

OILFIELD RESEARCH LABORATORIES

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

November 23, 1981

Pancana Industries, Ltd.
Box 112
Bronson, Kansas 66716

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Puetz Lease, Well No. 27, located in Woodson County, Kansas.

The core was sampled and sealed in plastic bags by a representative of the client and submitted to our laboratory on November 17, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/mkf

7 c to Bronson, Ks.

- REGISTERED ENGINEERS -

CORE ANALYSIS - WATER ANALYSIS - REPRESSURING ENGINEERING - SURVEYING & MAPPING - PROPERTY EVALUATION & OPERATION

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GENERAL INFORMATION & SUMMARY

Company Pancana Industries, Ltd. Lease Puetz Well No. 27
 Location SW $\frac{1}{4}$, SW $\frac{1}{4}$
 Section 13 Twp. 24S Rge. 15E County Woodson State Kansas

Elevation, Feet

Name of Sand.....

UPPER SQUIRREL

Top of Core

1107.0

Bottom of Core

1122.0

Top of Sand

1107.0

Bottom of Sand (Tested)

1120.0

Total Feet of Permeable Sand

11.2

Distribution of Permeable Sand:
 Permeability Range
 Millidarcys

Feet

Cum. Ft.

0 - 13

7.0

7.0

20 - 36

4.2

11.2

Average Permeability Millidarcys

12.6

Average Percent Porosity

16.2

Average Percent Oil Saturation

38.6

Average Percent Water Saturation

44.6

Average Oil Content, Bbls./A. Ft.

504.

Total Oil Content, Bbls./Acre

5,950.

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LOGName Pancana Industries, Ltd. Lease Puetz Well No. 27

| <u>Depth Interval,</u> <u>Feet</u> | <u>Description</u> |
|---------------------------------------|---|
| 1107.0 - 1111.0 | Grayish brown shaly sandstone. |
| 1111.0 - 1112.2 | Brown sandstone. |
| 1112.2 - 1112.8 | Gray calcareous sandstone. |
| 1112.8 - 1114.3 | Brown sandstone. |
| 1114.3 - 1116.5 | Grayish brown shaly sandstone. |
| 1116.5 - 1119.0 | Brown sandstone. |
| 1119.0 - 1120.0 | Grayish brown slightly shaly sandstone. |
| 1120.0 - 1122.0 | Gray very shaly sandstone. |

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Pancana Industries, Ltd. Lease Puetz Well No. 27

| Sample No. | Depth, Feet | Effective Porosity Percent | Percent Saturation | | Oil Content Bbbs. / A Ft. | Perm., Mill. | Feet of Sand | | Total Oil Content | Perm. Capacity Ft. X md. |
|------------|-------------|----------------------------|--------------------|-------|---------------------------|--------------|--------------|----------|-------------------|--------------------------|
| | | | Oil | Water | | | Ft. | Cum. Ft. | | |
| 1 | 1107.5 | 16.3 | 32 | 50 | 405 | 4.5 | 1.5 | 1.5 | 608 | 6.75 |
| 2 | 1109.2 | 14.6 | 26 | 57 | 295 | 1.8 | 1.5 | 3.0 | 443 | 2.70 |
| 3 | 1110.5 | 15.6 | 30 | 53 | 363 | 4.3 | 1.0 | 4.0 | 363 | 4.30 |
| 4 | 1111.6 | 16.7 | 45 | 41 | 583 | 35. | 1.2 | 5.2 | 700 | 42.00 |
| 5 | 1112.5 | 5.4 | 11 | 80 | 46 | Imp. | 0.6 | 5.8 | 28 | 0.00 |
| 6 | 1113.5 | 19.4 | 41 | 38 | 617 | 21. | 1.5 | 7.3 | 926 | 31.50 |
| 7 | 1114.5 | 15.8 | 45 | 44 | 552 | 2.3 | 1.0 | 8.3 | 552 | 2.30 |
| 8 | 1116.7 | 17.4 | 42 | 35 | 567 | 12. | 1.0 | 9.3 | 567 | 12.00 |
| 9 | 1118.2 | 17.1 | 54 | 29 | 716 | 20. | 1.5 | 10.8 | 1074 | 30.00 |
| 10 | 1119.5 | 18.5 | 48 | 36 | 689 | 9.4 | 1.0 | 11.8 | 689 | 9.40 |

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Pancana Industries, Ltd. Lease Puetz Well No. 27

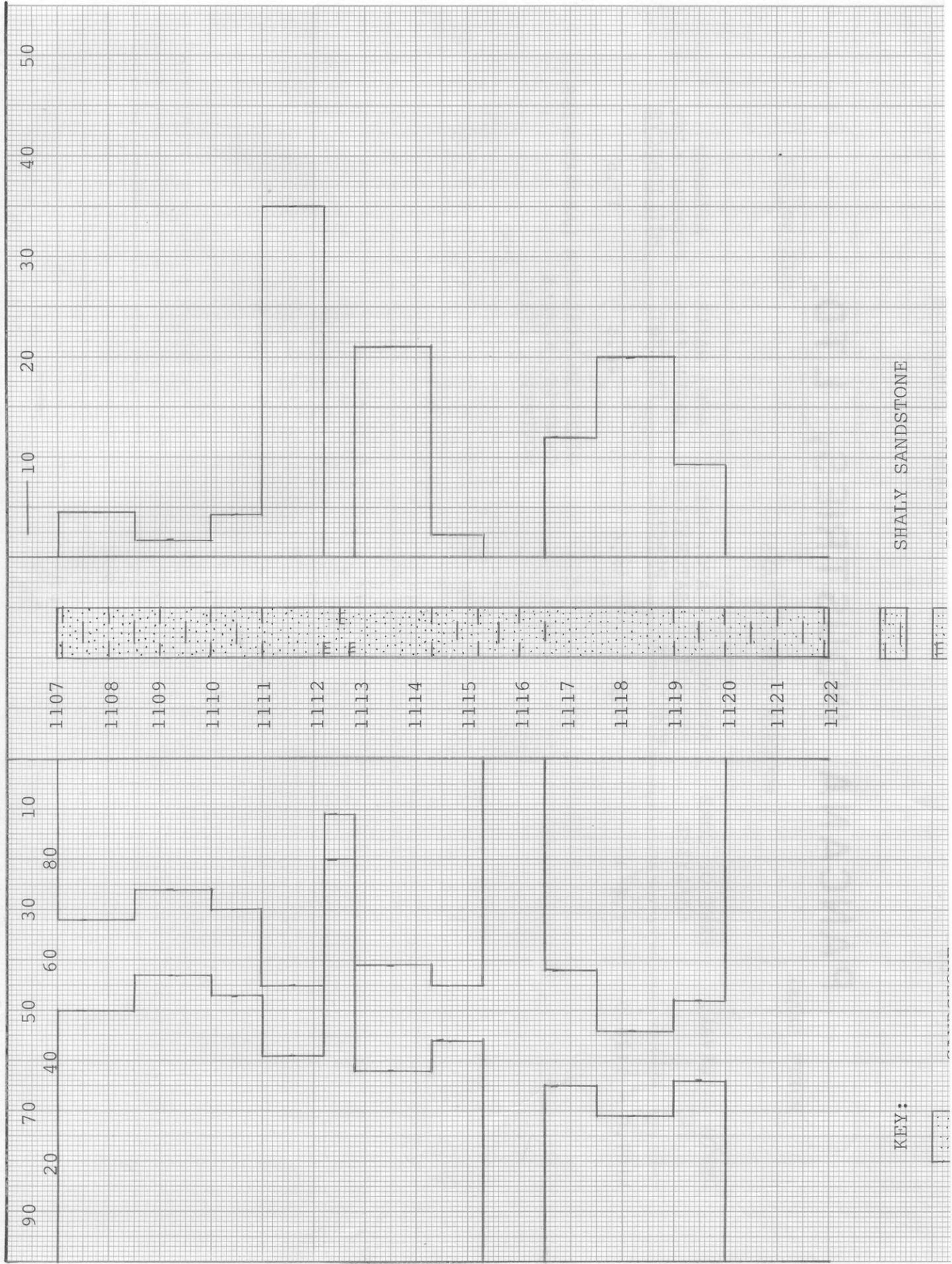
| Depth Interval, Feet | Feet of Core Analyzed | Average Permeability, Millidarcys | Permeability Capacity Ft. x Md. |
|-------------------------|--------------------------|---|---------------------------------------|
| 1107.0 - 1120.0 | 11.2 | 12.6 | 140.95 |

| Depth Interval, Feet | Feet of Core Analyzed | Average Percent Oil Saturation | Average Percent Water Saturation | Average Oil Content Bbl./A. Ft. | Total Oil Content Bbl./Acre |
|-------------------------|--------------------------|--------------------------------------|--|---------------------------------------|-----------------------------------|
| 1107.0 - 1120.0 | 11.8 | 16.2 | 38.6 | 44.6 | 504 |
| | | | | | 5,950 |

WATER SAT.,
PERCENT

OIL SAT.,
PERCENT

PERMEABILITY, IN MILLIDARCYS



KEY:

SHALY SANDSTONE

SANDSTONE

WELL

CALCAREOUS SANDSTONE

PANCANA INDUSTRIES, LTD.

PUETZ LEASE

WELL NO. 27

WOODSON COUNTY, KANSAS

| DEPTH INTERVAL, FEET | FEET OF CORE ANALYZED | AVERAGE PERCENT POROSITY | AVG. OIL SATURATION PERCENT | AVG. WATER SATURATION PERCENT | AVERAGE PERMEABILITY, MILLIDARCYS |
|-------------------------|--------------------------|--------------------------------|-----------------------------------|-------------------------------------|---|
|-------------------------|--------------------------|--------------------------------|-----------------------------------|-------------------------------------|---|

1107.0 - 1120.0 11.8

16.2

38.6

44.6

12.6

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 CHANUTE, KANSAS
 NOVEMBER, 1981

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