

OIL FIELD RESEARCH LABORATORIES  
CHANUTE, KANSAS

March 24, 1951

Mr. M. C. Colt  
Iola, Kansas

Dear Sir:

Attached hereto are the results of effective permeability tests made on the Cable Tool core taken from the Grubaugh Lease, Well No. 5-A, Allen County, Kansas, and submitted to our laboratory on March 11, 1951.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Clayton A. Nattier

CAN:pmd  
c.c.

27-24-21E

5-A

Grubaugh

TWP 24S RGE 21E SEC 27

LOG

Company M. C. Colt Lease Grubaugh Well No. 5-A

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

|                 |                                                                  |
|-----------------|------------------------------------------------------------------|
| 699.20 - 699.55 | - Cuttings.                                                      |
| 699.55 - 700.25 | - Hard gray calcareous sandstone.                                |
| 700.25 - 702.40 | - Gray shaley sandstone.                                         |
| 702.40 - 703.05 | - Gray shale.                                                    |
| 703.05 - 703.95 | - Laminated sandy shale.                                         |
| 703.95 - 706.65 | - Cuttings.                                                      |
| 706.65 - 709.70 | - Soft gray shale.                                               |
| 709.70 - 710.95 | - Gray sandy shale.                                              |
| 710.95 - 711.85 | - Cuttings.                                                      |
| 711.85 - 714.40 | - Finely laminated sandy shale.                                  |
| 714.40 - 714.75 | - Light brown fine grained laminated micaceous shaley sandstone. |
| 714.75 - 717.90 | - Brown medium grained micaceous sandstone.                      |
| 717.90 - 720.95 | - Brown fine grained micaceous sandstone.                        |
| 720.95 - 721.45 | - Light brown fine grained micaceous sandstone.                  |
| 721.45 - 721.65 | - Brown fine grained micaceous sandstone.                        |
| 721.65 - 722.05 | - Hard light brown fine grained micaceous sandstone.             |
| 722.05 - 724.70 | - Brown fine grained micaceous sandstone.                        |
| 724.70 - 727.60 | - Light brown fine grained micaceous sandstone.                  |
| 727.60 - 729.20 | - Brown fine grained micaceous sandstone.                        |
| 729.20 - 729.45 | - Brown medium grained micaceous calcareous sandstone.           |
| 729.45 - 729.85 | - Brown fine grained micaceous sandstone.                        |
| 729.85 - 731.40 | - Dark brown fine grained micaceous sandstone.                   |
| 731.40 - 734.35 | - Brown fine grained micaceous sandstone.                        |
| 734.35 - 734.80 | - Dark fine grained micaceous carbonaceous sandstone.            |
| 734.80 - 735.20 | - Laminated sandy shale.                                         |

- 735.20 - 735.95 - Brown fine grained micaceous carbonaceous sandstone.
- 735.95 - 736.63 - Brown fine grained slightly laminated micaceous shaley sandstone containing a shale break.
- 736.63 - 736.80 - Gray shale.
- 736.80 - 738.40 - Dark brown fine grained micaceous carbonaceous sandstone.
- 738.40 - 740.05 - Dark fine grained micaceous carbonaceous sandstone.
- 740.05 - 740.20 - Laminated sandy shale.
- 740.20 - 740.95 - Dark fine grained micaceous carbonaceous sandstone.
- 740.95 - 741.20 - Gray shale.
- 741.20 - 742.75 - Dark fine grained micaceous carbonaceous sandstone.
- 742.75 - 744.20 - Coal.

Oil Field Research Laboratories

SHOT RECOMMENDATION

Company M. C. Colt Lease Grubaugh Well No. 5-A

| <u>Depth Interval,<br/>Feet</u> | <u>Feet of<br/>Sand</u> | <u>Size of Shell<br/>Inches</u> | <u>Qts./Ft.</u> | <u>Total Quarts</u> |
|---------------------------------|-------------------------|---------------------------------|-----------------|---------------------|
| 723.0 - 733.5                   | 10.5                    | 3½                              | 2.0             | 21.0                |

Recommended Packer Setting  
Note: Plug hole back to

715.5  
734.5

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RESULTS OF EFFECTIVE PERMEABILITY TESTS

TABLE I

Company M. C. Colt Lease Grubaugh Well No. 5-A

| Sample No. | Depth Ft. | Effective<br>Permeability<br>Millidarcys | Feet of Sand<br>Ft. | Cum. Ft. |
|------------|-----------|------------------------------------------|---------------------|----------|
| 1          | 714.50    | Imp.                                     | 0.35                | 0.35     |
| 2          | 715.63    | 13.68                                    | 1.40                | 1.75     |
| 3          | 716.64    | 30.10                                    | 0.95                | 2.70     |
| 4          | 717.50    | 12.57                                    | 0.80                | 3.50     |
| 5          | 718.50    | 16.13                                    | 1.10                | 4.60     |
| 6          | 719.50    | 11.35                                    | 1.00                | 5.60     |
| 7          | 720.50    | 14.83                                    | 0.95                | 6.55     |
| 8          | 721.36    | 0.007                                    | 0.70                | 7.25     |
| 9          | 722.34    | 3.58                                     | 0.85                | 8.10     |
| 10         | 723.50    | 6.86                                     | 1.10                | 9.20     |
| 11         | 724.50    | 0.706                                    | 0.70                | 9.90     |
| 12         | 725.20    | 4.50                                     | 1.10                | 11.00    |
| 13         | 726.40    | 1.08                                     | 1.05                | 12.05    |
| 14         | 727.30    | 0.940                                    | 0.75                | 12.80    |
| 15         | 728.20    | 7.94                                     | 1.60                | 14.40    |
| 16         | 729.50    | 11.90                                    | 0.40                | 14.80    |
| 17         | 730.63    | 2.50                                     | 1.55                | 16.35    |
| 18         | 731.60    | 5.74                                     | 0.80                | 17.15    |
| 19         | 732.70    | 4.41                                     | 1.10                | 18.25    |
| 20         | 734.10    | 5.72                                     | 1.05                | 19.30    |
| 21         | 735.24    | 0.535                                    | 0.75                | 20.05    |
| 22         | 736.84    | Imp.                                     | 0.60                | 20.65    |
| 23         | 738.00    | Imp.                                     | 1.00                | 21.65    |
| 24         | 738.95    | Imp.                                     | 1.05                | 22.70    |
| 25         | 739.95    | Imp.                                     | 0.60                | 23.30    |
| 26         | 741.23    | Imp.                                     | 0.65                | 23.95    |
| 27         | 742.45    | Imp.                                     | 0.90                | 24.85    |

SUMMARY OF PERMEABILITY TESTS

TABLE II

Company M. C. Colt Lease Grubaugh Well No. 5-A

| <u>Depth Interval,<br/>Feet</u> | <u>Feet of Core<br/>Analyzed</u> | <u>Average Effective<br/>Permeability<br/>Millidarcys</u> |
|---------------------------------|----------------------------------|-----------------------------------------------------------|
| 714.75 - 720.95                 | 6.20                             | 16.29                                                     |
| 722.05 - 735.95                 | 13.50                            | 4.35                                                      |
| 715.50 - 734.50                 | 18.20                            | 7.99                                                      |