

LAYTON OIL COMPANY  
CORE ANALYSIS REPORT  
ERNIE HAZEN LEASE WELL NO. 10  
MONTCOMERY COUNTY, KANSAS

OILFIELD RESEARCH LABORATORIES

September 9, 1953

Layton Oil Company  
P. O. Box 263  
Independence, Kansas

Gentlemen:

Enclosed herewith are results of tests made on the Cable Tool core taken from the Ernie Hazen Lease, Well No. 1, Montgomery County, Kansas, and submitted to our laboratory on August 30, 1953.

It was recommended that the pipe be set and cemented at a depth of 820.0 feet and the hole be plugged back to 826.0 feet.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Carl L. Pate

CLP:er

2 c.c.

LAYTON OIL COMPANY

CORE ANALYSIS REPORT

ERNIE HAZEN LEASE

WELL NO. 1

MONTGOMERY COUNTY, KANSAS

OILFIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

SEPTEMBER 9, 1953

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Layton Oil Company Lease Ernie Haxen Well No. 1

Location SE $\frac{1}{4}$ , NE $\frac{1}{4}$

Section 3 Twp. 31S Rge. 16W County Montgomery State Kansas

Name of Sand Bartlesville

Top of Core 811.90

Bottom of Core 830.30

Top of <sup>Pay</sup>Sand 817.95

Bottom of <sup>Pay</sup>Sand 827.10

Total Feet of Permeable Sand (Analyzed) 14.80

Total Feet of Floodable Sand -

| Distribution of Permeable Sand:<br>Permeability Range<br>Millidarcys | Feet | Cum. Ft. |
|--|------|----------|
|--|------|----------|

|            |      |       |
|------------|------|-------|
| 0 - 4      | 5.60 | 5.60  |
| 4 - 8      | 2.90 | 8.50  |
| 8 - 12     | 1.50 | 10.00 |
| 12 - 20    | 1.60 | 11.60 |
| 20 - 50    | 1.80 | 13.40 |
| 50 & above | 1.40 | 14.80 |

Average Permeability Millidarcys 17.94

Average Percent Porosity 15.94

Average Percent Oil Saturation 37.10

Average Percent Water Saturation 36.50

Average Oil Content, Bbls./A. Ft. 457.

Total Oil Content, Bbls./Acre 6,359.

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

LOG

Company Layton Oil Company Lease Ernie Hazen Well No. 1

| <u>Depth Interval,<br/>Feet</u> | <u>Description</u>  |
|---------------------------------|---|
| 811.90 - 812.90                 | - Loss.   |
| 812.90 - 817.95                 | - Light brown fine grained micaceous slightly shaley sandstone.           |
| 817.95 - 822.90                 | - Brown fine grained micaceous sandstone.                                 |
| 822.90 - 823.20                 | - Dark fine grained micaceous slightly shaley sandstone.                  |
| 823.20 - 827.10                 | - Brown fine grained micaceous sandstone, containing a vertical fracture. |
| 827.10 - 827.70                 | - Dark fine grained micaceous sandstone.                                  |
| 827.70 - 827.95                 | - Gray sandy shale.   |
| 827.95 - 828.30                 | - Brown fine grained micaceous sandstone.                                 |
| 828.30 - 828.55                 | - Dark fine grained micaceous carbonaceous sandstone.                     |
| 828.55 - 828.75                 | - Coal  |
| 828.75 - 828.90                 | - Gray shale.   |
| 828.90 - 830.30                 | - Gray sandy shale.   |

**Oilfield Research Laboratories**  
**RESULTS OF PERMEABILITY TESTS**  
**TABLE I**

Company Layton Oil Company Lease Ernie Hazen Well No. 1

| Sample No. | Depth, Feet | Permeability Millidarcys | Feet of Core |          | Permeability Capacity Ft. x Md. |
|------------|-------------|--------------------------|--------------|----------|---------------------------------|
|            |             |                          | Ft.          | Cum. Ft. |                                 |
| 1          | 813.35      | 2.9                      | 0.60         | 0.60     | 1.74                            |
| 2          | 813.75      | 2.4                      | 0.50         | 1.10     | 1.20                            |
| 3          | 814.20      | 3.8                      | 0.35         | 1.45     | 1.33                            |
| 4          | 814.50      | 6.0                      | 0.35         | 1.80     | 2.10                            |
| 5          | 814.90      | 3.8                      | 0.60         | 2.40     | 2.28                            |
| 6          | 815.70      | 4.2                      | 0.70         | 3.10     | 2.94                            |
| 7          | 816.35      | 4.1                      | 0.70         | 3.80     | 2.87                            |
| 8          | 817.00      | 2.9                      | 0.50         | 4.30     | 1.45                            |
| 9          | 817.45      | 2.5                      | 0.75         | 5.05     | 1.88                            |
| 10         | 818.20      | 11.                      | 0.45         | 5.50     | 4.95                            |
| 11         | 818.65      | 8.8                      | 0.40         | 5.90     | 3.52                            |
| 12         | 819.00      | 8.5                      | 0.45         | 6.35     | 3.83                            |
| 13         | 819.50      | 14.                      | 0.50         | 6.85     | 7.00                            |
| 14         | 820.00      | 17.                      | 0.45         | 7.30     | 7.65                            |
| 15         | 820.38      | 30.                      | 0.35         | 7.65     | 10.50                           |
| 16         | 820.75      | 105.                     | 0.45         | 8.10     | 47.25                           |
| 17         | 821.25      | 31.                      | 0.50         | 8.60     | 15.50                           |
| 18         | 821.70      | 16.                      | 0.45         | 9.05     | 7.20                            |
| 19         | 822.20      | 3.0                      | 0.45         | 9.50     | 1.35                            |
| 20         | 822.65      | 3.0                      | 0.50         | 10.00    | 1.50                            |
| 21         | 823.08      | 83.                      | 0.30         | 10.30    | 24.90                           |
| 22         | 823.60      | 92.                      | 0.65         | 10.95    | 59.80                           |
| 23         | 824.10      | 49.                      | 0.50         | 11.45    | 24.50                           |
| 24         | 824.60      | 29.                      | 0.45         | 11.90    | 13.05                           |
| 25         | 825.00      | 4.3                      | 0.50         | 12.40    | 2.15                            |
| 26         | 825.60      | 6.7                      | 0.65         | 13.05    | 4.36                            |
| 27         | 826.30      | 1.3                      | 0.55         | 13.60    | 0.72                            |
| 28         | 826.75      | 2.6                      | 0.40         | 14.00    | 1.04                            |
| 29         | 827.05      | 19.                      | 0.20         | 14.20    | 3.80                            |
| 30         | 827.35      | 2.3                      | 0.40         | 14.60    | 0.92                            |
| 31         | 827.65      | 11.                      | 0.20         | 14.80    | 2.20                            |

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**SUMMARY OF PERMEABILITY TESTS**

**TABLE II**

Company Layton Oil Company Lease Ernie Haven Well No. 1

| Depth Interval<br>Feet | Feet of Core<br>Analyzed | Average<br>Permeability,<br>Millidarcys | Permeability<br>Capacity,<br>Ft. x Md. |
|------------------------|--------------------------|---|--|
| 812.90 - 817.95        | 5.05                     | 3.52                                    | 17.79                                  |
| 817.95 - 827.70        | 9.75                     | 25.40                                   | 247.69                                 |
| 812.90 - 827.70        | 14.80                    | 17.94                                   | 265.48                                 |

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RESULTS OF SATURATION TESTS

TABLE III

Company Layton Oil Company Lease Ernie Hazen Well No. 1

| 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.  |                              |
| 1        | 813.05      | 15.7                       | 28.2               | 40.8  | 69.0  | 344                      | 0.60         | 0.60      | 207                          |
| 2        | 814.00      | 15.1                       | 32.0               | 40.7  | 72.7  | 375                      | 0.85         | 1.45      | 318                          |
| 3        | 814.70      | 14.8                       | 41.3               | 40.5  | 81.8  | 475                      | 0.95         | 2.40      | 451                          |
| 4        | 816.05      | 16.4                       | 37.0               | 38.4  | 75.4  | 472                      | 1.35         | 3.75      | 637                          |
| 5        | 817.20      | 16.9                       | 36.2               | 31.1  | 67.3  | 476                      | 1.30         | 5.05      | 620                          |
| 6        | 818.40      | 16.9                       | 39.5               | 40.2  | 79.7  | 518                      | 0.85         | 5.90      | 440                          |
| 7        | 819.20      | 14.3                       | 32.8               | 40.9  | 73.7  | 364                      | 0.85         | 6.75      | 309                          |
| 8        | 820.15      | 18.3                       | 37.3               | 33.0  | 70.3  | 530                      | 0.90         | 7.65      | 477                          |
| 9        | 820.90      | 16.8                       | 35.9               | 35.3  | 71.2  | 468                      | 0.85         | 8.50      | 398                          |
| 10       | 821.95      | 17.4                       | 36.7               | 33.3  | 70.0  | 496                      | 1.00         | 9.50      | 496                          |
| 11       | 822.80      | 15.2                       | 43.2               | 35.3  | 78.5  | 509                      | 0.50         | 10.00     | 255                          |
| 12       | 823.90      | 15.8                       | 30.0               | 45.0  | 75.0  | 368                      | 1.15         | 11.15     | 424                          |
| 14       | 824.80      | 14.9                       | 44.0               | 33.9  | 77.9  | 509                      | 1.25         | 12.40     | 635                          |
| 15       | 826.45      | 14.3                       | 41.5               | 29.3  | 70.8  | 461                      | 1.50         | 13.90     | 692                          |
|          |             |                            |                    |       |       | Total - - - - -          | - - - - -    | - - - - - | 6,359                        |

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SUMMARY OF SATURATION TESTS

TABLE IV

Company Layton Oil Company Lease Ernie Hazen Well No. 1

| Depth Interval,<br>Feet | Feet of Core<br>Analyzed | Average<br>Percent<br>Porosity | Average<br>Percent Oil<br>Saturation | Average<br>Percent Water<br>Saturation | Average<br>Oil Content<br>Bbl./A. Ft. | Total Oil<br>Content<br>Bbls./Acre |
|-------------------------|--------------------------|--------------------------------|--------------------------------------|--|---------------------------------------|------------------------------------|
| 812.90 - 817.95         | 5.05                     | 15.94                          | 35.70                                | 37.61                                  | 442                                   | 2,233                              |
| 817.95 - 827.10         | 8.85                     | 15.90                          | 37.90                                | 35.90                                  | 466                                   | 4,126                              |
| 812.90 - 827.10         | 13.90                    | 15.94                          | 37.10                                | 36.50                                  | 457                                   | 6,359                              |