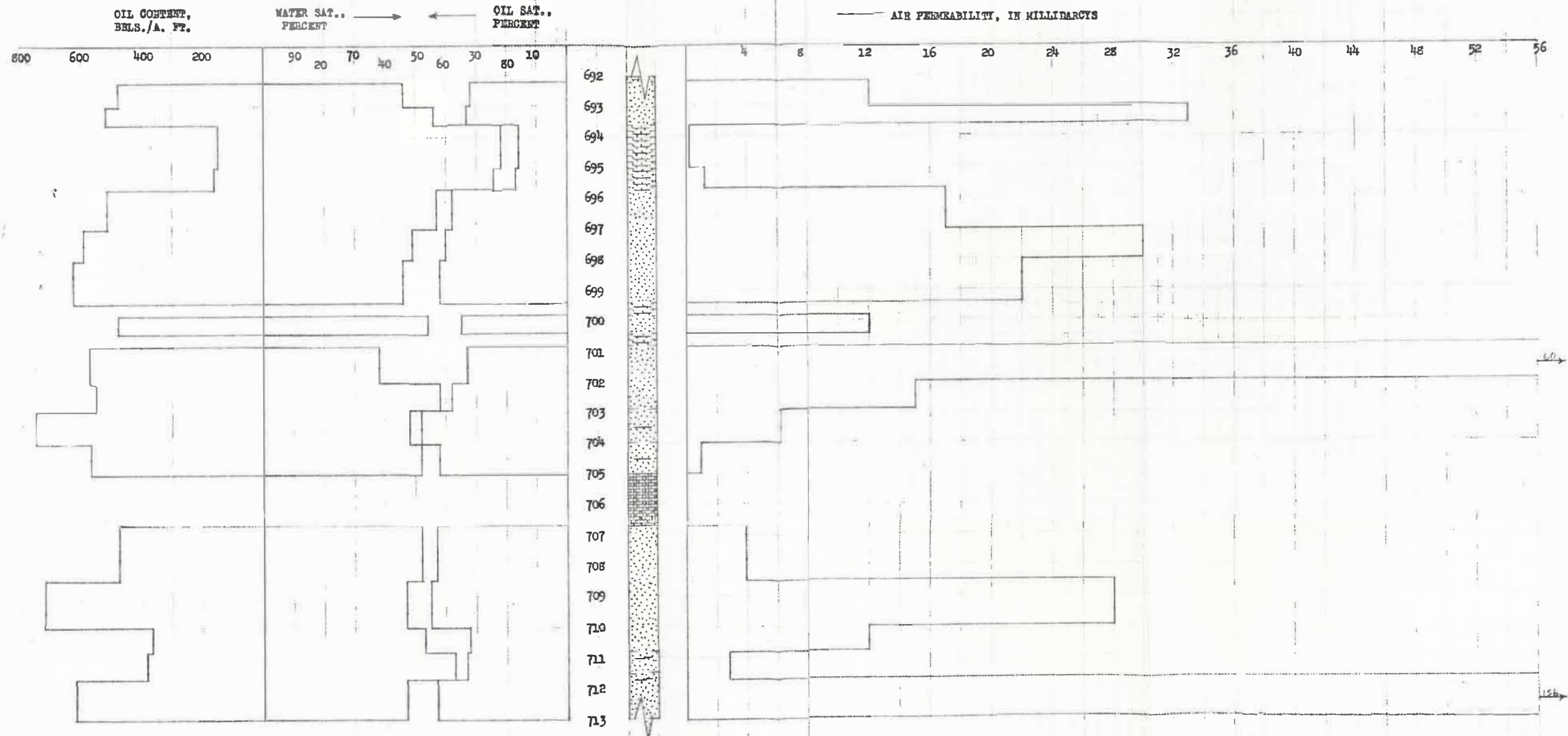
SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company M & M Drilling, Inc. Lease George Ard Well No. W-1

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
692.2 - 695.7	3.5	8.7	30.46
695.7 - 713.0	14.8	30.2	447.23
692.2 - 713.0	18.3	26.1	477.69

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
692.2 - 695.7	3.5	15.0	22.8	66.5	180	630
695.7 - 713.0	14.8	18.1	38.8	50.4	566	8,384
692.2 - 713.0	18.3	17.5	35.7	53.5	493	9,014



KEY:
 SANDSTONE
 SHALY SANDSTONE

SANDY LIMESTONE
 SANDY SHALE

SHALE

M S M DRILLING, INC.
 GEORGE ARD LEASE ALLEN COUNTY, KANSAS WELL NO. 1

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BBLs./A. FT.	TOTAL OIL CONTENT BBLs./ACRE	AVG. AIR PERMEABILITY, MILLIDARCYs
692.2 - 695.7	3.5	15.0	22.5	66.5	180	630	8.7
695.7 - 713.0	14.8	18.1	38.5	50.4	566	8,384	30.2
692.2 - 713.0	18.3	17.5	33.7	53.5	493	9,014	26.1

OILFIELD RESEARCH LABORATORIES
 OMAHA, KANSAS
 AUGUST, 1976.