

February 14, 1950

Brandsberry Machine Company
Russell, Kansas

Attention: Mr. L. C. McLaughlin

Gentlemen:

Enclosed herewith is the report of the analysis of the Keystone barrel core taken from the Davidson Lease, Well No. 2, Wilson County, Kansas, and submitted to our laboratory on February 8, 1950.

Inasmuch as there is such a small amount of sand in this well, we do not think it necessary to give a complete write-up regarding the core data. It is doubtful whether this well will make very much oil unless artificial pressure is applied to the sand. In case the sand on this lease is subjected to water repressuring, chances are this well would make a fair oil producer after shooting.

Because of the thin sand section and the broken condition of the core, we feel quite certain that this well was drilled quite close to the edge of the shoe-string.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

Carl L. Pate

By Bonnie Ladd

CLP:dt

L. C. McLAUGALIN

CORE ANALYSIS REPORT

DAVIDSON LEASE

WELL NO. 2

WILSON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

FEBRUARY 14, 1950

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company L. C. McLaughlin Lease Davidson Well No. 2

Location _____

Section 33 Twp. 28 Rge. 16 E County Wilson State Kansas

| | |
|------------------------------|--------------|
| Name of Sand | Wiser |
| Top of Core | 889.00 |
| Bottom of Core | 901.40 |
| Top of Sand | 891.53 |
| Bottom of Sand | 894.80 |
| Total Feet of Permeable Sand | 2.36 |

Distribution of Permeable Sand:

| Permeability Range Millidarcys | Feet | Cum. Ft. |
|-----------------------------------|------|----------|
| 0 - 5 | 0.44 | 0.44 |
| 5 - 10 | 0.82 | 1.26 |
| 10 & above | 1.10 | 2.36 |

| | |
|---|-------|
| Average Permeability, Millidarcys | 10.17 |
| Average Percent Porosity | 13.60 |
| Average Percent Oil Saturation | 26.65 |
| Average Percent Water Saturation | 42.11 |
| Average Oil Content, Bbls./A. Ft. | 282. |
| Total Oil Content, Bbls./Acre | 759. |
| 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 | |

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LOG

Company L. C. McLaughlin Lease Davidson Well No. 2

The detailed log of the formation cored is as follows:

| <u>Depth Interval,</u> <u>Feet</u> | <u>Description</u> |
|---------------------------------------|--|
| 889.00 - 891.10 | - Sandy shale (discarded at well). |
| 891.10 - 891.35 | - Gray shale. |
| 891.35 - 891.53 | - Laminated shale and sandstone. |
| 891.53 - 891.85 | - Light brown fine grained finely laminated micaceous sandstone. |
| 891.85 - 892.30 | - Light brown fine grained micaceous sandstone. |
| 892.30 - 892.58 | - Light brown fine grained micaceous slightly shaley sandstone. |
| 892.58 - 893.10 | - Light brown fine grained micaceous sandstone. |
| 893.10 - 893.40 | - Light brown fine grained micaceous shaley sandstone. |
| 893.40 - 894.80 | - Light brown fine grained micaceous sandstone. |
| 894.80 - 896.70 | - Soft gray shale. |
| 896.70 - 897.10 | - Gray shale. |
| 897.10 - 901.40 | - Discarded at well. |

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RESULTS OF PERMEABILITY TESTS
TABLE I

Company L. C. McLaughlin Lease Davidson Well No. 2

| Sample No. | Depth, Feet | Permeability Millidarcys | Feet of Core | | Permeability Capacity Ft. x Md. |
|------------|-------------|--------------------------|--------------|----------|---------------------------------|
| | | | Ft. | Cum. Ft. | |
| 1 | 891.45 | Imp. | 0.18 | 0.18 | 0.00 |
| 2 | 892.15 | 4.2 | 0.44 | 0.62 | 1.85 |
| 3 | 892.60 | 5.6 | 0.22 | 0.84 | 1.23 |
| 4 | 893.00 | 7.9 | 0.30 | 1.14 | 2.37 |
| 5 | 893.43 | 5.8 | 0.30 | 1.44 | 1.74 |
| 6 | 893.90 | 10. | 0.45 | 1.89 | 4.50 |
| 7 | 894.35 | 19. | 0.65 | 2.54 | 12.35 |

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SUMMARY OF PERMEABILITY TESTS

TABLE II

| | | | | | |
|------------------------|--------------------------|---|--|----------|----------|
| Company | <u>L. C. McLaughlin</u> | Lease | <u>Davidson</u> | Well No. | <u>2</u> |
| Depth Interval Feet | Feet of Core Analyzed | Average Permeability, Millidarcys | Permeability Capacity, Ft. x Md. | | |
| 891.85 - 894.80 | 2.36 | 10.17 | 24.04 | | |

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RESULTS OF SATURATION TESTS

TABLE III

Company L. C. McLaughlin Lease DAVIDSON Well No. 2

| Sat. No. | Depth, Feet | Effective Porosity Percent | Percent Saturation | | | Oil Content Bbls./A. Ft. | Feet of Core | | Total Oil Content Bbls./Acre |
|----------|-------------|----------------------------|--------------------|-------|-------|--------------------------|--------------|----------|------------------------------|
| | | | Oil | Water | Total | | Ft. | Cum. Ft. | |
| F-1 | 891.78 | 11.7 | 30.4 | - | - | 277 | 0.32 | 0.32 | 89 |
| 1 | 891.95 | 13.8 | 22.3 | 50.0 | 72.3 | 239 | 0.45 | 0.77 | 108 |
| 2 | 892.86 | 14.1 | 29.0 | 42.5 | 61.5 | 318 | 0.52 | 1.29 | 165 |
| 3 | 894.15 | 14.1 | 26.4 | 42.1 | 68.5 | 289 | 1.00 | 2.29 | 289 |
| 4 | 894.71 | 13.3 | 26.2 | 32.8 | 59.0 | 271 | 0.40 | 2.69 | 108 |
| | | | | | | | Total | - - | 759 |

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SUMMARY OF SATURATION TESTS

TABLE IV

| Company | L. C. McLaughlin | Lease | Davidson | Well No. | | |
|-------------------------|--------------------------|--------------------------------|--|--|------------------------------------|-----|
| Depth Interval, Feet | Feet of Core Analyzed | Average Percent Porosity | Average Percent Water Saturation | Average Oil Content Bbls./A. Ft. | Total Oil Content Bbls./Acre | |
| 891.53-894.80 | 2.69 | 13.60 | 26.65 | 42.11 | 282 | 759 |

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RESULTS OF WATER DIFFERENTIATION TESTS
TABLE VII

Company L. C. McLaughlin Lease Davidson Well No. 2

| Sample No. | Depth, Feet | Chloride Content of Brine in Sand ppm | Connate | Percent Water Saturation Drilling & Foreign | Total |
|------------|--------------------------------|---------------------------------------|---------|---|-------|
| 1 | 891.95 | 31,000 | | | |
| 2 | 892.86 | 33,050 | | | |
| 3 | 894.15 | 31,600 | | | |
| 4 | 894.71 | 54,800 | | | |
| | Note: ppm - parts per million. | | | | |

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SUMMARY OF WATER DIFFERENTIATION TESTS

TABLE VIII

| | | | | | |
|-------------------------|--|----------------------------------|--|----------|----------|
| Company | L. C. McLaughlin | Lease | Davidson | Well No. | 2 |
| Depth Interval, Feet | Chloride Content of Brine in Sand, ppm | Average Percent Connate Water | Average Percent Drilling & Foreign Water | | |
| 891.85 - 894.80 | 35,738 | | | | |

Note: ppm - parts per million.