

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                              |             |                |
|--------------------------------------------------------|------------------------------|-------------|----------------|
| Company                                                | Abercrombie Drilling Inc.    | Test No.    | 1              |
| Well Name & Number                                     | Cook B #1                    | Zone Tested | Topeka         |
| Company Address                                        | 801 Union Center Wichita Ks. | Date        | 10/5/84        |
| Company Rep.                                           | Steve Frankcamp              | Tester      | Kenneth Cheney |
| Contractor                                             | Company tools                | Elevation   | 1980 KB        |
| Location: Sec. 18 Twp. 7s Rge. 20w Co. Rooks State Ks. | Est. Feet of Pay             |             |                |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3094 Clock # 22345

(A) Initial Hydrostatic Mud 1600 PSI

(B) First Initial Flow Pressure 114 PSI

(C) First Final Flow Pressure 492 PSI

(D) Initial Shut-in Pressure 1193 PSI

(E) Second Initial Flow Pressure 579 PSI

(F) Second Final Flow Pressure 989 PSI

(G) Final Shut-in Pressure 1188 PSI

(H) Final Hydrostatic Mud 1572 PSI

Temperature 121

Mud Weight 9.3 Viscosity 40

Fluid Loss 12.0

Interval Tested 3087-3102

Anchor Length 15

Top Packer Depth 3082

Bottom Packer Depth 3087

Total Depth 3102

Drill Pipe Size 4½ XH

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 2108

Recovered 2108 Feet Of saltwater with scum of oil.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Circulating Sub Price of Job \$655.00

Recorder No. 11020 Type AK-1 Range 3900 PSI

Recorder Depth 3097 Clock # 26195

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

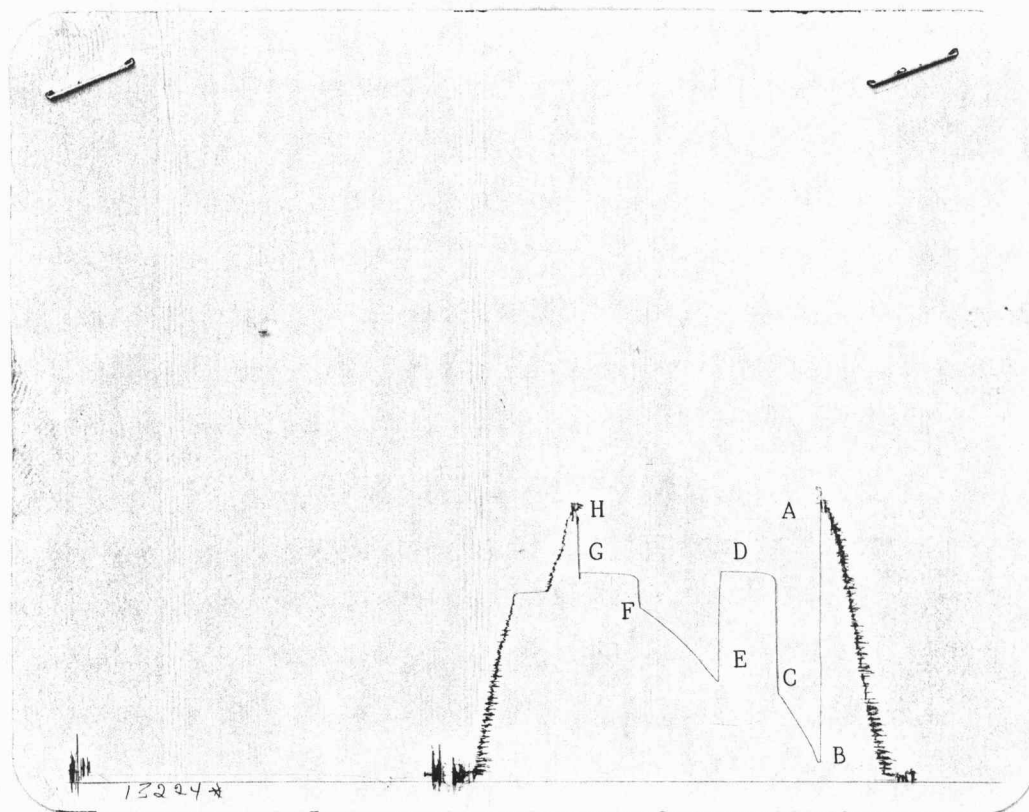
Tool Open @ 2:15 AM

Blow Remarks 1st open: Strong blow off bottom of bucket.

2nd open: Same

Dropped bar to circulate water off.

Mud Chlorides: 30,000 ppm



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1600          | PSI            |
| (B) First Initial Flow Pressure .....  | 114           | PSI            |
| (C) First Final Flow Pressure .....    | 492           | PSI            |
| (D) Initial Closed-in Pressure .....   | 1193          | PSI            |
| (E) Second Initial Flow Pressure ..... | 579           | PSI            |
| (F) Second Final Flow Pressure .....   | 989           | PSI            |
| (G) Final Closed-in Pressure .....     | 1188          | PSI            |
| (H) Final Hydrostatic Mud .....        | 1572          | PSI            |

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## DRILL-STEM TEST DATA

|                                                        |                              |                  |              |
|--------------------------------------------------------|------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie Inc.        | Test No.         | 2            |
| Well Name & Number                                     | Cook B #1                    | Zone Tested      | Lansing A    |
| Company Address                                        | 801 Union Center Wichita Ks. | Date             | 10/5/84      |
| Company Rep.                                           | Steve Frankamp               | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling Inc.    | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                              | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI  
 Recorder Depth 3187 Clock # 22993  
 (A) Initial Hydrostatic Mud 1600 PSI  
 (B) First Initial Flow Pressure 148 PSI  
 (C) First Final Flow Pressure 283 PSI  
 (D) Initial Shut-in Pressure 1032 PSI  
 (E) Second Initial Flow Pressure 382 PSI  
 (F) Second Final Flow Pressure 514 PSI  
 (G) Final Shut-in Pressure 1139 PSI  
 (H) Final Hydrostatic Mud 1535 PSI  
 Temperature \_\_\_\_\_  
 Mud Weight 9.1 Viscosity 47  
 Fluid Loss 10.4  
 Interval Tested 3139-3192  
 Anchor Length 53  
 Top Packer Depth 3134  
 Bottom Packer Depth 3139  
 Total Depth 3192  
 Drill Pipe Size 4½ Xh  
 Wt. Pipe I. D. 2.7 Ft. Run 319  
 Recovery-Total Feet 1167

Recorder No. 13804 Type AK-1 Range 4150 PSI  
 Recorder Depth 3184 Clock # 31197  
 Tool Open Before I.S.I. 30 Mins.  
 Initial Shut-in 45 Mins.  
 Flow Period 60 Mins.  
 Final Shut-in 45 Mins.  
 Top Choke Size 1" Hole Size 7 7/8"  
 Bottom Choke Size 3/4" Rubber Size 6 3/4"  
 Tool Open @ 3:50 PM

Blow Remarks 1st open: Very strong blow, off bottom of bucket in 5 minutes.  
 2nd open: Very strong blow, off bottom of bucket in 4 minutes.

Mud chlorides: 21,000 ppm

Resistivity: 0.31 ohms @ 69.8°F

Recovered 320 Feet Of gas in pipe.  
 Recovered 175 Feet Of mud cut oil, 35% mud, 3% gas, 2% water, 60% oil.  
 Recovered 868 Feet Of frothy oil. Gravity: 27 API corrected.  
 Recovered 62 Feet Of gassy watery oil, 20% mud, 30% water, 30% oil, 20% gas.  
 Recovered 62 Feet Of oily water, 15% mud, 15% oil, 70% water.  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_

Extra Equipment \_\_\_\_\_ Price of Job \$625.00

# INITIAL SHUT-IN

=====

RECORDER NO: 13224 DEPTH: 3192 FT.  
INITIAL FLOW TIME (T): 30 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(P SIG) |
|---------|----------------|-----------------|
| 0       | 0.000          | 270.4           |
| 5       | 0.845          | 807.0           |
| 10      | 0.602          | 918.2           |
| 15      | 0.477          | 960.7           |
| 20      | 0.398          | 983.6           |
| 25      | 0.342          | 996.7           |
| 30      | 0.301          | 1008.7          |
| 35      | 0.269          | 1015.3          |
| 40      | 0.243          | 1019.6          |
| 45      | 0.222          | 1021.8          |

# FINAL SHUT-IN

=====

RECORDER NO: 13224 DEPTH: 3192 FT.  
TOTAL FLOW TIME: 90 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(P SIG) |
|---------|----------------|-----------------|
| 0       | 0.000          | 501.6           |
| 5       | 1.279          | 892.0           |
| 10      | 1.000          | 1006.5          |
| 15      | 0.845          | 1051.2          |
| 20      | 0.740          | 1077.4          |
| 25      | 0.663          | 1097.0          |
| 30      | 0.602          | 1111.2          |
| 35      | 0.553          | 1123.2          |
| 40      | 0.512          | 1133.0          |
| 45      | 0.477          | 1138.5          |

CHENEY TESTING CO, INC.  
CALCULATION OF FORMATION CHARACTERISTICS  
FROM DST DATA

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FOR: A.L. ABERCROMBIE INC.  
COOK B #1 DST # 2  
SEC 28-7S-20W FORMATION:  
ROOKS COUNTY, KANSAS ELEVATION: 1988 KB

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TEST PARAMETERS

|                                   |                                 |
|-----------------------------------|---------------------------------|
| TEST INTERVAL: 3139 - 3192        | EST PAY: 4                      |
| TIME INTERVAL: 30 - 45 - 60 - 45  | VISCOSITY OF FLUID: 10          |
| INITIAL FLOW PRESS: 146.1- 270.4  | HOLE SIZE: 7.875                |
| FINAL FLOW PRESS: 367.5- 501.6    | D.C. CAPACITY: 0.00000          |
| SHUT-IN PRESS(I-F): 1021.8-1138.5 | W.P. CAPACITY: 0.00708          |
| BOTTOM HOLE TEMPERATURE: 0        | D.P. CAPACITY: 0.01402          |
| TOTAL FEET OF RECOVERY: 1167      | TOTAL BARRELS RECOVERY: 14.1471 |

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EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1053  
SLOPE (PSI-CYCLE): 138 POINTS USED: 3

EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 1208  
SLOPE (PSI-CYCLE): 148 POINTS USED: 2

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CALCULATIONS

|                                          |           |
|------------------------------------------|-----------|
| AVERAGE PRODUCTION RATE (B/D)            | : 226.35  |
| TRANSMISSIBILITY (MD-FT/CP)              | : 248.68  |
| PERMEABILITY (MD)                        | : 621.71  |
| PRODUCTIVITY INDEX (B/D/PSI)             | : 0.1874  |
| DAMAGE RATIO                             | : 0.873   |
| APPROXIMATE RADIUS OF INVESTIGATION (FT) | : 236.5   |
| DRAWDOWN FACTOR (%)                      | :         |
| POTENTIOMETRIC SURFACE (FT)              | : 1597.35 |

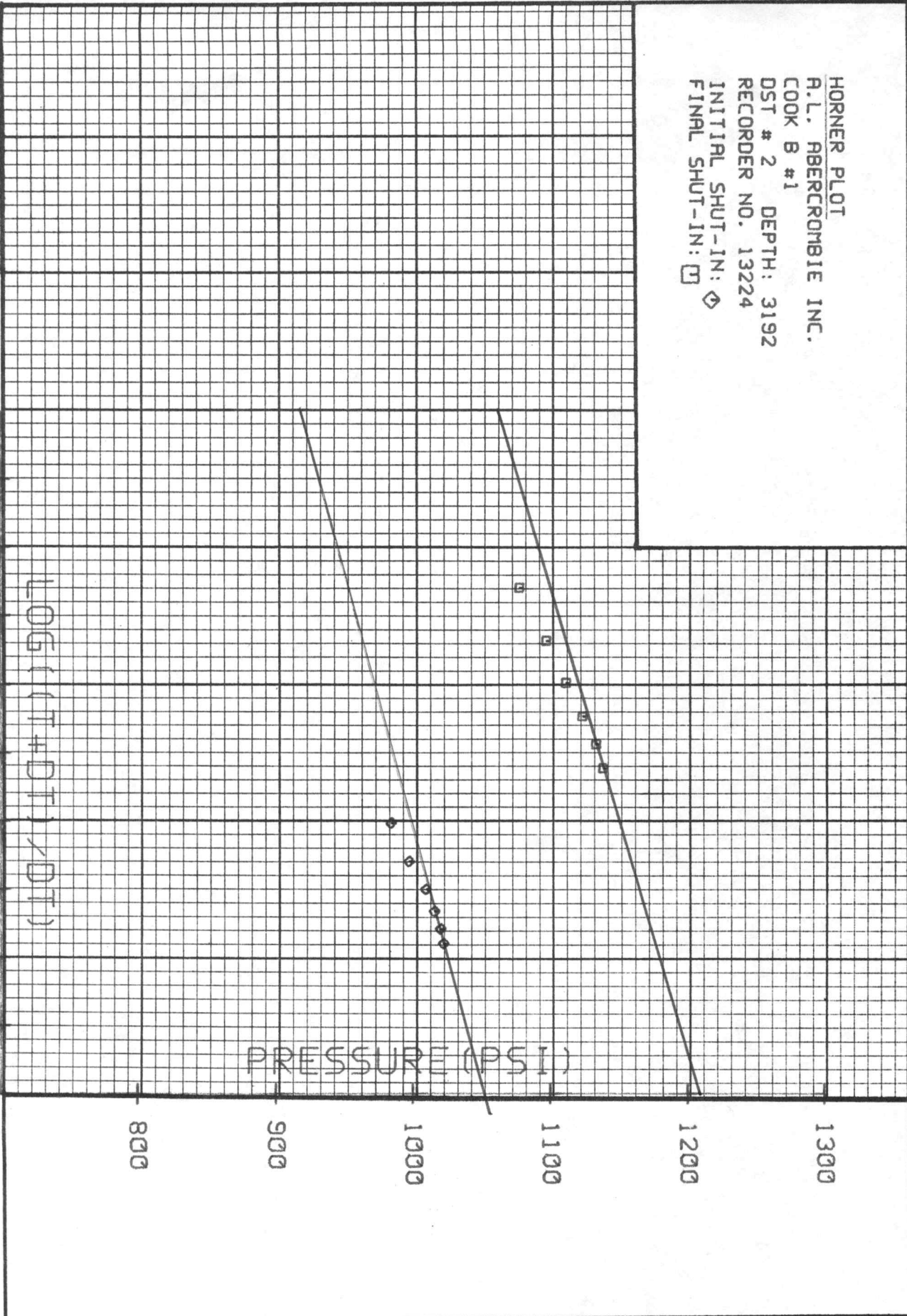
HORNER PLOT  
 A.L. ABERCROMBIE INC.  
 COOK B #1  
 DST # 2 DEPTH: 3192  
 RECORDER NO. 13224  
 INITIAL SHUT-IN:  $\diamond$   
 FINAL SHUT-IN:  $\square$

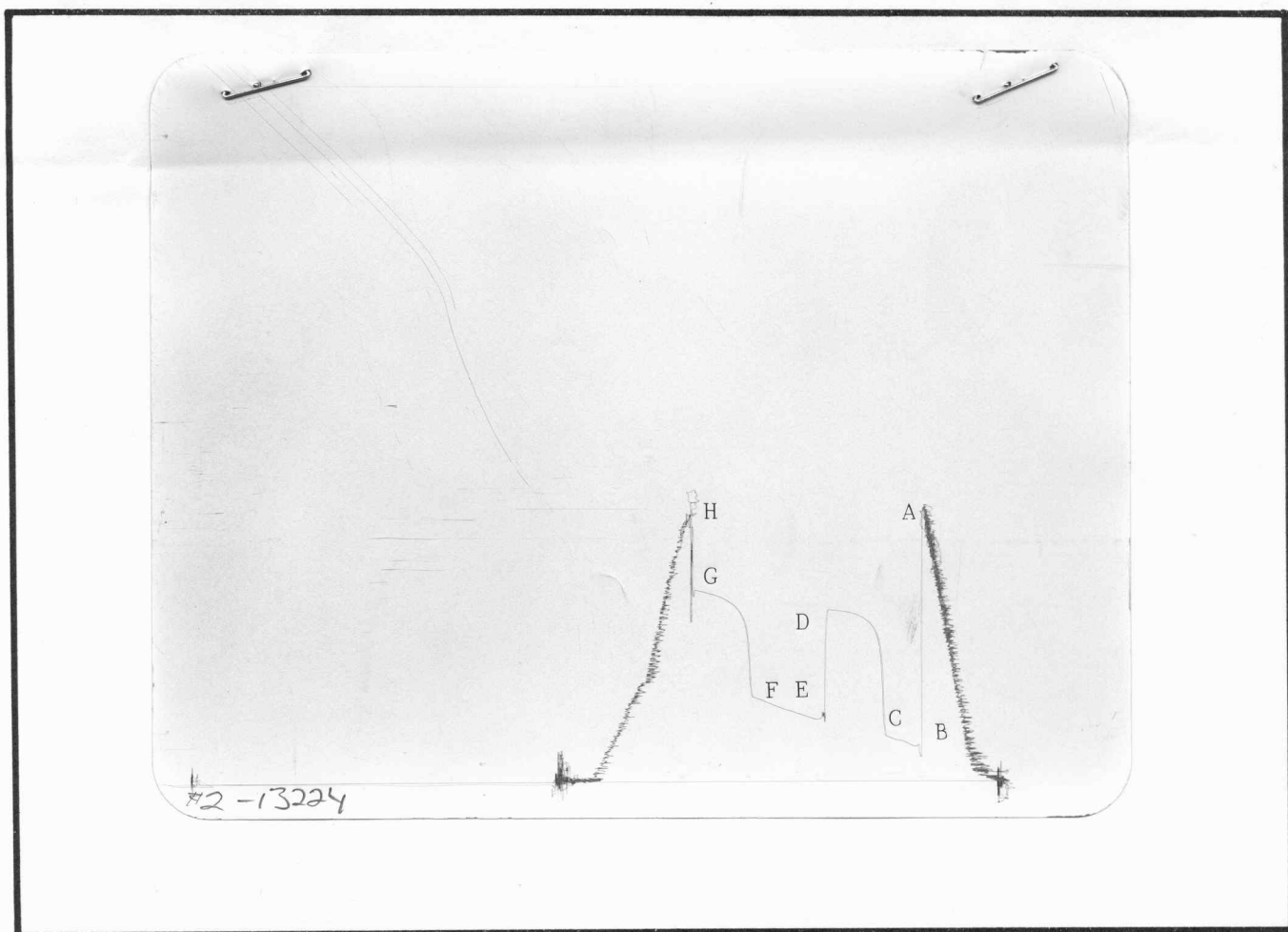
1.0  
0.9  
0.8  
0.7  
0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0.0

$\log((T+DT)/DT)$

PRESSURE (PSI)

800  
900  
1000  
1100  
1200  
1300





This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |     |
|----------------------------------------|---------------|----------------|-----|
|                                        | Field Reading | Office Reading |     |
| (A) Initial Hydrostatic Mud .....      | 1600          | 1595           | PSI |
| (B) First Initial Flow Pressure .....  | 148           | 146.1          | PSI |
| (C) First Final Flow Pressure .....    | 283           | 270.4          | PSI |
| (D) Initial Closed-in Pressure .....   | 1032          | 1021.8         | PSI |
| (E) Second Initial Flow Pressure ..... | 382           | 367.5          | PSI |
| (F) Second Final Flow Pressure .....   | 514           | 501.6          | PSI |
| (G) Final Closed-in Pressure .....     | 1139          | 1138.5         | PSI |
| (H) Final Hydrostatic Mud .....        | 1535          | 1530           | PSI |

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## DRILL-STEM TEST DATA

|                                                        |                              |                  |              |
|--------------------------------------------------------|------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie Inc.        | Test No.         | 3            |
| Well Name & Number                                     | Cook B #1                    | Zone Tested      | Lansing      |
| Company Address                                        | 801 Union Center Wichita Ks. | Date             | 10/6/84      |
| Company Rep.                                           | Steve Frankamp               | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling Inc.    | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                              | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3227 Clock # 22993

(A) Initial Hydrostatic Mud 1647 PSI

(B) First Initial Flow Pressure 254 PSI

(C) First Final Flow Pressure 778 PSI

(D) Initial Shut-in Pressure 1171 PSI

(E) Second Initial Flow Pressure 850 PSI

(F) Second Final Flow Pressure 1119 PSI

(G) Final Shut-in Pressure 1181 PSI

(H) Final Hydrostatic Mud 1585 PSI

Temperature

Mud Weight 9.1 Viscosity 47

Fluid Loss 10.4

Interval Tested 3210-3232

Anchor Length 22

Top Packer Depth 3205

Bottom Packer Depth 3210

Total Depth 3232

Drill Pipe Size 4 1/2 Xh

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 3232

Recovered 3232 Feet Of clean gassy oil. Gravity: 35 API corrected.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Circulating Sub Price of Job \$655.00

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3224 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 60 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 6:55 AM

Blow Remarks 1st open: Very strong blow, off bottom of bucket in 1 minute.

2nd open: Very strong blow, off bottom of bucket instantly.

Gas to surface 40 minutes into 1st shut in.

Oil to surface 55 minutes into 2nd open.

Mud Chlorides: 30,000 ppm

Resistivity: 0.22 ohms @ 74.8°F

# INITIAL SHUT-IN

=====

RECORDER NO: 7456      DEPTH: 3232 FT.  
 INITIAL FLOW TIME (T): 30 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(P SIG) |
|---------|----------------|-----------------|
| 0       | 0.000          | 783.9           |
| 5       | 0.845          | 1122.9          |
| 10      | 0.602          | 1148.3          |
| 15      | 0.477          | 1265.9          |
| 20      | 0.398          | 1273.3          |
| 25      | 0.342          | 1280.7          |
| 30      | 0.301          | 1285.0          |
| 35      | 0.269          | 1289.2          |
| 40      | 0.243          | 1292.4          |
| 45      | 0.222          | 1294.5          |

# FINAL SHUT-IN

=====

RECORDER NO: 7456      DEPTH: 3232 FT.  
 TOTAL FLOW TIME: 90 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(P SIG) |
|---------|----------------|-----------------|
| 0       | 0.000          | 1138.8          |
| 5       | 1.279          | 1165.3          |
| 10      | 1.000          | 1173.7          |
| 15      | 0.845          | 1179.0          |
| 20      | 0.740          | 1181.1          |
| 25      | 0.663          | 1182.2          |
| 30      | 0.602          | 1183.3          |
| 35      | 0.553          | 1185.4          |
| 40      | 0.512          | 1187.5          |
| 45      | 0.477          | 1188.6          |
| 50      | 0.447          | 1189.6          |
| 55      | 0.421          | 1190.7          |
| 60      | 0.398          | 1191.7          |

CHENEY TESTING CO, INC.  
CALCULATION OF FORMATION CHARACTERISTICS  
FROM DST DATA

\*\*\*\*\*

FOR: A.L. ABERCROMBIE INC.  
COOK B#1  
SEC 28-7S-20W  
ROOKS COUNTY, KANSAS

DST # 3  
FORMATION: LANSING  
ELEVATION: 1988 KB

\*\*\*\*\*

TEST PARAMETERS

|                                  |                                |
|----------------------------------|--------------------------------|
| TEST INTERVAL: 3210 - 3232       | EST PAY: 4                     |
| TIME INTERVAL: 30 - 45 - 60 - 60 | VISCOSITY OF FLUID: 3          |
| INITIAL FLOW PRESS: 258.5- 783.9 | HOLE SIZE: 7.875               |
| FINAL FLOW PRESS: 861.2-1138.8   | D.C. CAPACITY:0.00000          |
| SHUT-IN PRESS(I-F):1188.6-1191.7 | W.P. CAPACITY:0.00708          |
| BOTTOM HOLE TEMPERATURE: 130     | D.P. CAPACITY:0.01402          |
| TOTAL FEET OF RECOVERY: 3232     | TOTAL BARRELS RECOVERY:43.0989 |

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EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1320  
SLOPE (PSI-CYCLE): 118      POINTS USED: 6

EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 1200  
SLOPE (PSI-CYCLE): 35      POINTS USED: 6

\*\*\*\*\*

CALCULATIONS

|                                          |          |
|------------------------------------------|----------|
| AVERAGE PRODUCTION RATE (B/D)            | : 689.58 |
| TRANSMISSIBILITY (MD-FT/CP)              | :3203.60 |
| PERMEABILITY (MD)                        | :2402.70 |
| PRODUCTIVITY INDEX (B/D/PSI)             | : 0.5747 |
| DAMAGE RATIO                             | : 0.320  |
| APPROXIMATE RADIUS OF INVESTIGATION (FT) | : 465.0  |
| DRAWDOWN FACTOR (%)                      | : 9.091  |
| POTENTIOMETRIC SURFACE (FT)              | :1538.80 |

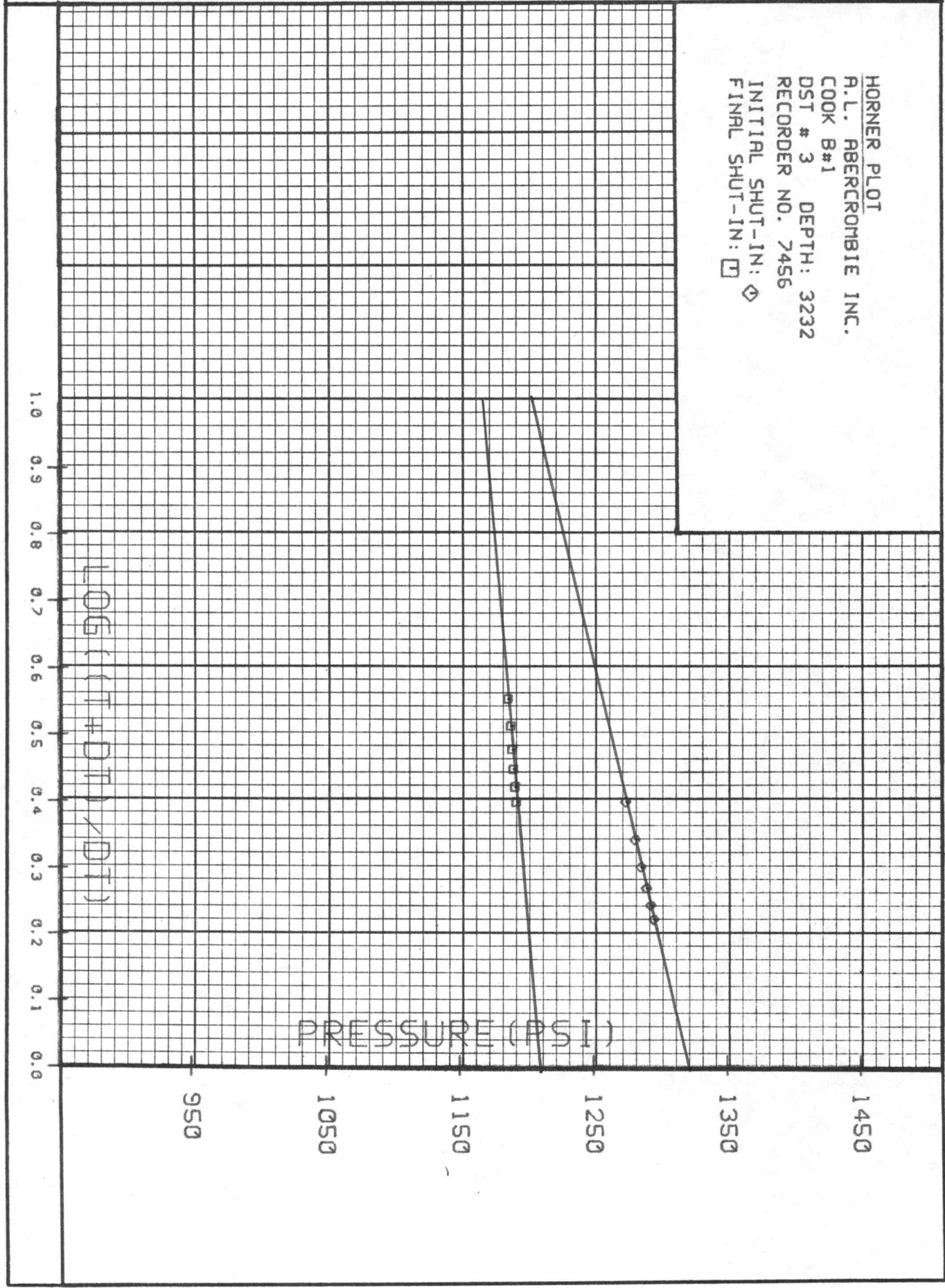
HORNER PLOT  
A.L. ABERCROMBIE INC.  
COOK B#1  
DST # 3 DEPTH: 3232  
RECORDER NO. 7456  
INITIAL SHUT-IN:  $\diamond$   
FINAL SHUT-IN:  $\square$

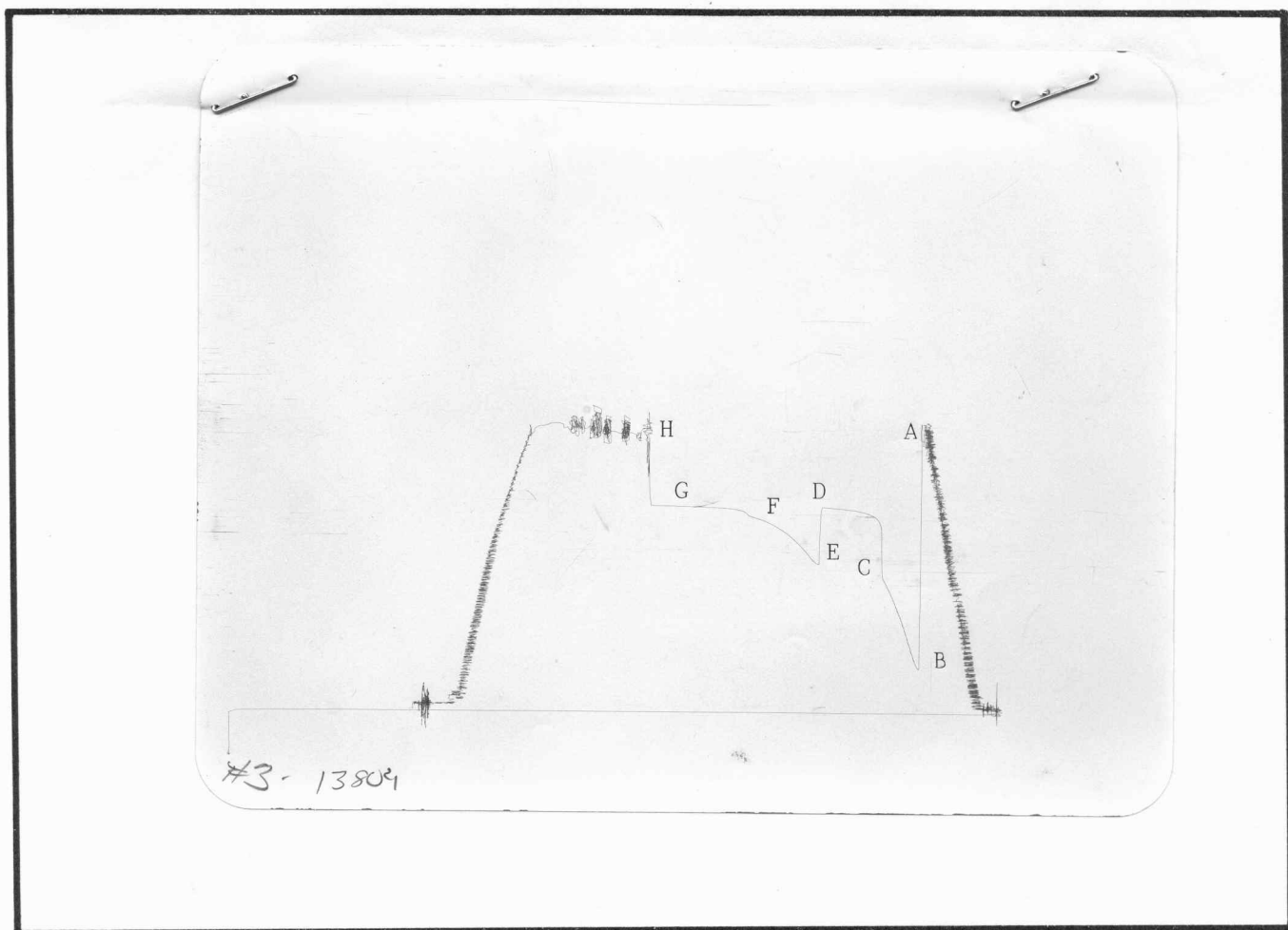
LOG ((T+DT)/DT)

PRESSURE (PSI)

1450  
1350  
1250  
1150  
1050  
950

1.0  
0.9  
0.8  
0.7  
0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0.0





This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1647          | 1642           |
| (B) First Initial Flow Pressure .....  | 254           | 258.5          |
| (C) First Final Flow Pressure .....    | 778           | 783.9          |
| (D) Initial Closed-in Pressure .....   | 1171          | 1188.6         |
| (E) Second Initial Flow Pressure ..... | 850           | 861.2          |
| (F) Second Final Flow Pressure .....   | 1119          | 1138.8         |
| (G) Final Closed-in Pressure .....     | 1181          | 1191.7         |
| (H) Final Hydrostatic Mud .....        | 1585          | 1580           |

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P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie Inc.         | Test No.         | 4            |
| Well Name & Number                                     | Cood B-1                      | Zone Tested      | Lansing      |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/6/84      |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3269 Clock # 22993

(A) Initial Hydrostatic Mud 1606 PSI

(B) First Initial Flow Pressure 137 PSI

(C) First Final Flow Pressure 466 PSI

(D) Initial Shut-in Pressure 1212 PSI

(E) Second Initial Flow Pressure 539 PSI

(F) Second Final Flow Pressure 881 PSI

(G) Final Shut-in Pressure 1212 PSI

(H) Final Hydrostatic Mud 1554 PSI

Temperature

Mud Weight 9.4 Viscosity 48

Fluid Loss 10.4

Interval Tested 3235-3274

Anchor Length 39

Top Packer Depth 3230

Bottom Packer Depth 3235

Total Depth 3274

Drill Pipe Size 4 1/2 XH

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 1940

Recovered 560 Feet Of Gas in Pipe.

Recovered 190 Feet Of Mud cut oil. 30% mud, 10% gas. 60% oil.

Recovered 580 Feet Of Clean Gassy Oil. Gravity: 37 API corrected.

Recovered 580 Feet Of Mud cut oil. 10% gas, 8% mud, 12% water, 70% oil.

Recovered 590 Feet Of Oil cut water. 8 % mud, 25% oil, 67% water.

Recovered Feet Of

Extra Equipment Circulating Sub

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3266 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 8:45 PM

Blow Remarks 1st open: Very strong blow,  
off bottom of bucket in 3 min.

2nd open: Very strong blow, off bottom  
of bucket in 2 min.

Mud chlorides: 29,00 ppm.

Resistivity: 0.26 ohms @ 62.7°F.

Recovery chlorides: 140,00 ppm.

Resisitivity: 0.07 ohms @ 64.5°F.

Price of Job \$655.00

# INITIAL SHUT-IN

=====

RECORDER NO: 7456 DEPTH: 3274 FT.  
INITIAL FLOW TIME (T): 30 MIN

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(PSTG) |
|---------|----------------|----------------|
| 0       | 0.000          | 476.7          |
| 5       | 0.845          | 1174.8         |
| 10      | 0.602          | 1199.2         |
| 15      | 0.477          | 1211.9         |
| 20      | 0.398          | 1220.3         |
| 25      | 0.342          | 1224.6         |
| 30      | 0.301          | 1228.8         |
| 35      | 0.269          | 1232.0         |
| 40      | 0.243          | 1234.1         |
| 45      | 0.222          | 1237.3         |

# FINAL SHUT-IN

=====

RECORDER NO: 7456 DEPTH: 3274 FT.  
TOTAL FLOW TIME: 90 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(PSIG) |
|---------|----------------|----------------|
| 0       | 0.000          | 902.5          |
| 5       | 1.279          | 1175.8         |
| 10      | 1.000          | 1197.0         |
| 15      | 0.845          | 1210.8         |
| 20      | 0.740          | 1218.2         |
| 25      | 0.663          | 1223.5         |
| 30      | 0.602          | 1227.8         |
| 35      | 0.553          | 1229.9         |
| 40      | 0.512          | 1232.0         |
| 45      | 0.477          | 1234.1         |

CHENEY TESTING CO. INC.  
CALCULATION OF FORMATION CHARACTERISTICS  
FROM DST DATA

\*\*\*\*\*

FOR: A.L. ABERCROMBIE INC.  
COOK B#1  
SEC 28-7S-20W  
ROOKS COUNTY, KANSAS

DST # 1  
FORMATION: LANSING  
ELEVATION: 1980 KB

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TEST PARAMETERS

|                                     |                                 |
|-------------------------------------|---------------------------------|
| TEST INTERVAL: 3235 - 3274          | EST PAY: 4                      |
| TIME INTERVAL: 30 - 45 - 60 - 45    | VISCOSITY OF FLUID: 2.75        |
| INITIAL FLOW PRESS: 144.1 - 476.7   | HOLE SIZE: 7.875                |
| FINAL FLOW PRESS: 545.5 - 902.5     | D.C. CAPACITY: 0.00000          |
| SHUT-IN PRESS(I-F): 1237.3 - 1234.1 | W.P. CAPACITY: 0.00708          |
| BOTTOM HOLE TEMPERATURE: 130        | D.P. CAPACITY: 0.01402          |
| TOTAL FEET OF RECOVERY: 1940        | TOTAL BARRELS RECOVERY: 24.9847 |

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EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PST): 1260  
SLOPE (PST-CYCLE): 110      POINTS USED: 5

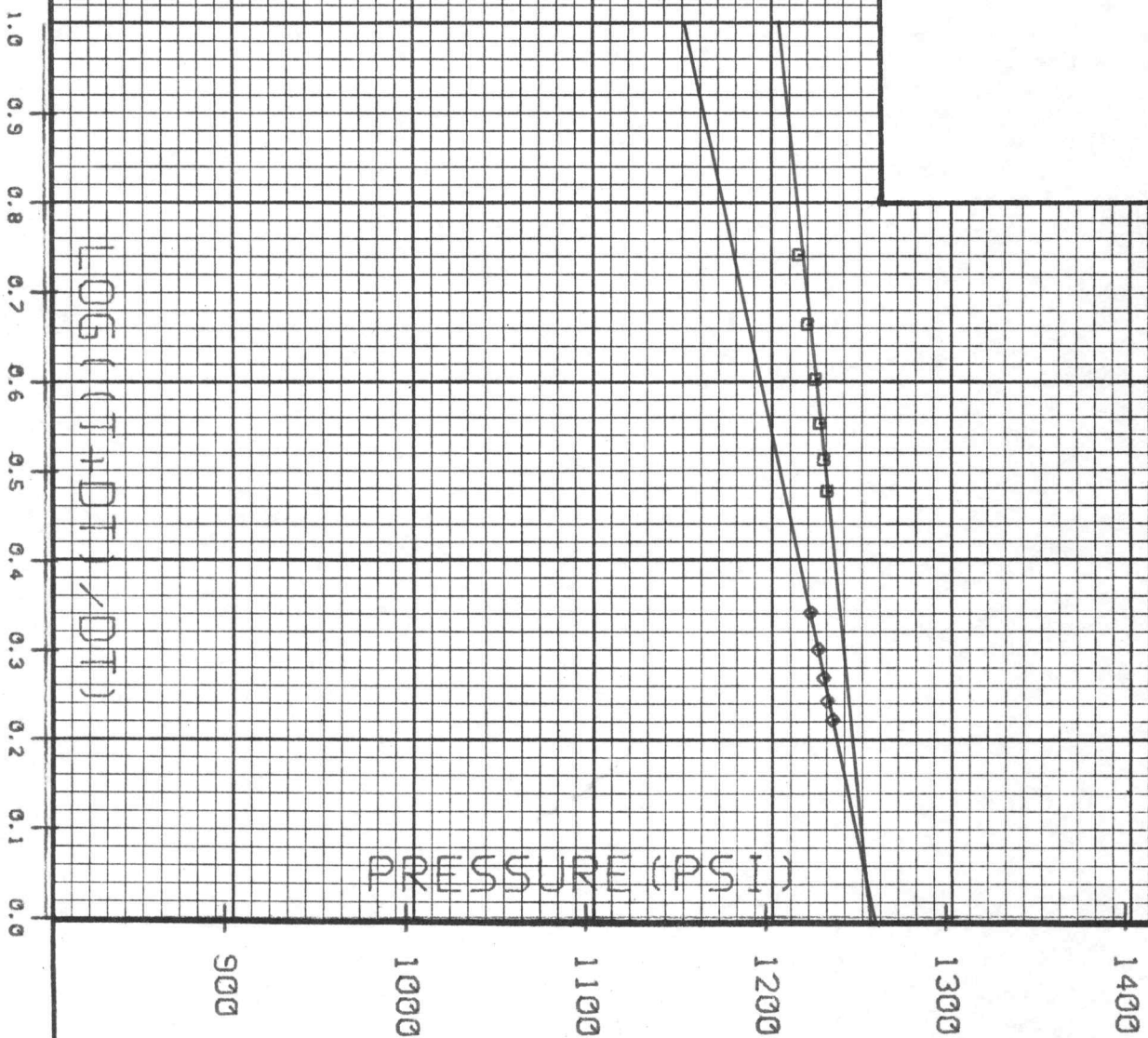
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PST): 1256  
SLOPE (PST-CYCLE): 52      POINTS USED: 6

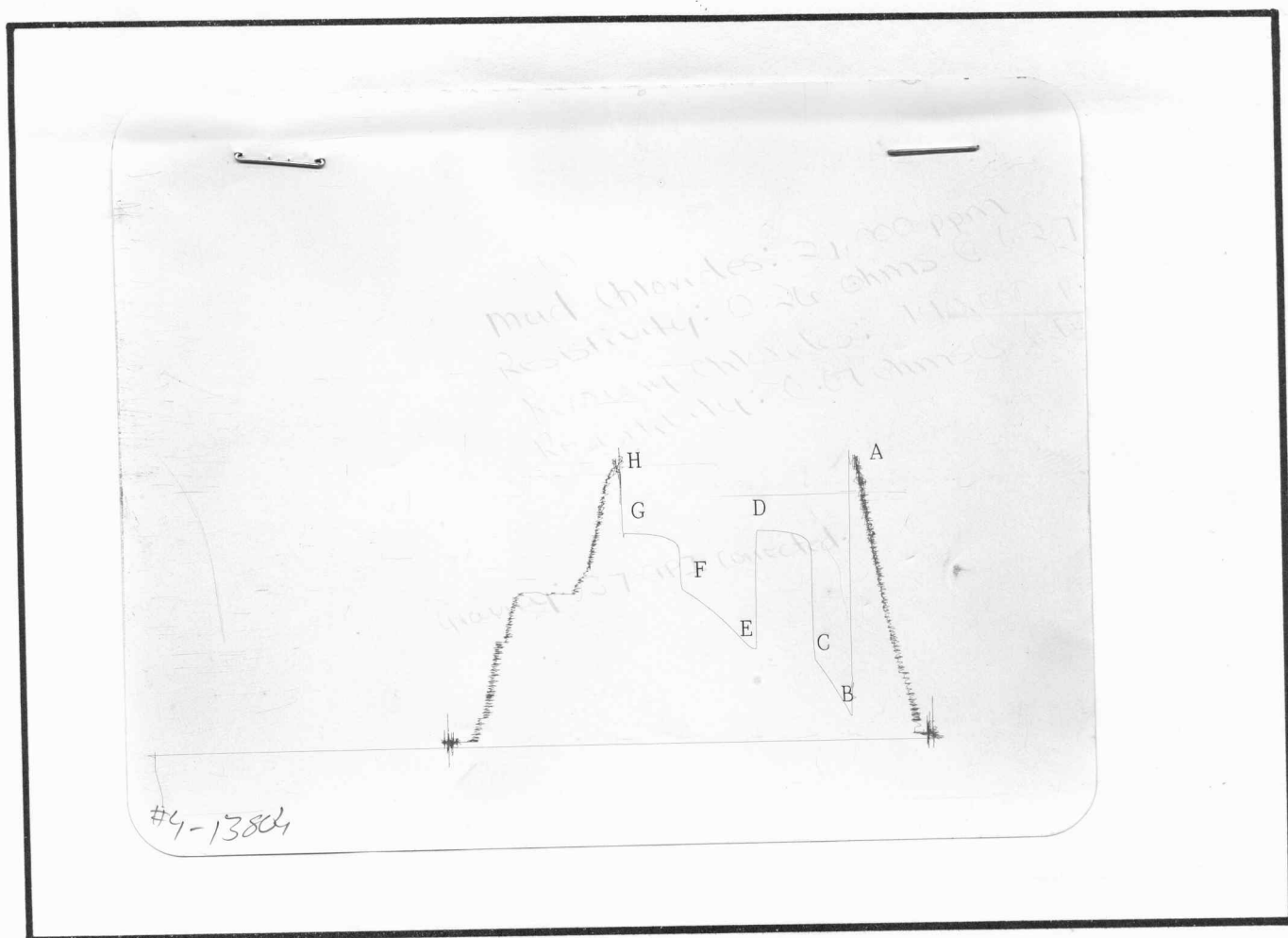
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CALCULATIONS

|                                          |           |
|------------------------------------------|-----------|
| AVERAGE PRODUCTION RATE (B/D)            | : 399.76  |
| TRANSMISSIBILITY (MD-FT/CP)              | : 1250.00 |
| PERMEABILITY (MD)                        | : 859.38  |
| PRODUCTIVITY INDEX (B/D/PST)             | : 0.3183  |
| DAMAGE RATIO                             | : 1.244   |
| APPROXIMATE RADIUS OF INVESTIGATION (FT) | : 278.1   |
| DRAWDOWN FACTOR (%)                      | : 0.317   |
| POTENTIOMETRIC SURFACE (FT)              | : 1618.66 |

HORNER PLOT  
A.L. ABERCROMBIE INC.  
COOK B#1  
DST # 1 DEPTH: 3274  
RECORDER NO. 7456  
INITIAL SHUT-IN:  $\diamond$   
FINAL SHUT-IN:  $\square$





This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1606          | 1601 PSI       |
| (B) First Initial Flow Pressure .....  | 137           | 144.1 PSI      |
| (C) First Final Flow Pressure .....    | 466           | 476.7 PSI      |
| (D) Initial Closed-in Pressure .....   | 1212          | 1237.3 PSI     |
| (E) Second Initial Flow Pressure ..... | 539           | 545.5 PSI      |
| (F) Second Final Flow Pressure .....   | 881           | 902.5 PSI      |
| (G) Final Closed-in Pressure .....     | 1212          | 1234.1 PSI     |
| (H) Final Hydrostatic Mud .....        | 1554          | 1549 PSI       |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 5            |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Lansing      |
| Company Address                                        | 801 union Center Wichita, Ks. | Date             | 10/7/84      |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3279 Clock # 22993

(A) Initial Hydrostatic Mud 1697 PSI

(B) First Initial Flow Pressure 57 PSI

(C) First Final Flow Pressure 92 PSI

(D) Initial Shut-in Pressure 1053 PSI

(E) Second Initial Flow Pressure 103 PSI

(F) Second Final Flow Pressure 193 PSI

(G) Final Shut-in Pressure 1053 PSI

(H) Final Hydrostatic Mud 1621 PSI

Temperature

Mud Weight 9.4 Viscosity 48

Fluid Loss 10.4

Interval Tested 3276-3282

Anchor Length 6

Top Packer Depth 3276

Bottom Packer Depth 3276

Total Depth 3282

Drill Pipe Size 4 1/2 X.H.

Wt. Pipe I. D. Ft. Run

Recovery-Total Feet 400

Recovered 120 Feet Of Muddy water with few specks of oil.

Recovered 280 Feet Of Salt water.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$625.00

Recorder No. 13809 Type AK-1 Range 4150 PSI

Recorder Depth 3269 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 65 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 9:20 AM

Blow Remarks 1st open: Good blow built to 7 inches.

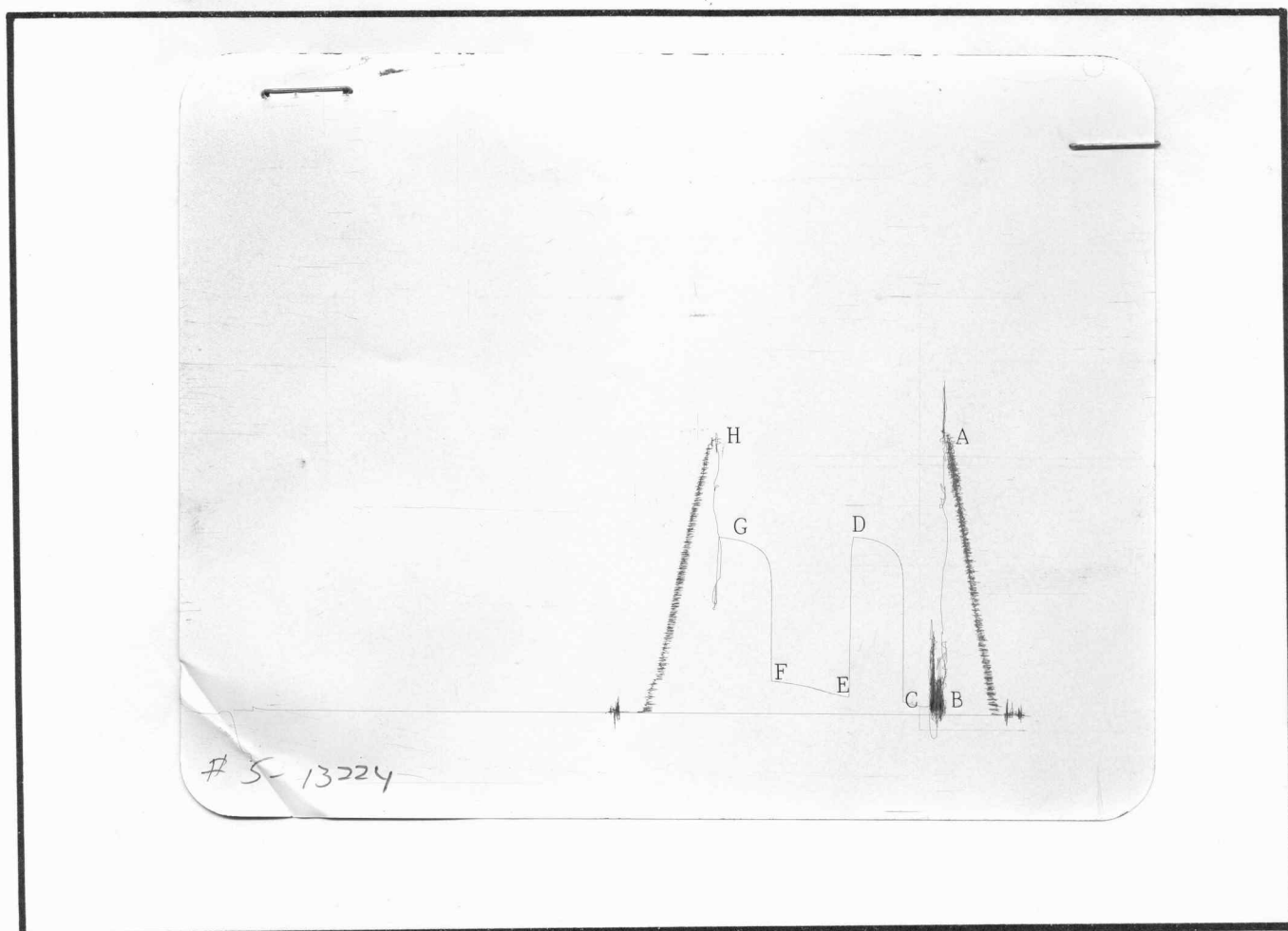
2nd open: Good blow built to strong blow off bottom of bucket in 35 minutes.

Mud Chlorides: 29,000 ppm.

Resistivity: 0.21 ohms @ 73.4°F.

Recovery Chlorides: 85,000 ppm.

Resistivity: 0.08 ohms @ 77.5°F.



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1697          | PSI            |
| (B) First Initial Flow Pressure .....  | 57            | PSI            |
| (C) First Final Flow Pressure .....    | 92            | PSI            |
| (D) Initial Closed-in Pressure .....   | 1053          | PSI            |
| (E) Second Initial Flow Pressure ..... | 103           | PSI            |
| (F) Second Final Flow Pressure .....   | 193           | PSI            |
| (G) Final Closed-in Pressure .....     | 1053          | PSI            |
| (H) Final Hydrostatic Mud .....        | 1621          | PSI            |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 6            |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Lansing      |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/8/84      |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3359 Clock # 22993

(A) Initial Hydrostatic Mud 1720 PSI

(B) First Initial Flow Pressure 76 PSI

(C) First Final Flow Pressure 76 PSI

(D) Initial Shut-in Pressure 1088 PSI

(E) Second Initial Flow Pressure 74 PSI

(F) Second Final Flow Pressure 74 PSI

(G) Final Shut-in Pressure 1006 PSI

(H) Final Hydrostatic Mud 1647 PSI

Temperature

Mud Weight 9.4 Viscosity 40

Fluid Loss 11.2

Interval Tested 3298-3364

Anchor Length 66

Top Packer Depth 3293

Bottom Packer Depth 3298

Total Depth 3364

Drill Pipe Size 4½ X.H.

Wt. Pipe I. D. 2.7 Ft. Run 3.9

Recovery-Total Feet 15

Recovered 15 Feet Of Drilling mud with few oil specks.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$625.00

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3356 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 65 Mins.

Flow Period 30 Mins.

Final Shut-in 65 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 2:10 AM

Blow Remarks 1st open: Weak 1½ inch blow decreased to 1 inch.

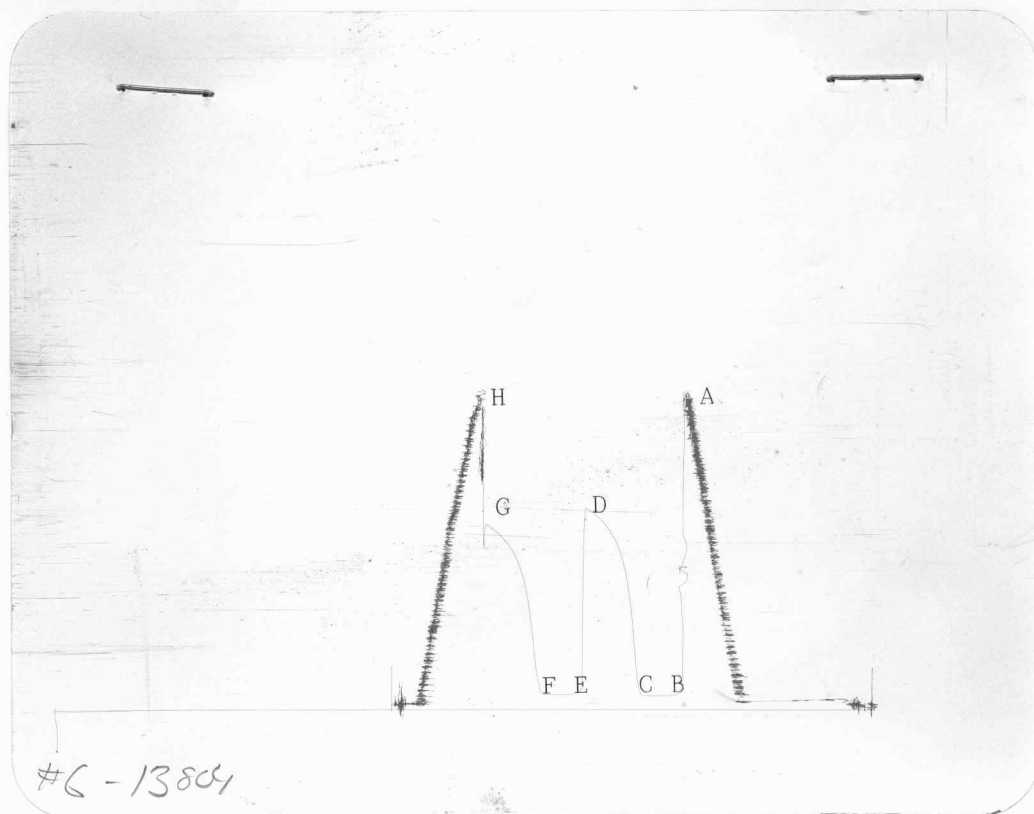
2nd open: Very weak surge, no blow.

Mud Chlorides: 45,000 ppm.

Resistivity: 0.18 ohms @ 70.6°F.

Chlorides: 50,000 ppm.

Resistivity: 0.15 @ 70.6°F.



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1720          | PSI            |
| (B) First Initial Flow Pressure .....  | 74            | PSI            |
| (C) First Final Flow Pressure .....    | 74            | PSI            |
| (D) Initial Closed-in Pressure .....   | 1088          | PSI            |
| (E) Second Initial Flow Pressure ..... | 74            | PSI            |
| (F) Second Final Flow Pressure .....   | 74            | PSI            |
| (G) Final Closed-in Pressure .....     | 1006          | PSI            |
| (H) Final Hydrostatic Mud .....        | 1647          | PSI            |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |                  |
|--------------------------------------------------------|-------------------------------|------------------|------------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 7                |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Base Kansas City |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/8/84          |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy     |
| Contractor                                             | Abercrombie Drilling          | Elevation        |                  |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |                  |

Recorder No. 13226 Type AK-1 Range 4350 PSI

Recorder Depth 3389 Clock # 22993

(A) Initial Hydrostatic Mud 1700 PSI

(B) First Initial Flow Pressure 84 PSI

(C) First Final Flow Pressure 148 PSI

(D) Initial Shut-in Pressure 1109 PSI

(E) Second Initial Flow Pressure 180 PSI

(F) Second Final Flow Pressure 243 PSI

(G) Final Shut-in Pressure 954 PSI

(H) Final Hydrostatic Mud 1637 PSI

Temperature

Mud Weight 9.1 Viscosity 45

Fluid Loss 11.0

Interval Tested 3363-3394

Anchor Length 31

Top Packer Depth 3358

Bottom Packer Depth 3363

Total Depth 3394

Drill Pipe Size 4 1/2 X.H.

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 400

Recovered 90 Feet Of Muddy water, 3% oil, 25% mud, 72% water.

Recovered 310 Feet Of Salt water.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$625.00

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3386 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 1:20 PM

Blow Remarks 1st open: Strong blow off bottom of bucket in 25 minutes.

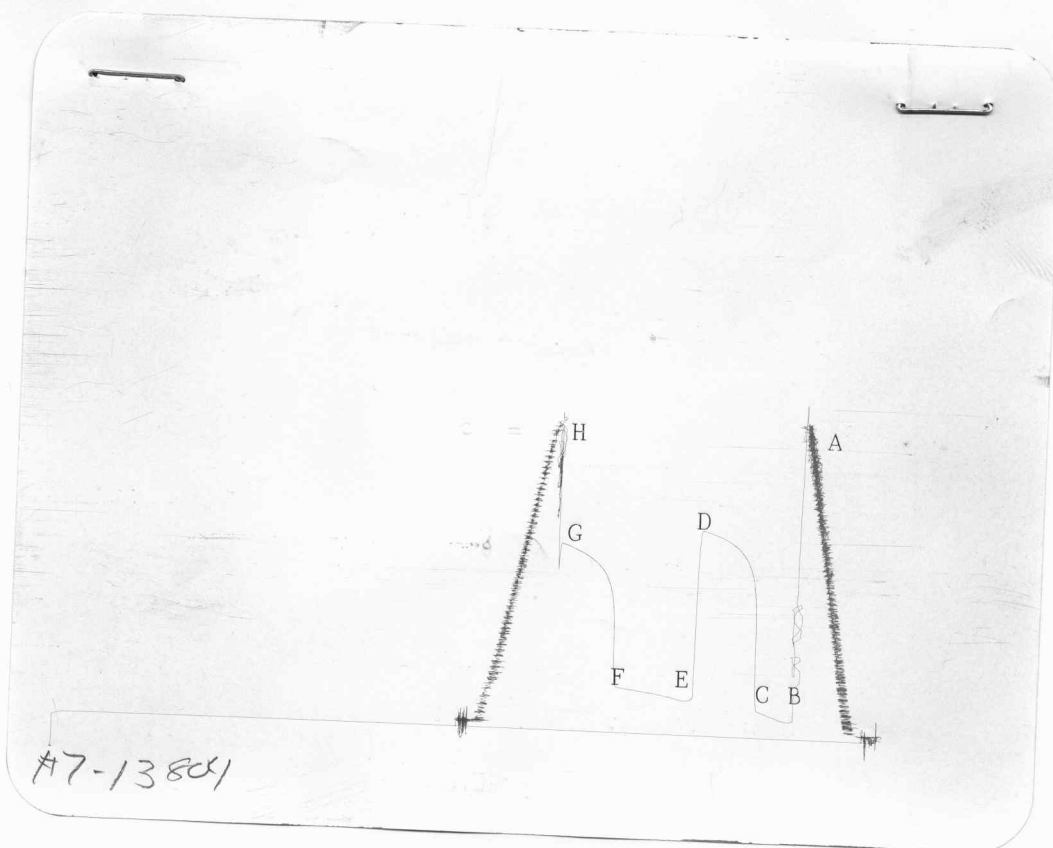
2nd open: Strong blow off bottom of bucket in 47 minutes.

Mud Chlorides: 25,000 ppm.

Resistivity: 0.24 ohms @ 75.6°F.

Chlorides: 82,000 ppm.

Resistivity: 0.09 ohms @ 73.6°F.



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1700          | PSI            |
| (B) First Initial Flow Pressure .....  | 84            | PSI            |
| (C) First Final Flow Pressure .....    | 148           | PSI            |
| (D) Initial Closed-in Pressure .....   | 1109          | PSI            |
| (E) Second Initial Flow Pressure ..... | 180           | PSI            |
| (F) Second Final Flow Pressure .....   | 243           | PSI            |
| (G) Final Closed-in Pressure .....     | 954           | PSI            |
| (H) Final Hydrostatic Mud .....        | 1637          | PSI            |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 8            |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Arbuckle     |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/9/84      |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth J669 Clock # 22993

(A) Initial Hydrostatic Mud 1752 PSI

(B) First Initial Flow Pressure 63 PSI

(C) First Final Flow Pressure 74 PSI

(D) Initial Shut-in Pressure 881 PSI

(E) Second Initial Flow Pressure 74 PSI

(F) Second Final Flow Pressure 84 PSI

(G) Final Shut-in Pressure 487 PSI

(H) Final Hydrostatic Mud 1689 PSI

Temperature

Mud Weight 9.1 Viscosity 45

Fluid Loss 11.0

Interval Tested 3413-3456

Anchor Length 41

Top Packer Depth 3408

Bottom Packer Depth 3413

Total Depth 3454

Drill Pipe Size 4 1/2 X.H.

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 80

Recovered 80 Feet Of Oil cut mud, 40% oil and 60% mud.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$625.00

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3446 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

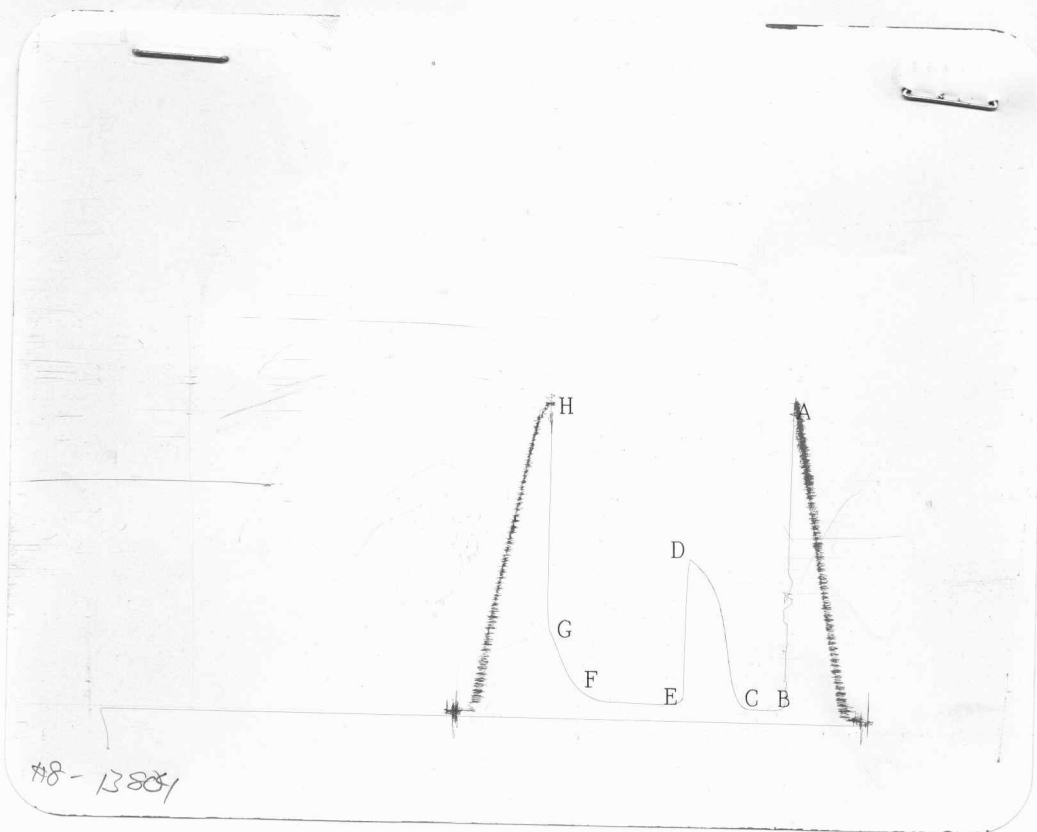
Tool Open @ 5:00 AM

Blow Remarks 1st open: Weak blow built to 2 inches.

2nd open: Very weak 1/8 inch blow throughout.

Mud Chlorides: 35,000 ppm.

Resistivity: 0.17 ohms @ 73.°F.



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1752          | PSI            |
| (B) First Initial Flow Pressure .....  | 63            | PSI            |
| (C) First Final Flow Pressure .....    | 74            | PSI            |
| (D) Initial Closed-in Pressure .....   | 881           | PSI            |
| (E) Second Initial Flow Pressure ..... | 74            | PSI            |
| (F) Second Final Flow Pressure .....   | 84            | PSI            |
| (G) Final Closed-in Pressure .....     | 487           | PSI            |
| (H) Final Hydrostatic Mud .....        | 1689          | PSI            |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 9            |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Arbuckle     |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/9/84      |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 3457 Clock # 22993

(A) Initial Hydrostatic Mud 1741 PSI

(B) First Initial Flow Pressure 74 PSI

(C) First Final Flow Pressure 95 PSI

(D) Initial Shut-in Pressure 912 PSI

(E) Second Initial Flow Pressure 105 PSI

(F) Second Final Flow Pressure 127 PSI

(G) Final Shut-in Pressure 798 PSI

(H) Final Hydrostatic Mud 1647 PSI

Temperature

Mud Weight 9.3 Viscosity 41

Fluid Loss 20

Interval Tested 3439-3462

Anchor Length 23

Top Packer Depth 3434

Bottom Packer Depth 3439

Total Depth 3462

Drill Pipe Size 4½ X.H.

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 160

Recovered 100 Feet Of Mud cut oil, 65% oil, 35% mud.

Recovered 60 Feet Of Oil cut mud, 90% mud and 10% oil.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment Price of Job \$625.00

Recorder No. 13804 Type AK-1 Range 450 PSI

Recorder Depth 3454 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 65 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 3:30 PM

Blow Remarks 1st open: Fair blow built to 6 inches.

2nd open: Fair blow built to 6½ inches.

Mud Chlorides: 24,000 ppm.

Resistivity: 0.30 @64.2°F.

# INITIAL SHUT-IN

=====

RECORDER NO: 7456 DEPTH: 3962 FT.  
INITIAL FLOW TIME (T): 30 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(PSIG) |
|---------|----------------|----------------|
| 0       | 0.000          | 90.0           |
| 5       | 0.845          | 120.8          |
| 10      | 0.602          | 379.2          |
| 15      | 0.477          | 628.2          |
| 20      | 0.398          | 735.2          |
| 25      | 0.342          | 796.6          |
| 30      | 0.301          | 842.2          |
| 35      | 0.269          | 875.0          |
| 40      | 0.243          | 900.4          |
| 45      | 0.222          | 921.6          |

# FINAL SHUT-IN

=====

RECORDER NO: 7456 DEPTH: 3962 FT.  
TOTAL FLOW TIME: 90 MIN.

| DT(MIN) | LOG((T+DT)/DT) | PRESSURE(PSIG) |
|---------|----------------|----------------|
| 0       | 0.000          | 126.1          |
| 5       | 1.279          | 173.7          |
| 10      | 1.000          | 321.0          |
| 15      | 0.845          | 488.3          |
| 20      | 0.740          | 594.3          |
| 25      | 0.663          | 663.1          |
| 30      | 0.602          | 710.8          |
| 35      | 0.553          | 748.9          |
| 40      | 0.512          | 779.7          |
| 45      | 0.477          | 803.0          |

CHENEY TESTING CO, INC.  
CALCULATION OF FORMATION CHARACTERISTICS  
FROM DST DATA

\*\*\*\*\*

FOR: A.L. ABERCROMBIE  
COOK #B-1  
SEC 28-7-20  
ROOKS COUNTY KANSAS

DST # 9  
FORMATION: ARBUCKLE  
ELEVATION: 1985 KB

\*\*\*\*\*

TEST PARAMETERS

|                                  |                                |
|----------------------------------|--------------------------------|
| TEST INTERVAL: 3439 - 3962       | EST PAY: 5                     |
| TIME INTERVAL: 30 - 45 - 60 - 45 | VISCOSITY OF FLUID: 7          |
| INITIAL FLOW PRESS: 82.6- 90.0   | HOLE SIZE: 7.875               |
| FINAL FLOW PRESS: 109.1- 126.1   | D.C. CAPACITY: 0.00000         |
| SHUT-IN PRESS(I-F): 921.6- 803.0 | W.P. CAPACITY: 0.00708         |
| BOTTOM HOLE TEMPERATURE: 0       | D.P. CAPACITY: 0.01402         |
| TOTAL FEET OF RECOVERY: 160      | TOTAL BARRELS RECOVERY: 1.1325 |

\*\*\*\*\*

EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1155  
SLOPE (PSI-CYCLE): 1050      POINTS USED: 6

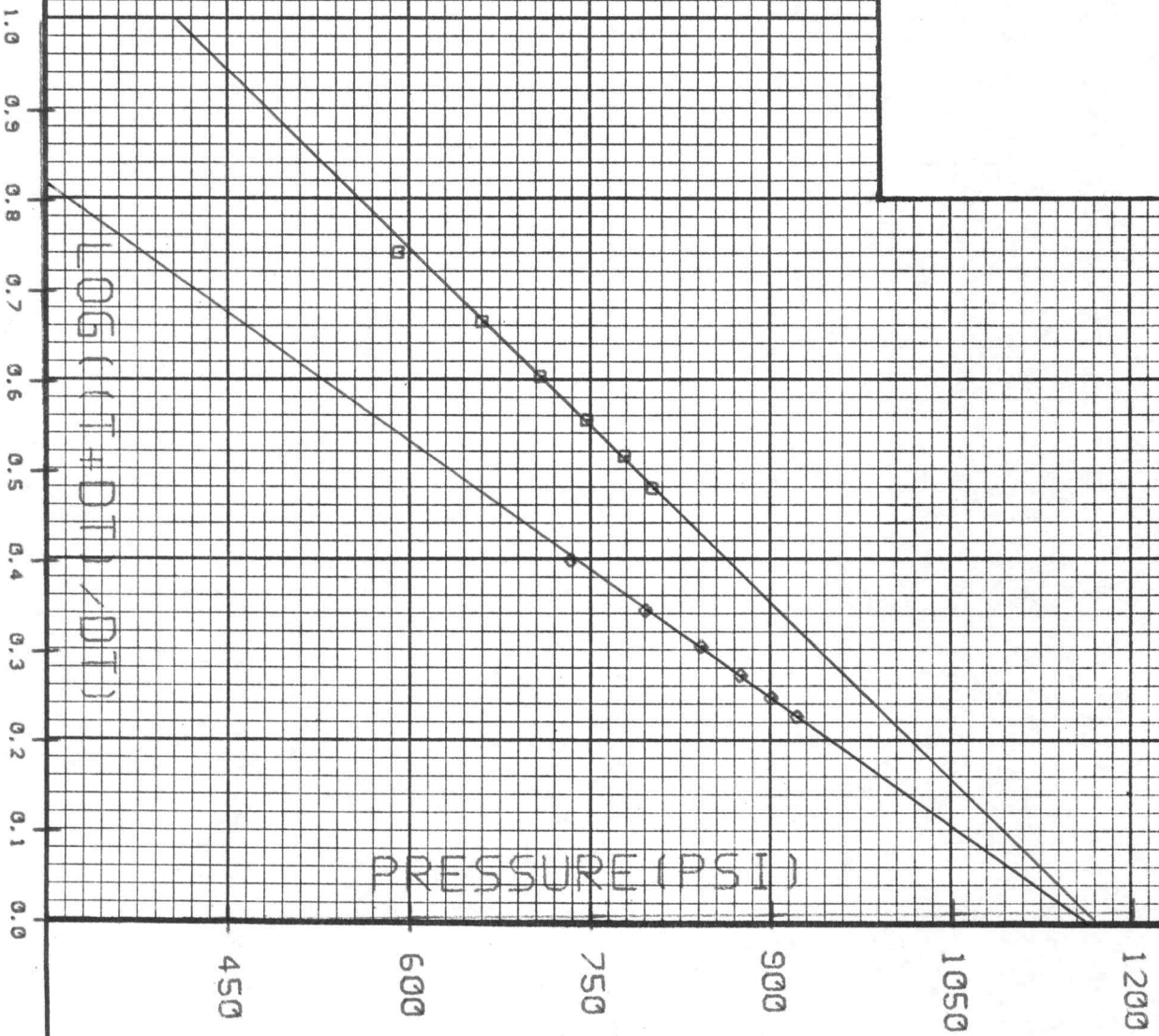
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 1162  
SLOPE (PSI-CYCLE): 757      POINTS USED: 5

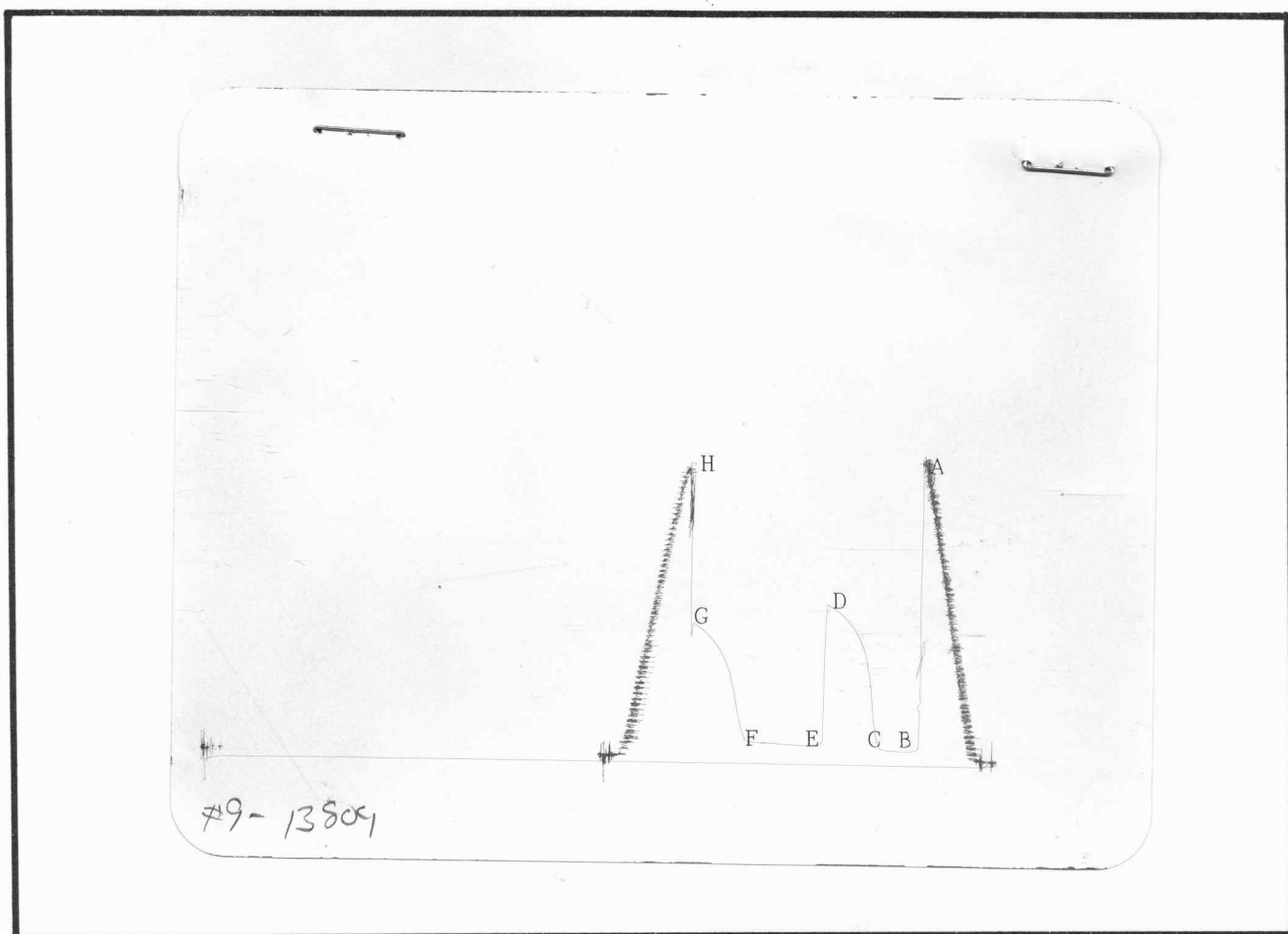
\*\*\*\*\*

CALCULATIONS

|                                          |          |
|------------------------------------------|----------|
| AVERAGE PRODUCTION RATE (B/D)            | : 18.12  |
| TRANSMISSIBILITY (MD-FT/CP)              | : 3.89   |
| PERMEABILITY (MD)                        | : 5.45   |
| PRODUCTIVITY INDEX (B/D/PSI)             | : 0.0156 |
| DAMAGE RATIO                             | : 0.250  |
| APPROXIMATE RADIUS OF INVESTIGATION (FT) | : 22.1   |
| DRAWDOWN FACTOR (%)                      | : -0.606 |
| POTENTIOMETRIC SURFACE (FT)              | : 717.68 |

HORNER PLOT  
A.L. ABERCROMBIE  
COOK #8-1  
DST # 9 DEPTH: 3962  
RECORDER NO. 7456  
INITIAL SHUT-IN:  $\diamond$   
FINAL SHUT-IN:  $\square$





This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1761          | 1756           |
| (B) First Initial Flow Pressure .....  | 74            | 82.6           |
| (C) First Final Flow Pressure .....    | 95            | 90.0           |
| (D) Initial Closed-in Pressure .....   | 912           | 921.6          |
| (E) Second Initial Flow Pressure ..... | 105           | 109.1          |
| (F) Second Final Flow Pressure .....   | 127           | 126.1          |
| (G) Final Closed-in Pressure .....     | 798           | 803.0          |
| (H) Final Hydrostatic Mud .....        | 1647          | 1642           |

# CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

|                                                        |                               |                  |              |
|--------------------------------------------------------|-------------------------------|------------------|--------------|
| Company                                                | A.L. Abercrombie              | Test No.         | 10           |
| Well Name & Number                                     | Cook B-1                      | Zone Tested      | Arbuckle     |
| Company Address                                        | 801 Union Center Wichita, Ks. | Date             | 10/10/84     |
| Company Rep.                                           | Steve Frankamp                | Tester           | Mike Finnesy |
| Contractor                                             | Abercrombie Drilling          | Elevation        |              |
| Location: Sec. 28 Twp. 7s Rge. 20w Co. Rooks State Ks. |                               | Est. Feet of Pay |              |

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder Depth 5467 Clock # 22993

(A) Initial Hydrostatic Mud 1741 PSI

(B) First Initial Flow Pressure 63 PSI

(C) First Final Flow Pressure 84 PSI

(D) Initial Shut-in Pressure 923 PSI

(E) Second Initial Flow Pressure 116 PSI

(F) Second Final Flow Pressure 148 PSI

(G) Final Shut-in Pressure 809 PSI

(H) Final Hydrostatic Mud 1679 PSI

Temperature

Mud Weight 9.3 Viscosity 41

Fluid Loss 20

Interval Tested 3462-3472

Anchor Length 10

Top Packer Depth 3457

Bottom Packer Depth 3462

Total Depth 3472

Drill Pipe Size 4 1/2 X.H.

Wt. Pipe I. D. 2.7 Ft. Run 319

Recovery-Total Feet 248

Recovered 248 Feet Of Muddy water.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 3464 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 1:20 AM

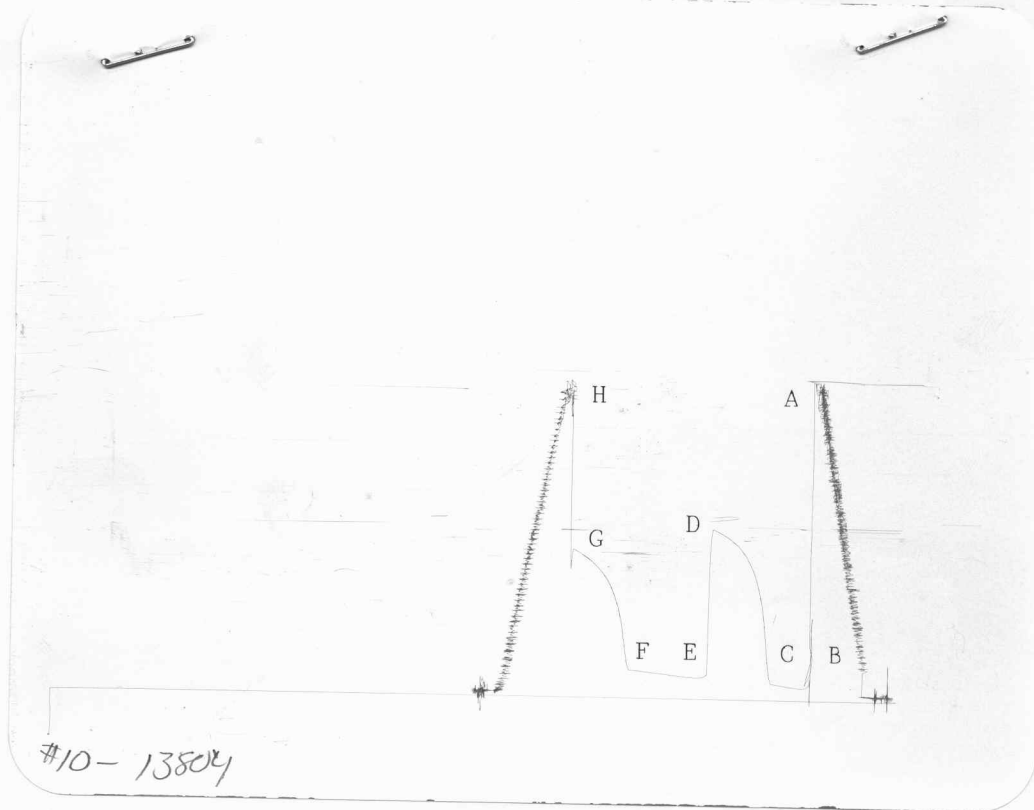
Blow Remarks 1st open: Good blow built to 7 inches.

2nd open: Fair blow built to 6 inches.

Mud Chlorides: 25,000 ppm

Resistivity: 0.29 ohms @ 62.4°F.

Price of Job \$625.00



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE      |                |
|----------------------------------------|---------------|----------------|
|                                        | Field Reading | Office Reading |
| (A) Initial Hydrostatic Mud .....      | 1741          | PSI            |
| (B) First Initial Flow Pressure .....  | 63            | PSI            |
| (C) First Final Flow Pressure .....    | 84            | PSI            |
| (D) Initial Closed-in Pressure .....   | 923           | PSI            |
| (E) Second Initial Flow Pressure ..... | 116           | PSI            |
| (F) Second Final Flow Pressure .....   | 148           | PSI            |
| (G) Final Closed-in Pressure .....     | 809           | PSI            |
| (H) Final Hydrostatic Mud .....        | 1679          | PSI            |