



# OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

December 2, 1966

Tom Kat, Incorporated  
1127 Wichita Plaza  
Wichita, Kansas

Gentlemen:

Enclosed herewith are the results of tests run on the Cable Tool core taken from the Crane Lease, Well No. 19, Chautauqua County, Kansas, and submitted to our laboratory on November 30, 1966.

This core was sampled and the samples sealed in cans by a representative of Oilfield Research Laboratories.

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                                                         | Tom Kat, Inc. | Lease    | Crane      | Well No. | 19           |
| Location                                                        | NE SW         |          |            |          |              |
| Section                                                         | 1             | Twp      | 35S        | Rge.     | 11E          |
|                                                                 |               | County   | Chautauqua |          | State Kansas |
| Name of Sand                                                    | -             |          |            |          | Peru         |
| Top of Core                                                     | -             |          |            |          | 1150.0       |
| Bottom of Core                                                  | -             |          |            |          | 1183.3       |
| Top of Sand                                                     | -             |          |            |          | 1153.4       |
| Bottom of Sand                                                  | -(Cored) -    |          |            |          | 1183.3       |
| Total Feet of Permeable Formation                               | -             |          |            |          | 24.7         |
| Total Feet of Floodable Sand                                    | -             |          |            |          |              |
| Distribution of Permeable Formation                             |               |          |            |          |              |
| Permeability Range<br>Millidarcys                               | Feet          | Cum. Ft. |            |          |              |
| 0 - 5                                                           | 8.5           | 8.5      |            |          |              |
| 5 - 10                                                          | 4.2           | 12.7     |            |          |              |
| 10 - 15                                                         | 3.6           | 16.3     |            |          |              |
| 15 - 20                                                         | 4.4           | 20.7     |            |          |              |
| 20 & above                                                      | 4.0           | 24.7     |            |          |              |
| Average Permeability Millidarcys                                | -             | 10.9     |            |          |              |
| Average Percent Porosity                                        | -             | 16.2     |            |          |              |
| Average Percent Oil Saturation                                  | -             | 19.2     |            |          |              |
| Average Percent Water Saturation                                | -             | 63.5     |            |          |              |
| Average Oil Content, Bbls./A. Ft.                               | -             | 234.     |            |          |              |
| Total Oil Content, Bbls./Acre                                   | -             | 6,630.   |            |          |              |
| 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 Tom Kat, Inc. Lease Crane Well No. 19

| Depth Interval,<br><u>Feet</u> | <u>Description</u> |
|--------------------------------|--------------------|
|--------------------------------|--------------------|

1150.0 - 1153.4 - Gray sandy shale.

1153.4 - 1158.5 - Grayish brown, fine grained sandstone.

1158.5 - 1159.7 - Soft, gray, sandy shale.

1159.7 - 1169.9 - Light brown, fine grained sandstone.

1169.9 - 1171.0 - Soft gray shale.

1171.0 - 1174.0 - Soft gray shale (discarded at well).

1174.0 - 1174.4 - Soft gray shale.

1174.4 - 1176.3 - Light brown, fine grained, shaly sandstone.

1176.3 - 1181.7 - Brownish gray, fine grained, shaly sandstone.

1181.7 - 1183.3 - Hard, light brown, fine grained sandstone.

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## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

| 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 |                           |              | Ft.          | Cum. Ft. |                   |                          |
| 1          | 1150.5      | 16.4                       | 30                 | 67    | 97                        | 266          | 0.62         | 1.0      | 266               | 0.62                     |
| 2          | 1151.5      | 15.3                       | 24                 | 72    | 96                        | 284          | Imp.         | 1.0      | 284               | 0.00                     |
| 3          | 1152.5      | 13.9                       | 12                 | 84    | 96                        | 127          | Imp.         | 1.4      | 178               | 0.00                     |
| 4          | 1153.5      | 15.1                       | 26                 | 71    | 97                        | 304          | 13.          | 0.6      | 182               | 7.80                     |
| 5          | 1154.5      | 14.0                       | 11                 | 80    | 91                        | 119          | 15.          | 1.0      | 119               | 15.00                    |
| 6          | 1155.5      | 16.2                       | 22                 | 61    | 83                        | 276          | 11.          | 1.0      | 276               | 11.00                    |
| 7          | 1156.5      | 18.1                       | 14                 | 54    | 68                        | 196          | 19.          | 1.0      | 196               | 19.00                    |
| 8          | 1157.5      | 19.0                       | 14                 | 61    | 75                        | 206          | 22.          | 1.0      | 206               | 22.00                    |
| 9          | 1158.4      | 19.3                       | 20                 | 57    | 77                        | 299          | -            | 0.5      | 149               | -                        |
| 9P         | 1158.6      | -                          | -                  | -     | -                         | -            | Imp.         | 0.5      | -                 | 0.00                     |
| 10         | 1159.5      | 11.6                       | 5                  | 81    | 86                        | 45           | 16.          | 0.7      | 31                | 11.20                    |
| 11         | 1160.5      | 19.0                       | 18                 | 53    | 71                        | 265          | 9.0          | 1.3      | 345               | 11.70                    |
| 12         | 1161.5      | 18.0                       | 16                 | 59    | 75                        | 223          | 3.8          | 1.0      | 223               | 3.80                     |
| 13         | 1162.5      | 19.1                       | 16                 | 59    | 75                        | 237          | 9.5          | 1.0      | 237               | 9.50                     |
| 14         | 1163.5      | 18.4                       | 7                  | 59    | 66                        | 100          | 18.          | 1.0      | 100               | 18.00                    |
| 15         | 1164.5      | 18.4                       | 20                 | 60    | 80                        | 285          | 13.          | 1.0      | 285               | 13.00                    |
| 16         | 1165.5      | 13.1                       | 29                 | 65    | 94                        | 295          | 27.          | 1.0      | 295               | 27.00                    |
| 17         | 1166.5      | 18.9                       | 24                 | 60    | 84                        | 352          | 21.          | 1.0      | 352               | 21.00                    |
| 18         | 1167.5      | 20.0                       | 24                 | 53    | 77                        | 373          | 30.          | 1.0      | 373               | 30.00                    |
| 19         | 1168.5      | 15.9                       | 35                 | 53    | 88                        | 432          | 3.3          | 1.0      | 432               | 3.30                     |
| 20         | 1169.5      | 15.2                       | 31                 | 52    | 83                        | 366          | 3.1          | 0.9      | 329               | 2.79                     |
| 21         | 1175.5      | 16.4                       | 20                 | 61    | 81                        | 255          | 5.0          | 1.9      | 485               | 9.50                     |
| 22         | 1176.5      | 18.0                       | 20                 | 59    | 79                        | 279          | 16.          | 0.7      | 195               | 11.20                    |
| 23         | 1177.5      | 15.8                       | 13                 | 72    | 85                        | 139          | 1.5          | 1.0      | 139               | 1.50                     |
| 24         | 1178.5      | 15.8                       | 18                 | 74    | 92                        | 196          | 13.          | 1.0      | 196               | 13.00                    |

Company Tom Kat, Inc.

Lease

Crane

Well No. 19

# Oilfield Research Laboratories

## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company \_\_\_\_\_ Lease \_\_\_\_\_ Well No. \_\_\_\_\_

| 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. |                   |                          |
| 25         | 1179.5      | 15.8                       | 8                  | 66    | 74    | 93                        | 2.1          | 1.0          | 25.5     | 93                | 2.10                     |
| 26         | 1180.5      | 15.6                       | 19                 | 66    | 85    | 230                       | 4.4          | 1.0          | 26.5     | 230               | 4.40                     |
| 27         | 1181.5      | 16.1                       | 20                 | 56    | 76    | 250                       | Imp.         | 0.7          | 27.2     | 175               | 0.00                     |
| 28         | 1182.5      | 9.1                        | 23                 | 63    | 86    | 162                       | 1.0          | 1.6          | 28.8     | 259               | 1.60                     |
| Total      |             |                            |                    |       |       |                           |              | Total        |          | 6,630             |                          |

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## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

| Company                 |  | Tom Kat, Inc.            |  | Lease                                   |  | Crane                                 |  | Well No.                               |  | 19                                    |  |
|-------------------------|--|--------------------------|--|-----------------------------------------|--|---------------------------------------|--|----------------------------------------|--|---------------------------------------|--|
| Depth Interval,<br>Feet |  | Feet of Core<br>Analyzed |  | Average<br>Permeability,<br>Millidarcys |  | Permeability<br>Capacity<br>Ft. x Md. |  |                                        |  |                                       |  |
| 1150.0 - 1159.7         |  | 6.3                      |  | 13.8                                    |  | 86.62                                 |  |                                        |  |                                       |  |
| 1159.7 - 1169.9         |  | 10.2                     |  | 13.7                                    |  | 140.09                                |  |                                        |  |                                       |  |
| 1174.4 - 1183.3         |  | 8.2                      |  | 5.3                                     |  | 43.30                                 |  |                                        |  |                                       |  |
| 1150.0 - 1183.3         |  | 24.7                     |  | 10.9                                    |  | 270.01                                |  |                                        |  |                                       |  |
| 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. |  |
| 1150.0 - 1159.7         |  | 9.2                      |  | 15.8                                    |  | 17.5                                  |  | 69.6                                   |  | 205                                   |  |
| 1159.7 - 1169.9         |  | 10.2                     |  | 17.7                                    |  | 21.8                                  |  | 57.1                                   |  | 291                                   |  |
| 1174.4 - 1183.3         |  | 8.9                      |  | 14.9                                    |  | 18.1                                  |  | 64.8                                   |  | 199                                   |  |
| 1150.0 - 1183.3         |  | 28.3                     |  | 16.2                                    |  | 19.2                                  |  | 63.5                                   |  | 234                                   |  |
|                         |  |                          |  |                                         |  |                                       |  |                                        |  | Total Oil<br>Content<br>Bbls./Acre    |  |
|                         |  |                          |  |                                         |  |                                       |  |                                        |  | 1,887                                 |  |
|                         |  |                          |  |                                         |  |                                       |  |                                        |  | 2,971                                 |  |
|                         |  |                          |  |                                         |  |                                       |  |                                        |  | 1,772                                 |  |
|                         |  |                          |  |                                         |  |                                       |  |                                        |  | 6,630                                 |  |