

OILFIELD RESEARCH LABORATORIES

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

November 11, 1981

Oaks Petroleum, Inc.
% Ray Wagner
R. R. #3
Paola, Kansas 66071

Gentlemen:

Enclosed herewith are the results of tests run on the rotary cores taken from the N. Freeman Lease, Well No. LO-21, located in Franklin County, Kansas.

The cores were sampled and sealed in plastic bags by a representative of the client and submitted to our laboratory on November 6, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel
by B.L.

Sanford A. Michel

SAM/mkf

3 c to Paola, Ks.
2 c to Stoystown, Pa.

Oilfield Research Laboratories
GENERAL INFORMATION & SUMMARY

Company Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-21

Location _____
 Section 15 Twp. 17S Rge. 21E County Franklin State Kansas

Elevation, Feet

| | | |
|------------------------------------|-------|---------------|
| Name of Sand..... | PERU | 1st. SQUIRREL |
| Top of Core | 363.0 | 518.0 |
| Bottom of Core | 378.5 | 529.6 |
| Top of Sand | 363.0 | 518.4 |
| Bottom of Sand | 378.5 | 529.6 |
| Total Feet of Permeable Sand | 11.5 | 6.4 |

Distribution of Permeable Sand:

Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 4
55 - 75
113 - 200
200 - 281
380 - 385

2.5
2.0
3.5
2.5
1.0

2.5
4.5
8.0
10.5
11.5

1st. SQUIRREL SAND

0 - 7
12 - 24

2.0
4.4

2.0
6.4

| | | |
|--|--------|--------|
| Average Permeability Millidarcys | 144.4 | 14.0 |
| Average Percent Porosity | 22.5 | 22.0 |
| Average Percent Oil Saturation | 28.1 | 33.6 |
| Average Percent Water Saturation..... | 49.3 | 39.0 |
| Average Oil Content, Bbls./A. Ft. | 460. | 574. |
| Total Oil Content, Bbls./Acre..... | 5,295. | 3,673. |

OILFIELD RESEARCH LABORATORIES

LOGName Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-21

| <u>Depth Interval,</u> <u>Feet</u> | <u>Description</u> |
|---------------------------------------|--|
| 363.0 - 365.1 | PERU SAND Brown slightly calcareous sandstone. |
| 365.1 - 367.0 | Gray and brown laminated slightly calareous shale and sandstone. |
| 367.0 - 375.3 | Dark brown sandstone. |
| 376.0 - 378.5 | Grayish brown slightly calcarous shaly sandstone. |
| | 1st. SQUIRREL SAND |
| 518.0 - 518.4 | Grayish brown shaly sandstone containing a vertical fracture. |
| 518.4 - 520.8 | Brown sandstone. |
| 520.8 - 524.6 | Grayish brown shaly sandstone. |
| 524.6 - 525.5 | Brown sandstone. |
| 525.5 - 526.2 | Gray shaly sandstone. |
| 526.2 - 526.7 | Brown sandstone. |
| 526.7 - 529.0 | Gray very shaly sandstone. |
| 529.0 - 529.6 | Brown sandstone. |

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

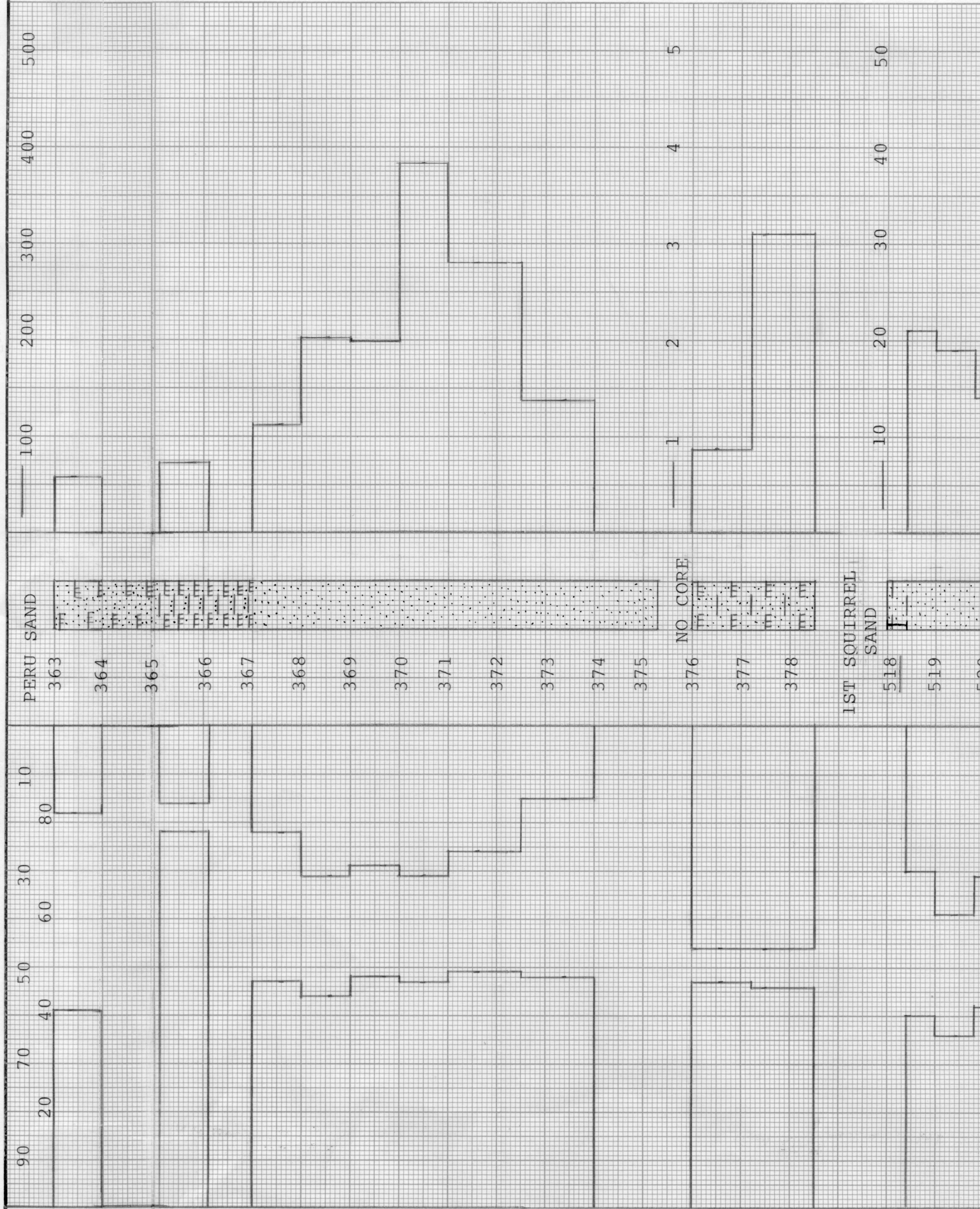
Company Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-21

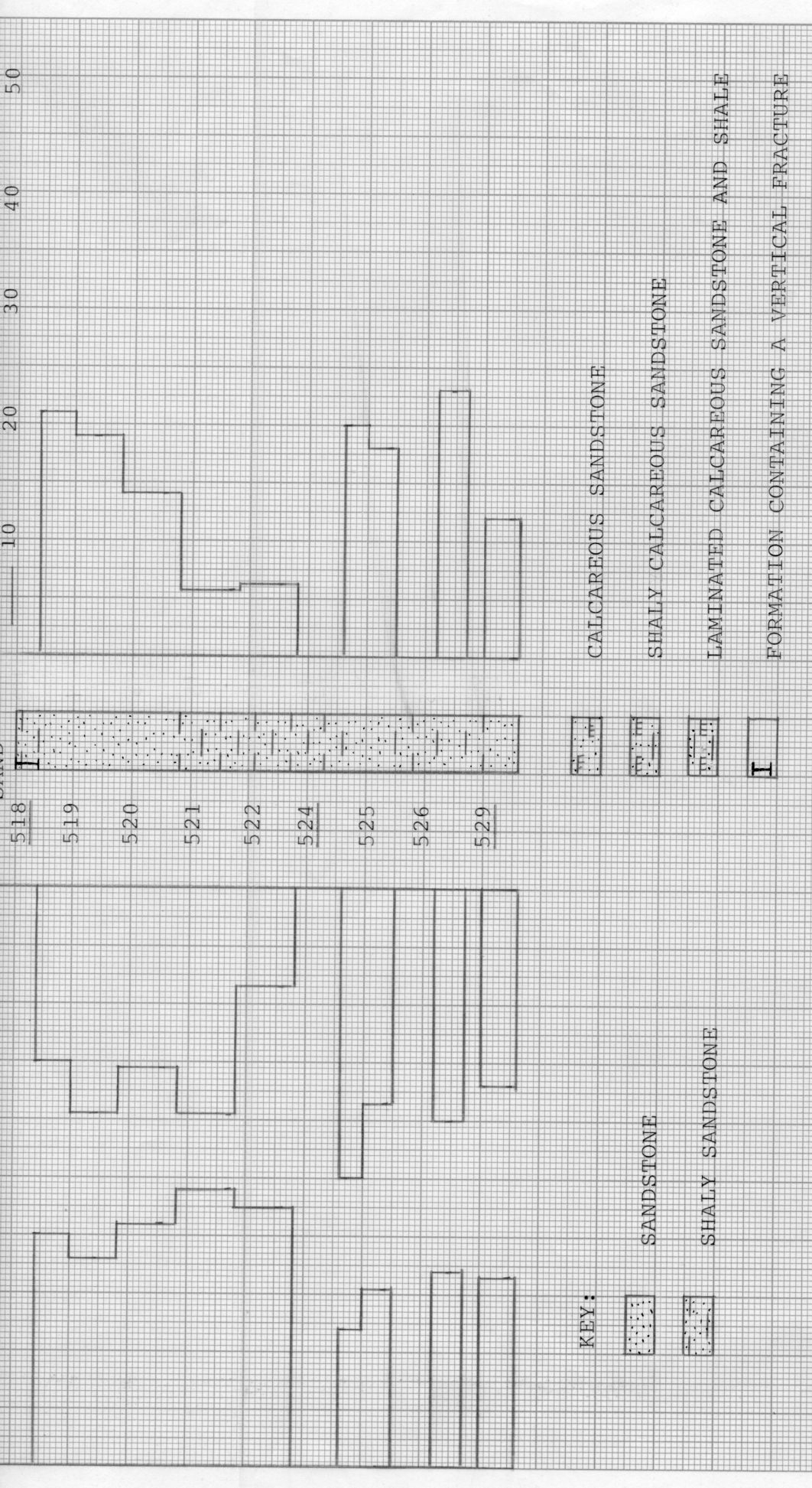
| Sample No. | Depth, Feet | Effective Porosity Percent | Percent Saturation | | | Oil Content Bbls. / A Ft. | Perm., Mill. | Feet of Sand | | Total Oil Content | Perm. Capacity Ft. X md. |
|------------|-------------|----------------------------|--------------------|-------|-------|---------------------------|--------------|--------------|----------|-------------------|--------------------------|
| | | | Oil | Water | Total | | | Ft. | Cum. Ft. | | |
| 1 | 363.4 | 22.9 | 18 | 41 | 59 | PERU SAND | 58. | 1.0 | 320 | 58.00 | |
| 2 | 365.8 | 15.7 | 16 | 78 | 94 | | 72. | 1.0 | 195 | 72.00 | |
| 3 | 367.6 | 25.9 | 22 | 47 | 69 | | 113. | 1.0 | 442 | 113.00 | |
| 4 | 368.6 | 27.8 | 31 | 44 | 75 | | 203. | 1.0 | 669 | 203.00 | |
| 5 | 369.7 | 27.8 | 29 | 48 | 77 | | 199. | 1.0 | 625 | 199.00 | |
| 6 | 370.5 | 29.7 | 31 | 47 | 78 | | 384. | 1.0 | 714 | 384.00 | |
| 7 | 371.6 | 28.2 | 26 | 49 | 75 | | 280. | 1.5 | 854 | 420.00 | |
| 8 | 373.4 | 24.8 | 15 | 48 | 63 | | 138. | 1.5 | 434 | 207.00 | |
| 9 | 376.6 | 9.4 | 46 | 47 | 93 | | 0.89 | 1.2 | 402 | 1.07 | |
| 10 | 377.4 | 13.8 | 46 | 46 | 92 | | 3.1 | 1.3 | 640 | 4.03 | |
| | | | | | 1st. | SQUIRREL SAND | | | | | |
| 11 | 518.5 | 21.8 | 30 | 40 | 70 | | 21. | 0.6 | 304 | 12.60 | |
| 12 | 519.4 | 22.7 | 39 | 36 | 75 | | 19. | 0.8 | 550 | 15.20 | |
| 13 | 520.6 | 23.0 | 31 | 42 | 73 | | 14. | 1.0 | 553 | 14.00 | |
| 14 | 521.7 | 21.4 | 39 | 48 | 87 | | 5.8 | 1.0 | 648 | 5.80 | |
| 15 | 522.6 | 21.2 | 17 | 45 | 62 | | 6.3 | 1.0 | 280 | 6.30 | |
| 16 | 524.7 | 21.5 | 50 | 24 | 74 | | 20. | 0.4 | 334 | 8.00 | |
| 17 | 525.4 | 21.9 | 37 | 31 | 68 | | 18. | 0.5 | 315 | 9.00 | |
| 18 | 526.5 | 21.8 | 40 | 34 | 74 | | 23. | 0.5 | 339 | 11.50 | |
| 19 | 529.5 | 22.1 | 34 | 33 | 67 | | 12. | 0.6 | 350 | 7.20 | |

WATER SAT., PERCENT →

OIL SAT., PERCENT ←

PERMEABILITY, IN MILLIDARCYS





OAKS PETROLEUM, INC.

N. FREEMAN LEASE

FRANKLIN COUNTY, KANSAS

WELL NO. LO - 21

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

PERU SAND

| | | | | | |
|---------------|------|------|------|------|-------|
| 363.0 - 366.1 | 2.0 | 19.3 | 17.0 | 59.5 | 65.0 |
| 367.0 - 374.0 | 7.0 | 27.2 | 24.9 | 47.4 | 218.0 |
| 376.0 - 378.5 | 2.5 | 11.7 | 46.0 | 46.5 | 2.0 |
| 363.0 - 378.5 | 11.5 | 22.5 | 28.1 | 49.3 | 144.4 |

FIRST SQUIRREL SAND

| | | | | | |
|---------------|-----|------|------|------|------|
| 518.4 - 529.6 | 6.4 | 22.0 | 33.6 | 39.0 | 14.0 |
|---------------|-----|------|------|------|------|

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
NOVEMBER, 1981

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