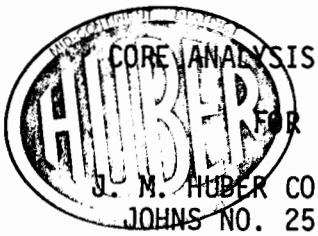


CORE ANALYSIS REPORT

FOR

J. M. HUBER CORPORATION
JOHNS NO. 25-1 WELL
MORTON COUNTY, KANSAS

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
OKLAHOMA CITY, OKLAHOMA

November 21, 1985

REPLY TO
SUITE 133
400 SOUTH VERMONT
OKLAHOMA CITY, OK
73108

J. M. Huber Corporation
7120 I-40 West
Suite 232
Amarillo, Texas 79106

Attn: Mr. Tony Kolodziej

Subject: Core Analysis Data
Johns No. 25-1 Well
Morton County, Kansas
CLI File 3402-12549

Gentlemen:

Cores taken in the subject well in the Morrow formation were received at the Oklahoma City laboratory for special analytical testing described on the Procedure Page.

The accompanying Coregraph presents the Surface Core-Gamma Log and binomially averaged core analysis data in graphical form to aid correlation with downhole electrical surveys.

Tabular presentation of the measured physical properties may be found on pages one and two of this report.

Histograms of porosity and permeability in addition to a graph of permeability versus porosity may be found on pages three and four.

It is a pleasure to have this opportunity of serving you.

Very truly yours,

CORE LABORATORIES, INC.

J. Michael Edwards

J. Michael Edwards
District Manager

JME:jk

8 cc - Addressee
2 cc - Mr. Ed Price
Amoco Production Company
1670 Broadway
Denver, Colorado 80202

J. M. Huber Corporation
Johns No. 25-1 Well
CLI File 3402-12549

Procedure Page

Handling and Analytical Procedures

Diamond coring equipment and water base mud were used to obtain 4.0 inch diameter cores between 4,990.0 and 5,050.0 feet.

The cores were preserved at the well site in a CO_2 atmosphere by CLI personnel.

The cores were transported to Oklahoma City by CLI personnel.

A Core-Gamma Log was recorded for downhole electric log correlation.

Core analysis was made in the intervals requested on right cylinder full diameter samples.

Fluid removal was accomplished using low temperature extraction.

Porosity was determined by Boyle's law method.

Air permeability in two horizontal directions was measured without Klinkenberg correction.

Two sets of slabs were cut for future geological study.

One set of slabs were shipped to:

Amoco Production Company
1670 Broadway
Denver, Colorado 80202

One set of slabs were shipped to:

J. M. Huber Corporation
Suite 232
7120 I-40 West
Amarillo, Texas 79106
Attn: Mr. Tony Kolodziej

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

J. M. HUBER CORPORATION
JOHNS NO. 25-1 WELL

MORTON COUNTY, KANSAS

DATE : 11-20-85
FORMATION : MORROW
DRLG. FLUID: WATER BASE MUD
LOCATION : SEC. 25-31S-41W

FILE NO. : 3402-12549
API NO. :
LABORATORY: OKLAHOMA CITY

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MAXIMUM	PERM 90 DEG	HE POR	OIL% POR	WTR% POR	GRAIN DEN M	DESCRIPTION
	4990.0-4992.0	NO ANALYSIS - SH						
1	4992.0-93.0	31.	30.	14.9	7.4	39.5	2.68	SST GRY CRS PP POORLY SRT SBANG
2	4993.0-94.0	218.	193.	17.0	7.1	43.7	2.66	SST GRY CRS PP POORLY SRT SBRNDD
3	4994.0-95.0	572.	572.	18.1	3.0	57.7	2.65	SST GRY CRS PP POORLY SRT SBRNDD
4	4995.0-96.0	2115.	2077.	19.7	3.0	57.7	2.65	SST GRY CRS PP POORLY SRT SBRNDD
5	4996.0-97.0	1150.	1113.	20.3	4.1	59.5	2.65	SST GRY CRS PP POORLY SRT SBRNDD
6	4997.0-98.0	2403.	2277.	19.1	3.7	61.7	2.65	SST GRY CRS PP POORLY SRT SBRNDD
7	4998.0-99.0	992.	992.	19.2	6.1	53.2	2.65	SST GRY CRS PP POORLY SRT SBRNDD
8	4999.0- 0.0	424.	381.	16.6	6.6	56.0	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
9	5000.0- 1.0	1566.	1518.	18.6	4.5	56.9	2.66	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
10	5001.0- 2.0	275.	263.	16.7	5.2	56.4	2.67	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
11	5002.0- 3.0	1590.	1562.	18.4	11.0	56.8	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
12	5003.0- 4.0	284.	261.	18.0	11.5	51.1	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
13	5004.0- 5.0	1279.	1190.	20.2	8.0	54.2	2.64	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
14	5005.0- 6.0	1233.	1113.	20.0	8.5	53.7	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
15	5006.0- 7.0	1484.	1484.	19.0	8.8	58.5	2.64	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
16	5007.0- 8.0	2423.	2163.	20.6	8.3	57.1	2.64	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
17	5008.0- 9.0	1099.	1069.	19.2	11.1	51.2	2.64	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
18	5009.0-10.0	227.	222.	19.1	14.1	46.7	2.64	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
19	5010.0-11.0	1001.	842.	18.9	16.7	48.4	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
20	5011.0-12.0	225.	216.	19.3	15.7	48.3	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
21	5012.0-13.0	308.	217.	20.1	17.4	47.5	2.65	SST GRY CRS-V/CRS PP POORLY SRT SBRNDD
22	5013.0-14.0	1196.	1059.	22.5	14.2	54.3	2.65	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
23	5014.0-15.0	800.	761.	20.9	19.0	45.4	2.65	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
24	5015.0-16.0	354.	342.	19.2	17.2	47.1	2.64	SST GRY MED-V/CRS PP POORLY SRT SBRNDD

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

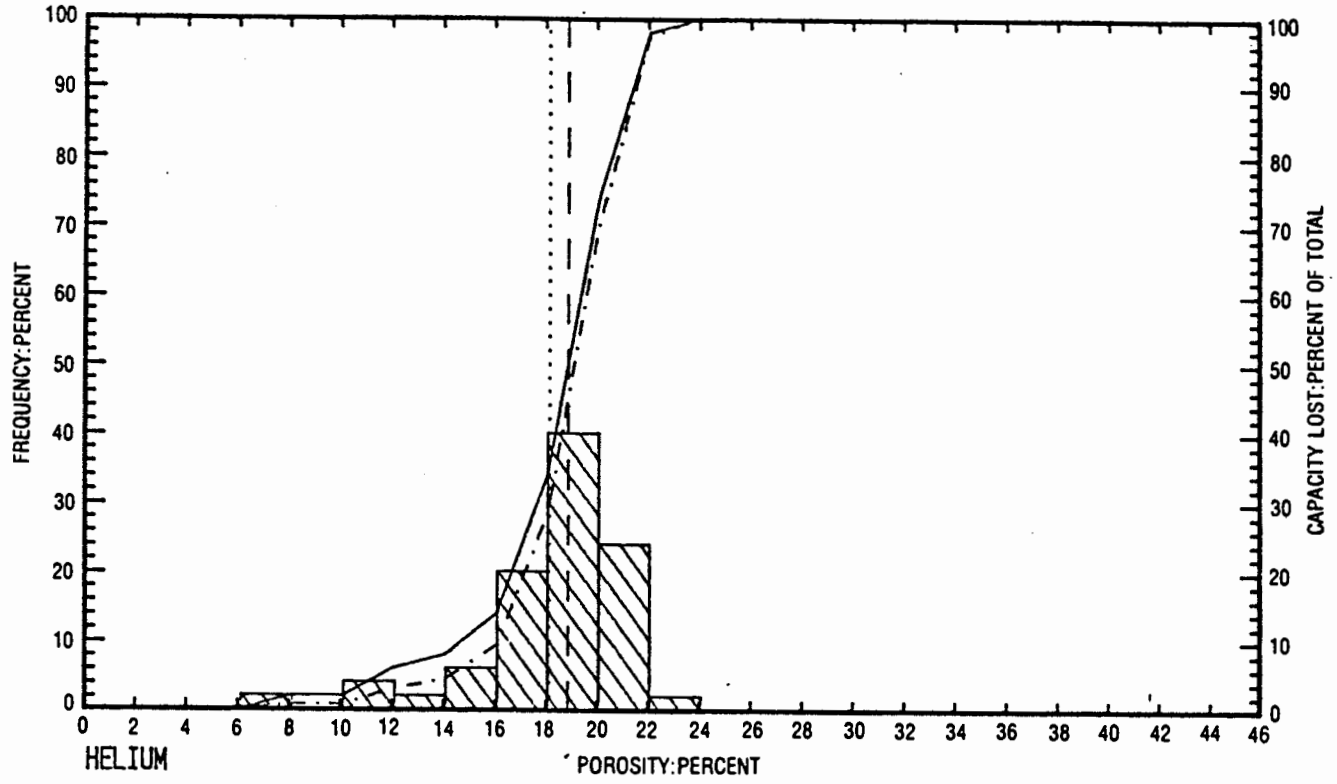
J. M. HUBER CORPORATION
JOHNS NO. 25-1 WELL

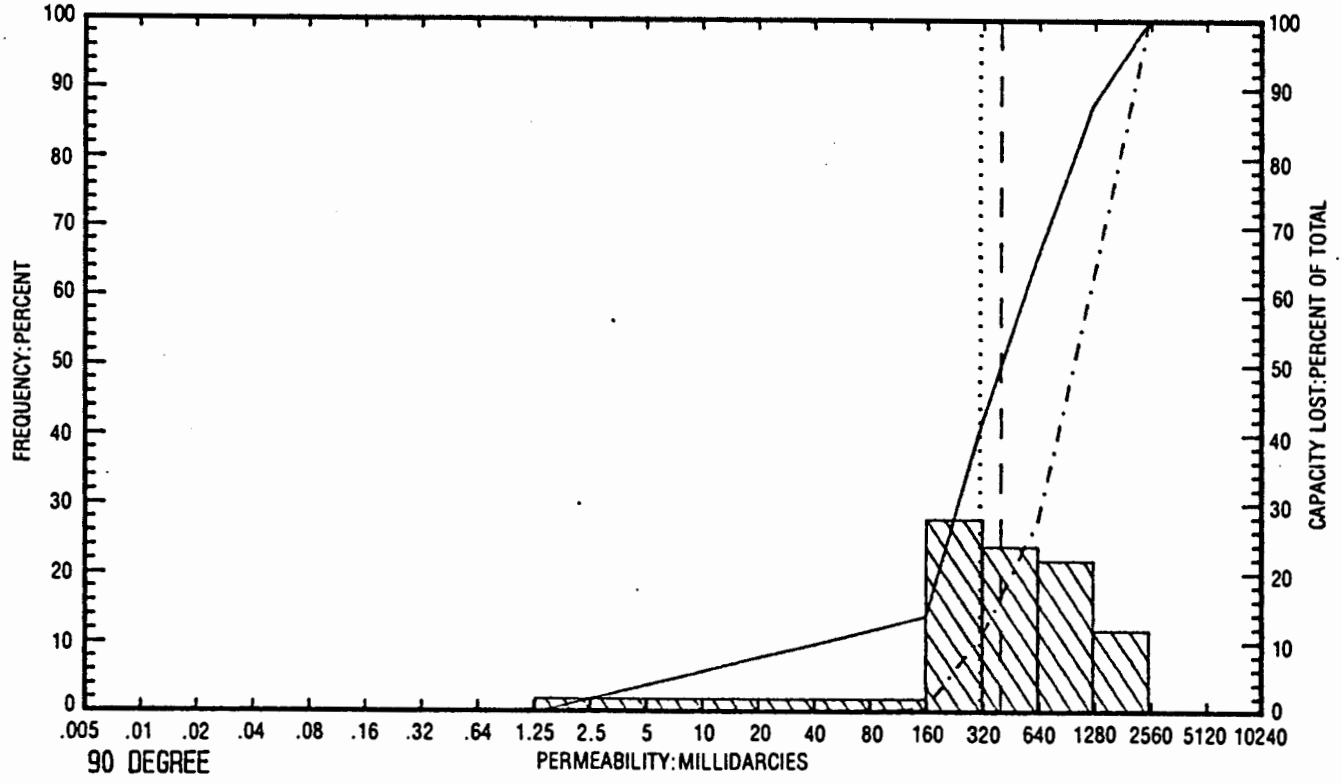
DATE : 11-20-85
FORMATION : MORROW

FILE NO. : 3402-12549
API NO. :

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MAXIMUM	PERM 90 DEG	HE POR	OIL% POR	WTR% POR	GRAIN DEN M	DESCRIPTION
25	5016.0-17.0	513.	462.	21.4	23.3	36.7	2.65	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
26	5017.0-18.0	214.	109.	20.4	24.8	37.4	2.65	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
27	5018.0-19.0	816.	754.	20.4	24.9	32.9	2.64	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
28	5019.0-20.0	1176.	992.	21.3	24.9	34.7	2.64	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
29	5020.0-21.0	572.	492.	20.4	23.5	35.1	2.64	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
30	5021.0-22.0	479.	479.	20.3	22.7	36.1	2.64	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
31	5022.0-23.0	365.	365.	19.7	28.0	30.6	2.66	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
32	5023.0-24.0	369.	369.	18.0	26.6	32.2	2.65	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
33	5024.0-25.0	492.	463.	18.6	20.8	39.7	2.66	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
34	5025.0-26.0	239.	216.	17.9	18.1	42.2	2.66	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
35	5026.0-27.0	245.	234.	19.3	22.4	36.6	2.66	SST GRY MED-V/CRS PP POORLY SRT SBRNDD
36	5027.0-28.0	207.	184.	17.4	22.2	40.4	2.67	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
37	5028.0-29.0	347.	334.	17.6	20.2	41.7	2.67	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
38	5029.0-30.0	257.	256.	17.8	20.8	44.1	2.68	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
39	5030.0-31.0	331.	322.	18.5	22.6	42.0	2.65	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
40	5031.0-32.0	511.	414.	18.1	19.5	45.6	2.67	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
41	5032.0-33.0	192.	175.	17.2	21.4	40.4	2.68	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
42	5033.0-34.0	288.	288.	18.5	22.1	45.2	2.65	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
43	5034.0-35.0	754.	650.	15.8	25.3	42.6	2.65	SST GRY V/CRS-PEB PP POORLY SRT SBRNDD
44	5035.0-36.0		3.0	16.3	30.2	40.5	2.78	SST GRY PEB SH PP POORLY SRT SBRNDD
45	5036.0-37.0	14.	9.1	10.6	31.0	40.3	2.81	SST GRY PEB SH PP POORLY SRT SBRNDD
46	5037.0-38.0	44.	18.	10.7	30.5	38.6	2.74	SST GRY PEB SH PP POORLY SRT SBRNDD
47	5038.0-39.0	170.	166.	14.5	20.2	43.4	2.66	SST GRY PEB SH PP POORLY SRT SBRNDD
48	5039.0-40.0	257.	246.	17.1	22.5	38.9	2.66	SST GRY PEB SH PP POORLY SRT SBRNDD
49	5040.0-41.0	67.	53.	12.1	27.6	28.4	2.69	SST GRY PEB SH PP POORLY SRT SBRNDD
50	5041.0-42.0	1.8	1.7	6.5	22.6	24.2	2.71	SST GRY PEB SH PP POORLY SRT SBRNDD
	5042.0-5050.0	NO ANALYSIS - SH						





PERMEABILITY AND POROSITY HISTOGRAMS

J. M. HUBER CORPORATION
JOHNS NO. 25-1 WELL

MORTON COUNTY, KANSAS

LEGEND

- ARITHMETIC MEAN POROSITY
- GEOMETRIC MEAN PERMEABILITY
- MEDIAN VALUE
- CUMULATIVE FREQUENCY
- CUMULATIVE CAPACITY LOST

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: J. M. HUBER CORPORATION
FIELD :

WELL : JOHNS NO. 25-1 WELL
COUNTY, STATE: MORTON COUNTY, KANSAS

AIR PERMEABILITY : MD. (90 DEGREE) RANGE USED 0.000 TO 2277.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS (FEET) : 4992.0 - 5042.0 INTERVAL LENGTH : 50.0
FEET ANALYZED IN ZONE : 50.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY	PERMEABILITY AVERAGES		
AVERAGE	ARITHMETIC	HARMONIC	GEOMETRIC
18.0	599.	40.	311.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: J. M. HUBER CORPORATION
FIELD :

WELL : JOHNS NO. 25-1 WELL
COUNTY, STATE: MORTON COUNTY, KANSAS

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
6.0 - 8.0	1.0	6.5	1.7	1.7	2.0	2.0
10.0 - 12.0	2.0	10.6	13.	14.	4.0	6.0
12.0 - 14.0	1.0	12.1	53.	53.	2.0	8.0
14.0 - 16.0	3.0	15.1	148.	282.	6.0	14.0
16.0 - 18.0	10.0	17.2	156.	225.	20.0	34.0
18.0 - 20.0	20.0	18.8	583.	794.	40.0	74.0
20.0 - 22.0	12.0	20.5	639.	820.	24.0	98.0
22.0 - 24.0	1.0	22.5	1059.	1059.	2.0	100.0

TOTAL NUMBER OF FEET = 50.0

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: J. M. HUBER CORPORATION
FIELD :

WELL : JOHNS NO. 25-1 WELL
COUNTY, STATE: MORTON COUNTY, KANSAS

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
1.250 - 2.500	1.0	1.7	1.7	6.5	2.0	2.0
2.500 - 5.000	1.0	3.0	3.0	16.3	2.0	4.0
5.- 10.	1.0	9.1	9.1	10.6	2.0	6.0
10.- 20.	1.0	18.	18.	10.7	2.0	8.0
20.- 40.	1.0	30.	30.	14.9	2.0	10.0
40.- 80.	1.0	53.	53.	12.1	2.0	12.0
80.- 160.	1.0	109.	109.	20.4	2.0	14.0
160.- 320.	14.0	221.	224.	17.8	28.0	42.0
320.- 640.	12.0	410.	416.	18.9	24.0	66.0
640.- 1280.	11.0	942.	958.	19.9	22.0	88.0
1280.- 2560.	6.0	1817.	1847.	19.2	12.0	100.0

TOTAL NUMBER OF FEET = 50.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: J. M. HUBER CORPORATION
FIELD :

WELL : JOHNS NO. 25-1 WELL
COUNTY, STATE: MORTON COUNTY, KANSAS

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	50.0	100.0	18.0	18.8
2.0	0.0	0.0	50.0	100.0	0.0	18.8
4.0	0.0	0.0	50.0	100.0	0.0	18.8
6.0	0.0	0.0	50.0	100.0	0.0	18.8
8.0	1.0	0.7	49.0	99.3	0.0	18.8
10.0	1.0	0.7	49.0	99.3	0.0	18.8
12.0	3.0	3.1	47.0	96.9	0.0	19.0
14.0	4.0	4.4	46.0	95.6	0.0	19.0
16.0	7.0	9.4	43.0	90.6	0.0	19.1
18.0	17.0	28.5	33.0	71.5	0.0	19.6
20.0	37.0	70.2	13.0	29.8	0.0	21.1
22.0	49.0	97.5	1.0	2.5	0.0	23.0
24.0	50.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 902.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

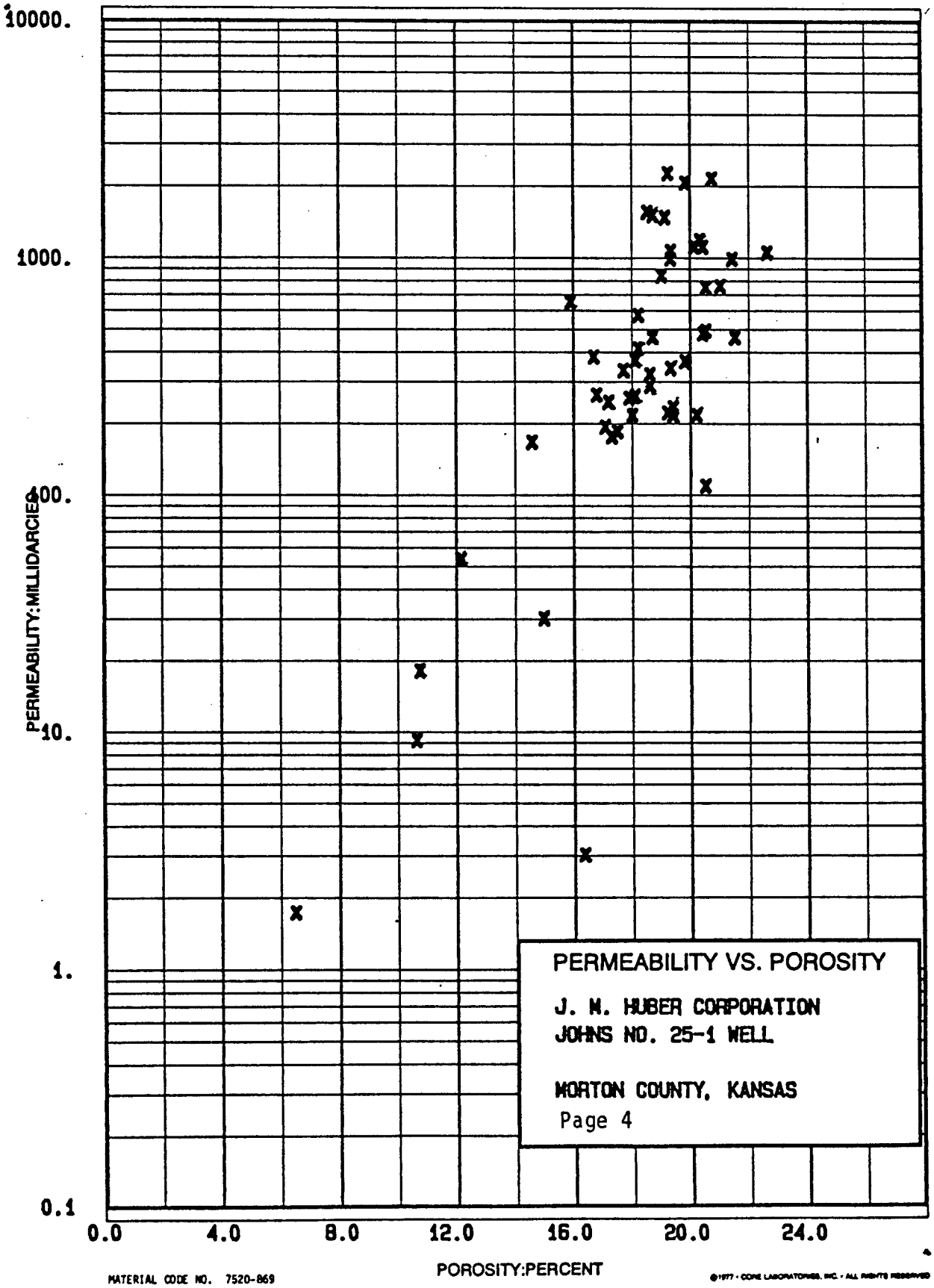
COMPANY: J. M. HUBER CORPORATION
FIELD :

WELL : JOHNS NO. 25-1 WELL
COUNTY, STATE: MORTON COUNTY, KANSAS

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	50.0	100.0	310.61	403.17
0.010	0.0	0.0	50.0	100.0	310.61	403.17
0.020	0.0	0.0	50.0	100.0	310.61	403.17
0.039	0.0	0.0	50.0	100.0	310.61	403.17
0.078	0.0	0.0	50.0	100.0	310.61	403.17
0.156	0.0	0.0	50.0	100.0	310.61	403.17
0.312	0.0	0.0	50.0	100.0	310.61	403.17
0.625	0.0	0.0	50.0	100.0	310.61	403.17
1.250	0.0	0.0	50.0	100.0	310.61	403.17
2.500	1.0	0.0	49.0	100.0	345.46	414.99
5.	2.0	0.0	48.0	100.0	381.34	427.14
10.	3.0	0.0	47.0	100.0	412.90	439.67
20.	4.0	0.1	46.0	99.9	442.01	452.55
40.	5.0	0.2	45.0	99.8	469.23	465.81
80.	6.0	0.4	44.0	99.6	493.07	479.45
160.	7.0	0.7	43.0	99.3	510.69	493.51
320.	21.0	11.2	29.0	88.8	764.70	749.20
640.	33.0	27.9	17.0	72.1	1187.44	1093.41
1280.	44.0	63.0	6.0	37.0	1816.99	1810.19
2560.	50.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET(ARITHMETIC) = 29970.54



MATERIAL CODE NO. 7520-869

LAB

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY J. M. HUBER CORPORATION FILE NO 3402-12549

WELL JOHNS NO. 25-1 WELL DATE 11-20-85

FIELD FORMATION MORROW ELEV.

COUNTY MORTON COUNTY STATE KANSAS DRLG FLD WATER BASE MUD CORES

LOCATION SEC. 25-31S-41W

CORRELATION COREGRAPH

VERTICAL SCALE 5" = 100'

Gamma Ray
RADIATION INCREASE →

Permeability
MILLIDARCIES
1000 100 10 1

Depth Feet

Porosity
PERCENT
30 20 10 0

Total Water
PERCENT PORE SPACE
100 80 60 40 20 0

Oil Saturation
PERCENT PORE SPACE
0 20 40 60 80 100

4950
5000
5050
5100