



# OILFIELD RESEARCH LABORATORIES

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

June 7, 1979

Lance Ballard  
820 Meadowbrook Road West  
Iola, Kansas 66749

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Cummings B Lease, Well No. 18, Woodson County, Kansas, and submitted to our laboratory on May 31, 1979.

The core was sampled and sealed in plastic bags by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

*Benjamin R. Pearman*  
Benjamin R. Pearman

SAM:km  
5 c to Iola, Kansas

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Lance Ballard Lease Cummings B Well No. 18

Location 175' NSL & 1,610' WEL NE

Section 18 Twp. 25S Rge. 16E County Woodson State Kansas

|                              |           |                |
|------------------------------|-----------|----------------|
| Name of Sand                 | - - - - - | Lower Squirrel |
| Top of Core                  | - - - - - | 990.0          |
| Bottom of Core               | - - - - - | 1002.0         |
| Top of Sand                  | - - - - - | 990.0          |
| Bottom of Sand               | - - - - - | 999.6          |
| Total Feet of Permeable Sand | - - - - - | 8.5            |
| Total Feet of Floodable Sand | - - - - - |                |

Distribution of Permeable Sand:  
Permeability Range  
Millidarcys

|            | Feet | Cum. Ft. |
|------------|------|----------|
| 0 - 10     | 5.5  | 5.5      |
| 10 - 20    | 2.0  | 7.5      |
| 20 & above | 1.0  | 8.5      |

|                                                                 |           |        |
|-----------------------------------------------------------------|-----------|--------|
| Average Permeability Millidarcys                                | - - - - - | 27.7   |
| Average Percent Porosity                                        | - - - - - | 16.3   |
| Average Percent Oil Saturation                                  | - - - - - | 54.3   |
| Average Percent Water Saturation                                | - - - - - | 30.4   |
| Average Oil Content, Bbls./A. Ft.                               | - - - - - | 692.   |
| Total Oil Content, Bbls./Acre                                   | - - - - - | 6,363. |
| 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                                                 | - - - - - |        |

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## LOG

Name Lance Ballard Lease Cummings B Well No. 18

| <u>Depth Interval,<br/>Feet</u> | <u>Description</u>                   |
|---------------------------------|--------------------------------------|
| 990.0 - 998.0                   | Dark brown slightly shaly sandstone. |
| 998.0 - 998.4                   | Gray shale.                          |
| 998.4 - 999.6                   | Dark shaly sandstone.                |
| 999.6 - 1002.0                  | Gray sandy shale.                    |

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## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Lance Ballard Lease Cummings B Well No. 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          | 990.5       | 14.3                       | 39                 | 47    | 86    | 433                       | 8.3          | 1.0          | 1.0      | 433               | 8.30                     |
| 2          | 991.5       | 18.0                       | 59                 | 17    | 76    | 824                       | 7.5          | 1.0          | 2.0      | 824               | 7.50                     |
| 3          | 992.5       | 18.9                       | 61                 | 18    | 79    | 894                       | 6.0          | 1.0          | 3.0      | 894               | 6.00                     |
| 4          | 993.5       | 18.0                       | 56                 | 23    | 79    | 782                       | 17.0         | 1.0          | 4.0      | 782               | 17.00                    |
| 5          | 994.5       | 17.9                       | 45                 | 31    | 76    | 625                       | 3.0          | 1.0          | 5.0      | 625               | 3.00                     |
| 6          | 995.5       | 18.0                       | 59                 | 20    | 79    | 824                       | 169.         | 1.0          | 6.0      | 824               | 169.00                   |
| 7          | 996.5       | 13.7                       | 46                 | 49    | 95    | 489                       | 20.          | 1.0          | 7.0      | 489               | 20.00                    |
| 8          | 997.5       | 14.4                       | 62                 | 34    | 96    | 693                       | 3.4          | 1.0          | 8.0      | 693               | 3.40                     |
| 9          | 998.9       | 14.2                       | 61                 | 33    | 94    | 672                       | 1.7          | 0.5          | 8.5      | 336               | 0.85                     |
| 10         | 999.5       | 14.2                       | 60                 | 35    | 95    | 661                       | Imp.         | 0.7          | 9.2      | 463               | 0.00                     |

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## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

| Company                 |                          | Lance Ballard                        |                                      | Lease                                  | Cummings B                            |                                    | Well No. | 18 |
|-------------------------|--------------------------|--------------------------------------|--------------------------------------|----------------------------------------|---------------------------------------|------------------------------------|----------|----|
| Depth Interval,<br>Feet | Feet of Core<br>Analyzed | Average Permeability,<br>Millidarcys |                                      | Permeability<br>Capacity<br>Ft. x Md.  |                                       |                                    |          |    |
| 990.0 - 999.6           | 8.5                      | 27.7                                 |                                      | 235.05                                 |                                       |                                    |          |    |
| 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 |          |    |
| 990.0 - 999.6           | 9.2                      | 16.3                                 | 54.3                                 | 30.4                                   | 692                                   | 6,363                              |          |    |