# OILFIELD RESEARCH LABORATORIES

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Chanute, Kansas

May 19, 1965

14-25-19E

Sallee J-18

Wheeler Oil Company
4102 South 74th East Avenue
Tulsa, Oklahoma

Gentlemen:

Enclosed herewith is the report of the analysis of the Cable Tool core taken from the Sallee Lease, Well No. J-18, Allen County, Kansas, and submitted to our laboratory on May 15, 1965.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:rf

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## Oilfield Research Laboratories

### GENERAL INFORMATION & SUMMARY

Company Wheeler Oil Company Lease Sallee Well No. J-18

Location 335' NSL & 55' EWL, NW¼

Section 14 Twp. 25S Rge. 19E County Allen State Kansas

| | |
|---|---|
| Name of Sand | Bartlesville |
| Top of Core | 853.0 |
| Bottom of Core | 911.7 |
| Top of Good Sand | 866.4 |
| Bottom of Floodable Sand | 886.4 |
| Total Feet of Permeable Sand | 38.9 |
| Total Feet of Pay Floodable Sand | 8.1 |

Distribution of Permeable Sand:

| Permeability Range Millidarcys | Feet | Cum. Ft. |
|---|---|---|
| 0 - 5 | 2.5 | 2.5 |
| 5 - 10 | 5.0 | 7.5 |
| 10 - 25 | 11.6 | 19.1 |
| 25 - 50 | 7.8 | 26.9 |
| 50 - 100 | 8.0 | 34.9 |
| 100 & above | 4.0 | 38.9 |

| | |
|---|---|
| Average Permeability Millidarcys | 41.9 |
| Average Percent Porosity | 20.3 |
| Average Percent Oil Saturation | 55.0 |
| Average Percent Water Saturation | 29.1 |
| Average Oil Content, Bbls./A. Ft. | 873. |
| Total Oil Content, Bbls./Acre | 35,185. |
| Average Percent Oil Recovery by Laboratory Flooding Tests | 8.1 |
| Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. | 135. |
| Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre | 1,158. |
| Total Calculated Oil Recovery, Bbls./Acre | 1,870. |
| Packer Setting, Feet | |
| Viscosity, Centipoises @ | |
| A. P. I. Gravity, degrees @ 60 °F | |
| Elevation, Feet (Ground) | 1059.2 |

The sand was cored in water. This core was sampled by an employee of Oilfield Research Laboratories.

## FORMATION CORED

The detailed log of the formation cored is as follows:

| Depth Interval, Feet | Description |
|---|---|
| 853.0 - 854.6 | Brown shaly sandstone. |
| 854.6 - 856.0 | Gray sandy shale. |
| 856.0 - 857.7 | Brown shaly sandstone. |
| 857.7 - 866.0 | Gray sandy shale. |
| 866.0 - 871.0 | Dark brown, slightly shaly sandstone. |
| 871.0 - 873.5 | Gray sandy shale. |
| 873.5 - 886.4 | Dark brown, slightly shaly sandstone. |
| 886.4 - 907.5 | Dark carbonaceous, slightly shaly sandstone. |
| 907.5 - 911.7 | Shale. |

Coring was started at a depth of 853.0 feet in brown shaly sandstone and completed at 911.7 feet in shale. This core shows a total of 42.3 feet of sandstone. For the most part, the pay is made up of dark brown, slightly shaly sandstone.

## PERMEABILITY

For the sake of distribution, the core was divided into three sections. The weighted average permeability of the upper, middle and lower sections is 9.8, 52.4 and 36.8 millidarcys respectively; the overall average being 41.9 (See Table III). By observing the data given on the coregraph, it is noticeable that the sand has a very irregular permeability profile. The permeability of the sand varies from impermeable to a maximum of 145. millidarcys. Vertical air permeability tests were run on 3 samples (Table 1A)

## PERCENT SATURATION & OIL CONTENT

The sand in this core shows a very good weighted average percent oil saturation, namely, 55.0. The weighted average percent oil saturation of the upper, middle and lower sections is 33.9, 53.6 and 59.5 respectively. The weighted average percent water saturation of the upper, middle and lower sections is 44.9, 31.9 and 25.0 respectively; the overall average being 29.1 (See Table III). This gives an overall weighted average total fluid saturation of 84.1 percent.

The weighted average oil content of the upper, middle and lower sections is 508, 875 and 923 barrels per acre foot respectively; the overall average being 873. The total oil content, as shown by this core is 35,185 barrels per acre (See Table III).

## LABORATORY FLOODING TESTS

The sand in this core responded poorly to laboratory flooding tests, as a total recovery of 1,158 barrels of oil per acre was obtained from 8.6 feet of sand. The weighted average percent oil saturation was reduced from 55.4 to 47.3, or represents an average recovery of 8.1 percent. The weighted average effective permeability of the samples is 3.03 millidarcys, while the average initial fluid production pressure is 34.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 40 samples tested, 16 produced water and 9 oil. This indicates that approximately 22 percent of the sand represented by these samples is floodable pay sand. The tests also show that the sand has a wide variation in effective permeability.

## CONCLUSION

From a study of the above data, we estimate that approximately 1,870 barrels of oil per acre or an average of 231 barrels per acre

foot can be recovered from the area represented by this core by efficient water-flooding provided the sand will take water satisfactorily. The following data and assumptions were used in calculating the above oil recovery value:

| | |
|---|---|
| Original formation volume factor | 1.03 |
| Present formation volume factor | 1.01 |
| Irreducible water saturation, percent | 21.0 |
| Estimated primary oil recovery, percent | 2.0 |
| Present oil saturation, percent | 75.5 |
| Percent porosity | 21.3 |
| Oil saturation after flooding, percent | 47.3 |
| Performance factor | 0.50 |
| Net feet of floodable pay sand | 8.1 |

This core shows a thick sand section having a good porosity, oil and water saturation and a fair permeability. The tests indicate that the sand contains a viscous oil that may not have sufficient mobility to be recovered by water-flooding. In order to recover a large volume of oil from this reservoir, we feel that some type of thermal recovery should be employed.

Oilfield Research Laboratories

Results of Vertical Permeability Tests

TABLE 1A

Company Wheeler Oil Company Lease Sallee Well No. J-18

| Sample No. | Depth, Feet | Vertical Permeability Millidarcys |
|---|---|---|
| 14 | 877.5 | 88. |
| 16 | 879.5 | 101. |
| 17 | 881.5 | 42. |

## Oilfield Research Laboratories

### RESULTS OF SATURATION & PERMEABILITY TESTS

### TABLE 1-B

Company Wheeler Oil Company Lease Sallee Well No. J-18

| 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 | 853.1 | 16.9 | 37 | 35 | 72 | 485 | 21. | 0.6 | 0.6 | 291 | 12.60 |
| 2 | 854.1 | 18.5 | 31 | 58 | 89 | 444 | 5.1 | 1.0 | 1.6 | 444 | 5.10 |
| 3 | 856.2 | 23.4 | 28 | 39 | 67 | 508 | 12. | 0.7 | 2.3 | 356 | 8.40 |
| 4 | 857.1 | 19.5 | 44 | 39 | 83 | 665 | - | 0.5 | 2.8 | 332 | - |
| P-4 | 857.3 | - | - | - | - | - | 2.9 | 0.5 | 3.3 | - | 1.45 |
| F-5 | 866.3 | 16.2 | 46 | - | - | 578 | - | 0.4 | 3.7 | 231 | - |
| 5 | 866.5 | 21.6 | 34 | 39 | 73 | 569 | 24. | 0.6 | 4.3 | 341 | 14.40 |
| 6 | 867.5 | 20.8 | 54 | 33 | 87 | 869 | 27. | 1.0 | 5.3 | 869 | 27.00 |
| 7 | 868.5 | 20.9 | 61 | 35 | 96 | 989 | 19. | 1.0 | 6.3 | 989 | 19.00 |
| 8 | 869.5 | 20.6 | 56 | 35 | 91 | 894 | 45. | 1.0 | 7.3 | 894 | 45.00 |
| 9 | 870.5 | 19.5 | 38 | 45 | 83 | 574 | 24. | 1.0 | 8.3 | 574 | 24.00 |
| 10 | 873.7 | 22.1 | 52 | 30 | 82 | 891 | 31. | 0.8 | 9.1 | 713 | 24.80 |
| 11 | 874.8 | 19.4 | 47 | 38 | 85 | 707 | 4.9 | 1.0 | 10.1 | 707 | 4.90 |
| 12 | 875.8 | 21.4 | 62 | 26 | 88 | 1,030 | 14. | 1.0 | 11.1 | 1,030 | 14.00 |
| 13 | 876.8 | 19.9 | 44 | 35 | 79 | 679 | 27. | 1.0 | 12.1 | 679 | 27.00 |
| 14 | 877.8 | 20.8 | 62 | 30 | 92 | 999 | 74. | 1.0 | 13.1 | 999 | 74.00 |
| 15 | 878.8 | 22.7 | 51 | 39 | 90 | 898 | 84. | 1.0 | 14.1 | 898 | 84.00 |
| 16 | 879.8 | 21.4 | 59 | 26 | 85 | 980 | 126. | 1.0 | 15.1 | 980 | 126.00 |
| 17 | 880.8 | 22.8 | 59 | 28 | 87 | 1,043 | 132. | 1.0 | 16.1 | 1,043 | 132.00 |
| 18 | 881.8 | 22.9 | 54 | 27 | 81 | 959 | 46. | 1.0 | 17.1 | 959 | 46.00 |
| 19 | 882.8 | 22.2 | 61 | 26 | 87 | 1,050 | 79. | 1.0 | 18.1 | 1,050 | 79.00 |
| 20 | 883.8 | 21.8 | 61 | 25 | 86 | 1,030 | 51. | 1.0 | 19.1 | 1,030 | 51.00 |
| 21 | 884.8 | 21.8 | 46 | 32 | 78 | 778 | 25. | 1.0 | 20.1 | 778 | 25.00 |
| 22 | 885.8 | 18.6 | 57 | 28 | 85 | 822 | 91. | 1.1 | 21.2 | 904 | 100.00 |
| 23 | 886.8 | 21.4 | 65 | 19 | 84 | 1,079 | 82. | 0.9 | 22.1 | 972 | 73.80 |
| 24 | 887.8 | 22.1 | 72 | 18 | 90 | 1,236 | 22. | 0.8 | 22.9 | 988 | 17.60 |
| 25 | 888.5 | 22.8 | 70 | 18 | 88 | 1,238 | 11. | 0.9 | 23.8 | 1,115 | 9.90 |

## Oilfield Research Laboratories

### RESULTS OF SATURATION & PERMEABILITY TESTS

### TABLE 1-B

Company Wheeler Oil Company Lease Sallee Well No. J-18

| 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. | | |
| 26 | 889.5 | 16.6 | 40 | 49 | 89 | 516 | 31. | 1.0 | 24.8 | 516 | 31.00 |
| 27 | 890.5 | 21.0 | 47 | 30 | 77 | 766 | 145. | 1.0 | 25.8 | 766 | 145.00 |
| 28 | 891.5 | 21.9 | 68 | 22 | 90 | 1,156 | 104. | 1.0 | 26.8 | 1,156 | 104.00 |
| 29 | 892.5 | 18.8 | 60 | 34 | 94 | 875 | 5.0 | 1.0 | 27.8 | 875 | 5.00 |
| 30 | 893.5 | 20.1 | 57 | 22 | 79 | 889 | 7.7 | 1.0 | 28.8 | 889 | 7.70 |
| 31 | 894.5 | 23.3 | 61 | 22 | 83 | 1,102 | 17. | 1.0 | 29.8 | 1,102 | 17.00 |
| 32 | 895.5 | 20.2 | 67 | 20 | 87 | 1,050 | 62. | 1.0 | 30.8 | 1,050 | 62.00 |
| 33 | 896.5 | 19.3 | 59 | 28 | 87 | 884 | 9.8 | 1.0 | 31.8 | 884 | 9.80 |
| 34 | 897.5 | 18.7 | 62 | 23 | 85 | 899 | 15. | 1.0 | 32.8 | 899 | 15.00 |
| 35 | 898.5 | 19.4 | 55 | 15 | 70 | 826 | 97. | 1.0 | 33.8 | 826 | 97.00 |
| 36 | 899.5 | 18.3 | 70 | 17 | 87 | 994 | 22. | 1.0 | 34.8 | 994 | 22.00 |
| 37 | 900.5 | 20.5 | 74 | 14 | 98 | 1,178 | 11. | 1.0 | 35.8 | 1,178 | 11.00 |
| 38 | 901.5 | 20.1 | 63 | 16 | 79 | 983 | 15. | 1.0 | 36.8 | 983 | 15.00 |
| 39 | 902.5 | 22.6 | 56 | 14 | 70 | 981 | 8.0 | 1.0 | 37.8 | 981 | 8.00 |
| 40 | 903.5 | 15.7 | 31 | 62 | 93 | 377 | Imp. | 1.0 | 38.8 | 377 | 0.00 |
| 41 | 904.5 | 17.6 | 46 | 34 | 80 | 626 | 32. | 1.0 | 39.8 | 626 | 32.00 |
| 42 | 905.5 | 16.9 | 70 | 21 | 91 | 917 | 1.8 | 1.0 | 40.8 | 917 | 1.80 |
| | | | | | | | | Total | | 35,185 | |

## Oilfield Research Laboratories

### SUMMARY OF PERMEABILITY & SATURATION TESTS

### TABLE III

Company Wheeler Oil Company Lease Sallee Well No. J-18

| Depth Interval, Feet | Feet of Core Analyzed | Average Permeability, Millidarcys | Permeability Capacity Ft. x Md. |
|---|---|---|---|
| 853.0 - 857.7 | 2.8 | 9.8 | 27.55 |
| 866.4 - 886.4 | 17.5 | 52.4 | 917.10 |
| 886.4 - 906.0 | 18.6 | 36.8 | 684.60 |
| 853.0 - 906.0 | 38.9 | 41.9 | 1,629.25 |

| Depth Interval, Feet | Feet of Core Analyzed | Average Percent Porosity | Average Percent Oil Saturation | Average Percent Water Saturation | Average Oil Content Bbl./A. Ft. | Total Oil Content Bbls./Acre |
|---|---|---|---|---|---|---|
| 853.0 - 857.7 | 2.8 | 19.5 | 33.9 | 44.9 | 508 | 1,423 |
| 866.0 - 886.4 | 17.9 | 21.0 | 53.6 | 31.9 | 875 | 15,668 |
| 886.4 - 906.0 | 19.6 | 19.8 | 59.5 | 25.0 | 923 | 18,094 |
| 853.0 - 906.0 | 40.3 | 20.3 | 55.0 | 29.1 | 873 | 35,185 |

## Oilfield Research Laboratories

### RESULTS OF LABORATORY FLOODING TESTS

### TABLE IV

Company Wheeler Oil Company Lease Sallee Well No. J-18

| Sample No. | Depth, Feet | Effective Porosity Percent | Original Oil Saturation | | Oil Recovery | | Residual Saturation | | | Volume of Water Recovered cc* | Effective Permeability Millidarcys** | Initial Fluid Production Pressure Lbs./Sq./In. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % | Bbls./A. Ft. | % | Bbls./A. Ft. | % Oil | % Water | Bbls./A. Ft. | | | |
| 1 | 853.1 | 16.9 | 34 | 446 | 0 | 0 | 34 | 46 | 446 | 6 | 0.167 | 50 |
| 2 | 854.1 | 18.0 | 32 | 447 | 0 | 0 | 32 | 58 | 447 | 47 | 1.00 | 40 |
| 4 | 857.1 | 19.2 | 44 | 656 | 4 | 60 | 40 | 53 | 596 | 47 | 0.943 | 40 |
| 5 | 866.3 | 16.2 | 46 | 578 | 0 | 0 | 46 | 35 | 578 | 0 | Imp. | - |
| 6 | 867.5 | 20.3 | 54 | 850 | 6 | 94 | 48 | 50 | 756 | 8 | 0.315 | 50 |
| 7 | 868.5 | 20.4 | 57 | 902 | 0 | 0 | 57 | 41 | 902 | 0 | Imp. | - |
| 8 | 869.5 | 20.4 | 52 | 823 | 0 | 0 | 52 | 44 | 823 | 3 | 0.078 | 50 |
| 9 | 870.5 | 19.1 | 40 | 593 | 0 | 0 | 40 | 51 | 593 | 0 | Imp. | - |
| 10 | 873.7 | 21.7 | 49 | 825 | 0 | 0 | 49 | 37 | 825 | 0 | Imp. | - |
| 11 | 874.8 | 19.7 | 44 | 672 | 0 | 0 | 44 | 46 | 672 | 0 | Imp. | - |
| 12 | 875.8 | 21.0 | 58 | 945 | 0 | 0 | 58 | 34 | 945 | 0 | Imp. | - |
| 13 | 876.8 | 20.2 | 41 | 643 | 0 | 0 | 41 | 44 | 643 | 0 | Imp. | - |
| 14 | 877.8 | 21.1 | 62 | 1,014 | 12 | 196 | 50 | 50 | 818 | 134 | 2.76 | 40 |
| 15 | 878.8 | 23.1 | 51 | 914 | 5 | 90 | 46 | 53 | 824 | 414 | 9.90 | 30 |
| 16 | 879.8 | 21.8 | 59 | 998 | 9 | 152 | 50 | 45 | 846 | 33 | 0.706 | 40 |
| 17 | 880.8 | 22.4 | 59 | 1,025 | 9 | 156 | 50 | 47 | 869 | 163 | 3.48 | 30 |
| 18 | 881.8 | 22.4 | 51 | 886 | 0 | 0 | 51 | 41 | 886 | 9 | 0.285 | 50 |
| 19 | 882.8 | 21.8 | 57 | 965 | 0 | 0 | 57 | 43 | 965 | 4 | 0.170 | 50 |
| 20 | 883.8 | 22.3 | 61 | 1,056 | 15 | 260 | 46 | 47 | 796 | 50 | 1.07 | 40 |
| 21 | 884.8 | 21.3 | 46 | 760 | 4 | 66 | 42 | 55 | 694 | 305 | 5.13 | 20 |
| 22 | 885.8 | 19.1 | 57 | 845 | 7 | 104 | 50 | 43 | 741 | 130 | 20.95 | 20 |
| 23 | 886.8 | 21.0 | 63 | 1,027 | 0 | 0 | 63 | 34 | 1,027 | 0 | Imp. | - |
| 24 | 887.8 | 22.5 | 68 | 1,187 | 0 | 0 | 68 | 26 | 1,187 | 0 | Imp. | - |
| 25 | 888.5 | 22.3 | 68 | 1,177 | 0 | 0 | 68 | 24 | 1,177 | 0 | Imp. | - |
| 27 | 890.5 | 20.6 | 50 | 799 | 0 | 0 | 50 | 48 | 799 | 12 | 0.641 | 40 |
| 28 | 891.5 | 21.5 | 65 | 1,083 | 0 | 0 | 65 | 30 | 1,083 | 0 | Imp. | - |

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

## Oilfield Research Laboratories

### RESULTS OF LABORATORY FLOODING TESTS

### TABLE IV

Company Wheeler Oil Company Lease Sallee Well No. J-18

| Sample No. | Depth, Feet | Effective Porosity Percent | Original Oil Saturation | | Oil Recovery | | Residual Saturation | | | Volume of Water Recovered cc* | Effective Permeability Millidarcys** | Initial Fluid Production Pressure Lbs./Sq./In. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % | Bbls./A. Ft. | % | Bbls./A. Ft. | % Oil | % Water | Bbls./A. Ft. | | | |
| 29 | 892.5 | 19.1 | 57 | 844 | 0 | 0 | 57 | 40 | 844 | 0 | Imp. | - |
| 30 | 893.5 | 19.7 | 54 | 825 | 0 | 0 | 54 | 30 | 825 | 0 | Imp. | - |
| 31 | 894.5 | 22.8 | 59 | 1,043 | 0 | 0 | 59 | 40 | 1,043 | 0 | Imp. | - |
| 32 | 895.5 | 20.4 | 65 | 1,028 | 0 | 0 | 65 | 33 | 1,028 | 7 | 0.194 | 40 |
| 33 | 896.5 | 19.7 | 56 | 856 | 0 | 0 | 56 | 36 | 856 | 0 | Imp. | - |
| 34 | 897.5 | 19.0 | 58 | 854 | 0 | 0 | 58 | 32 | 854 | 0 | Imp. | - |
| 35 | 898.5 | 19.0 | 52 | 766 | 0 | 0 | 52 | 23 | 766 | 0 | Imp. | - |
| 36 | 899.5 | 18.0 | 66 | 922 | 0 | 0 | 66 | 24 | 922 | 0 | Imp. | - |
| 37 | 900.5 | 20.2 | 70 | 1,097 | 0 | 0 | 70 | 29 | 1,097 | 0 | Imp. | - |
| 38 | 901.5 | 20.5 | 60 | 954 | 0 | 0 | 60 | 26 | 954 | 0 | Imp. | - |
| 39 | 902.5 | 22.1 | 53 | 908 | 0 | 0 | 53 | 22 | 908 | 0 | Imp. | - |
| 40 | 903.5 | 16.0 | 29 | 360 | 0 | 0 | 29 | 67 | 360 | 0 | Imp. | - |
| 41 | 904.5 | 17.9 | 43 | 597 | 0 | 0 | 43 | 43 | 597 | 0 | Imp. | - |
| 42 | 905.5 | 16.4 | 67 | 852 | 0 | 0 | 67 | 28 | 852 | 0 | Imp. | - |

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

## Oilfield Research Laboratories

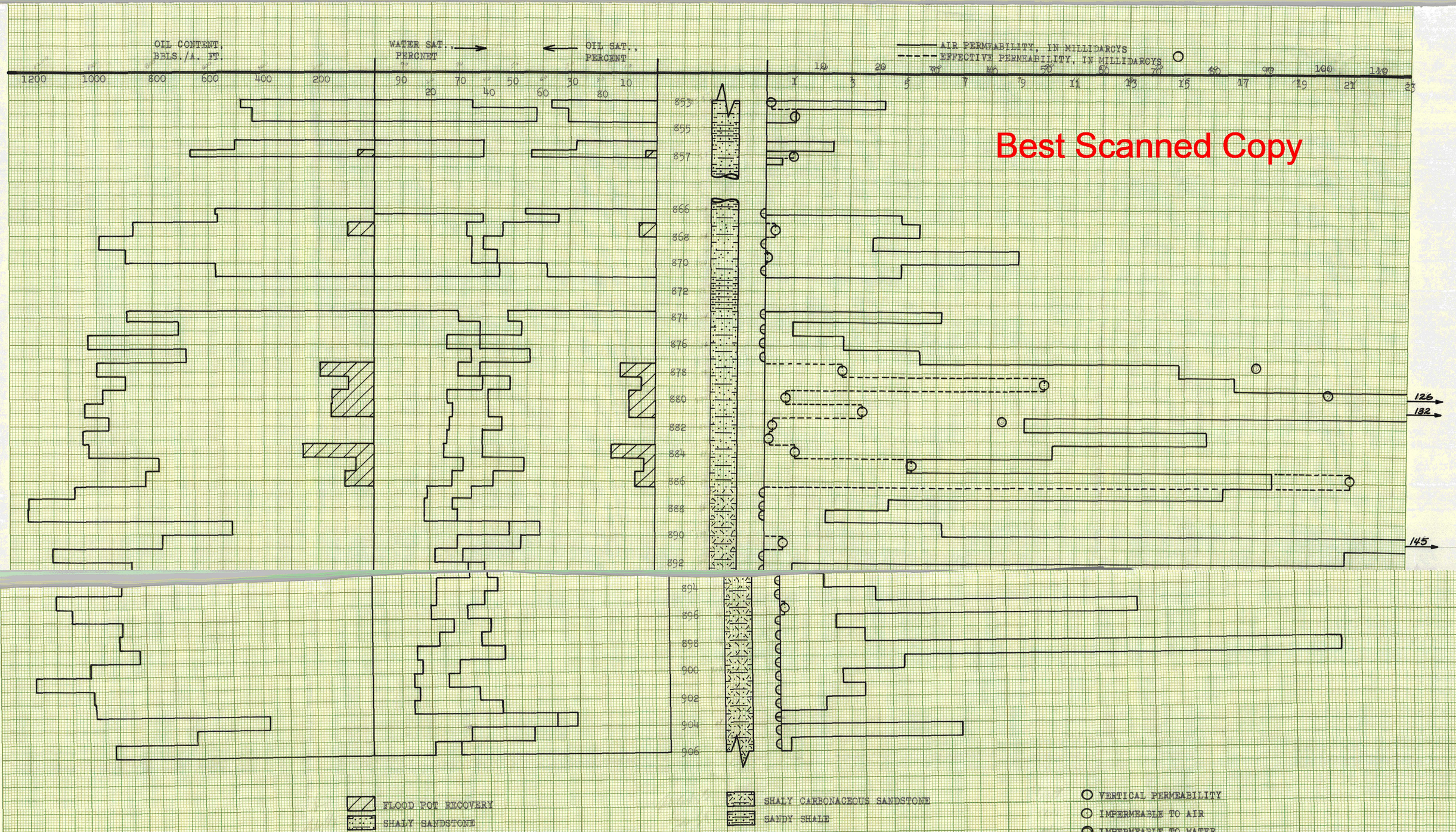
### SUMMARY OF LABORATORY FLOODING TESTS

### TABLE V

Company Wheeler Oil Company Lease Sallee Well No. J-18

| | |
|---|---|
| Depth Interval, Feet | 856.7 - 886.4 |
| Feet of Core Analyzed | 8.6 |
| Average Percent Porosity | 21.3 |
| Average Percent Original Oil Saturation | 55.4 |
| Average Percent Oil Recovery | 8.1 |
| Average Percent Residual Oil Saturation | 47.3 |
| Average Percent Residual Water Saturation | 48.9 |
| Average Percent Total Residual Fluid Saturation | 96.2 |
| Average Original Oil Content, Bbls./A. Ft. | 916. |
| Average Oil Recovery, Bbls./A. Ft. | 135. |
| Average Residual Oil Content, Bbls./A. Ft. | 781. |
| Total Original Oil Content, Bbls./Acre | 7,876. |
| Total Oil Recovery, Bbls./Acre | 1,158. |
| Total Residual Oil Content, Bbls./Acre | 6,718. |
| Average Effective Permeability, Millidarcys | 3.03 |
| Average Initial Fluid Production Pressure, p.s.i. | 34.0 |

NOTE: Only those samples which recovered oil were used in calculating the above averages.






FLOOD POT RECOVERY

SHALY SANDSTONE

SHALY CARBONACEOUS SANDSTONE

SANDY SHALE

VERTICAL PERMEABILITY

IMPERMEABLE TO AIR

IMPERMEABLE TO WATER

# WHEELER OIL COMPANY

SALLEE LEASE WELL NO. J-18

ALLEN COUNTY, KANSAS

| DEPTH INTERVAL, FEET | FEET OF CORE ANALYZED | AVERAGE POROSITY, PERCENT | AVG. OIL SATURATION PERCENT | AVG. WATER SATURATION PERCENT | AVG. OIL CONTENT BBLS./A.FT. | TOTAL OIL CONTENT BBLS./ACRE | AVG. AIR PERMEABILITY, MILLIDARCYS | CALCULATED OIL RECOVERY, BBLS./ACRE |
|---|---|---|---|---|---|---|---|---|
| 853.0 - 857.7 | 2.8 | 19.5 | 33.9 | 44.9 | 508 | 1,423 | 9.8 | |
| 866.0 - 886.4 | 17.9 | 21.0 | 53.6 | 31.9 | 875 | 15,668 | 52.4 | |
| 886.4 - 906.0 | 19.6 | 19.8 | 59.5 | 25.0 | 923 | 18,094 | 36.8 | |
| 853.0 - 906.0 | 40.3 | 20.3 | 55.0 | 29.1 | 873 | 35,185 | 41.9 | 1,870 |

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MAY, 1965