

**Release**  
**MAR 18 2002**  
**From**  
**Confidential**



**DRILL STEM TEST REPORT**

Prepared For: **Oneok Res. Co**

P.O. Box 871  
Tulsa, Ok. 74102-0871

ATTN: Harold Trapp

**15-31s-17w**

**Ferrin #3-15**

Start Date: 2000.12.29 @ 02:19:00

End Date: 2000.12.29 @ 18:01:00

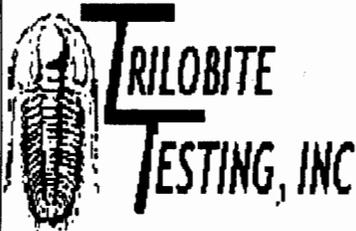
Job Ticket #: 13962                      DST #: 1

ORIGINAL

CONFIDENTIAL

**KCC**  
**MAR 20 2002**  
**CONFIDENTIAL**

Trilobite Testing Inc.  
Box 362 Hays KS 67601  
785.625.4778 trilobite@eaglecom.net



# DRILL STEM TEST REPORT

Oneok Res. Co  
 P.O. Box 871  
 Tulsa, Ok. 74102-0871  
 ATTN: Harold Trapp

Ferrin #3-15  
 15-31s-17w  
 Job Ticket: 13962      DST#: 1  
 Test Start: 2000.12.29 @ 02:19:00

## GENERAL INFORMATION:

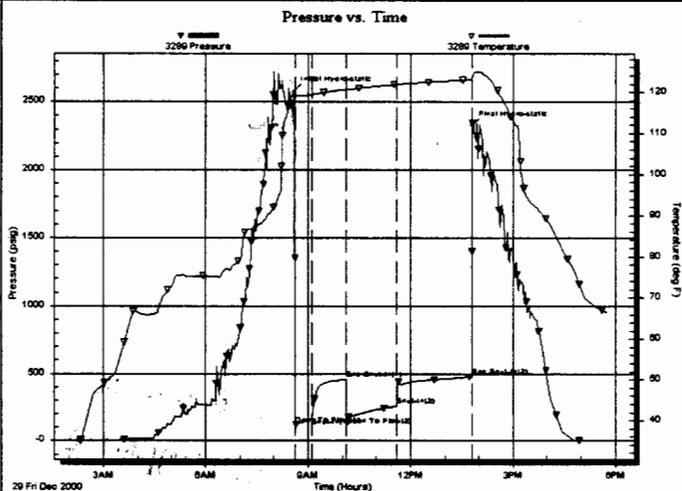
Formation: **Miss.**  
 Deviated: No      Whipstock:      ft (KB)  
 Time Tool Opened: 08:37:33  
 Time Test Ended: 18:01:00  
 Interval: **5047.00 ft (KB) To 5092.00 ft (KB) (TVD)**  
 Total Depth: 5092.00 ft (KB)  
 Hole Diameter: 7.88 inches      Hole Condition: Poor  
 Test Type: Conventional Bottom Hole  
 Tester: John Schmidt  
 Unit No: 18  
 Reference Elevations: 2112.00 ft (KB)  
 2100.00 ft (CF)  
 KB to GR/CF: 12.00 ft

Serial #: **3289**  
 Press@RunDepth: 259.68 psig @      ft (KB)      Capacity: 7000.00 psig  
 Start Date: 2000.12.29      End Date: 2000.12.29      Last Calib.: 1899.12.30  
 Start Time: 02:19:05      End Time: 18:01:03      Time On Btm: 2000.12.29 @ 08:36:03  
 Time Off Btm: 2000.12.29 @ 13:48:03

TEST COMMENT: IF Weak Blow 5"  
 FF Weak Blow 2"

*NOO*  
*MAK < 0 2002*  
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## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 377         | 2576.53         | 119.29       | Initial Hydro-static |
| 379         | 118.04          | 118.79       | Open To Flow (1)     |
| 408         | 165.17          | 119.40       | Shut-in(1)           |
| 469         | 454.78          | 120.62       | End Shut-in(1)       |
| 469         | 171.50          | 120.64       | Open To Flow (2)     |
| 557         | 259.68          | 121.88       | Shut-in(2)           |
| 689         | 477.51          | 123.01       | End Shut-in(2)       |
| 689         | 2326.07         | 123.18       | Final Hydro-static   |

## Recovery

| Length (ft) | Description               | Volume (bbl) |
|-------------|---------------------------|--------------|
| 261.00      | Mud                       | 1.28         |
| 125.00      | Watery Mud 5% G 35 W 60 M | 0.61         |
| 125.00      | Muddy Water 10%G 60W 30M  | 0.61         |
|             |                           |              |
|             |                           |              |

## Gas Rates

|  | Choke(inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|---------------|-----------------|------------------|
|  |               |                 |                  |

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# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

N<sup>o</sup> 13962

KCC WICHITA

## Test Ticket

Well Name & No. FERRIN #3-15 Test No. #1 Date 12-29-00  
 Company ONEOK RES. CO. Zone Tested MISS.  
 Address P.O. BOX 871 TULSA, OK. 74102-0871 Elevation 2112' KB 2100' GL  
 Co. Rep / Geo. HAROLD TRAPP Cont. CHEYENNE #2 Est. Ft. of Pay      Por.      %  
 Location: Sec. 15 Twp. 31~~0~~5 Rge. 17 W Co. COMANCHE State KS  
 No. of Copies      Distribution Sheet (Y, N)      Turnkey (Y, N)      Evaluation (Y, N)     

Interval Tested 5047-5092 Initial Str Wt./Lbs. 80,000 Unseated Str Wt./Lbs. 80,000  
 Anchor Length 45' Wt. Set Lbs. 20,000 Wt. Pulled Loose/Lbs. 120,000  
 Top Packer Depth 5042 Tool Weight 3,000  
 Bottom Packer Depth 5047 Hole Size — 7 7/8"  Rubber Size — 6 3/4"   
 Total Depth 5047 Wt. Pipe Run 0 Drill Collar Run 588  
 Mud Wt. 9.3 LCM 4" Vis. 66 WL 8.8 Drill Pipe Size 4 1/2 F.H. Ft. Run 4462  
 Blow Description IF-WEAK BLOW 5" IN 30 MIN.  
IF-WEAK BLOW 2" IN 120 MIN. Release

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| Recovery — Total Feet | GIP                                | Ft. in DC      | Confidential   | Ft. in DP                         |
|-----------------------|------------------------------------|----------------|----------------|-----------------------------------|
| Rec. <u>261'</u>      | Feet Of <u>MUD</u>                 | %gas           | %oil           | %water %mud                       |
| Rec. <u>125</u>       | Feet Of <u>Muddy Water (W) GAS</u> | <u>5</u> %gas  | <u>35</u> %oil | <u>60</u> %water <u>    </u> %mud |
| Rec. <u>125</u>       | Feet Of <u>Buddy Water (W) GAS</u> | <u>10</u> %gas | <u>60</u> %oil | <u>30</u> %water <u>    </u> %mud |
| Rec. <u>    </u>      | Feet Of <u>WATERY MUD (W) GAS</u>  | %gas           | %oil           | %water %mud                       |
| Rec. <u>    </u>      | Feet Of <u>    </u>                | %gas           | %oil           | %water %mud                       |

BHT      °F Gravity      °API D@      °F Corrected Gravity      °API  
 RW 115 @ 84 °F Chlorides 25,000 ppm Recovery Chlorides      ppm System

|                                  | AK-1        | Alpine      | PSI Recorder No.              | T-On Location   |
|----------------------------------|-------------|-------------|-------------------------------|---|
| (A) Initial Hydrostatic Mud      | <u>2506</u> | <u>2576</u> | <u>3289</u>                   | <u>20:30</u>  |
| (B) First Initial Flow Pressure  | <u>149</u>  | <u>118</u>  | (depth) <u>5058</u>           | T-Started <u>04:00</u>                                      |
| (C) First Final Flow Pressure    | <u>172</u>  | <u>165</u>  | PSI Recorder No. <u>11084</u> | T-Open <u>08:40</u>   |
| (D) Initial Shut-in Pressure     | <u>438</u>  | <u>454</u>  | PSI (depth) <u>5089</u>       | T-Pulled <u>13:40</u>                                       |
| (E) Second Initial Flow Pressure | <u>202</u>  | <u>171</u>  | PSI Recorder No. <u>    </u>  | T-Out <u>18:15</u>  |
| (F) Second Final Flow Pressure   | <u>240</u>  | <u>259</u>  | PSI (depth) <u>    </u>       | T-Off Location <u>20:00</u>                                 |
| (G) Final Shut-in Pressure       | <u>453</u>  | <u>477</u>  | PSI Initial Opening <u>30</u> | Test <u>BOTTOM HOLE</u>                                     |
| (Q) Final Hydrostatic Mud        | <u>2474</u> | <u>2326</u> | PSI Initial Shut-in <u>60</u> | Jars <input checked="" type="checkbox"/> <u>150</u>         |
|                                  |             |             | Final Flow <u>90</u>          | Safety Joint <input checked="" type="checkbox"/> <u>450</u> |
|                                  |             |             | Final Shut-in <u>120</u>      | Straddle <u>    </u>  |

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST, TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST, BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By [Signature]  
 Our Representative [Signature]

Circ. Sub       
 Sampler       
 Extra Packer       
 Elec. Rec.  150  
 Mileage      50  
 Other       
 TOTAL PRICE \$

**Release**  
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**APR 08 2002**  
**KCC WICHITA**



**DRILL STEM TEST REPORT**

Prepared For: **Oneok Res. Co**  
P.O. Box 871  
Tulsa, Ok. 74102-0871

ATTN: Harold Trapp

**15-31s-17w**

**Ferrin #3-15**

Start Date: 2000.12.29 @ 02:19:00

End Date: 2000.12.29 @ 18:01:00

Job Ticket #: 13962                      DST #: 1

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Oneok Res. Co  
Ferrin #3-15  
15-31s-17w  
DST #: 1  
Miss.  
2000.12.29

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DRILL STEM TEST REPORT

Oneok Res. Co  
 P.O. Box 871  
 Tulsa, Ok. 74102-0871  
 ATTN: Harold Trapp

Ferrin #3-15  
 15-31s-17w  
 Job Ticket: 13962  
 Test Start: 2000.12.29 @ 02:19:00  
 DST#: 1

GENERAL INFORMATION:

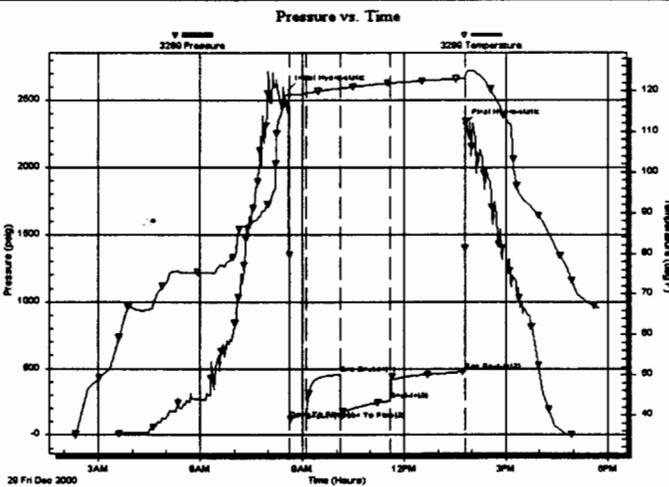
Formation: **Miss.**  
 Deviated: **No** Whipstock: **ft (KB)**  
 Time Tool Opened: 08:37:33  
 Time Test Ended: 18:01:00  
 Interval: **5047.00 ft (KB) To 5092.00 ft (KB) (TVD)**  
 Total Depth: **5092.00 ft (KB)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Poor**

**Release**  
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**Confidential**

Test Type: **Conventional Bottom Hole**  
 Tester: **John Schmidt**  
 Unit No: **18**  
 Reference Elevations: **2112.00 ft (KB)**  
**2100.00 ft (CF)**  
 KB to GR/CF: **12.00 ft**

Serial #: **3289**  
 Press@RunDepth: **259.68 psig @ ft (KB)** Capacity: **7000.00 psig**  
 Start Date: **2000.12.29** End Date: **2000.12.29** Last Calib.: **1899.12.30**  
 Start Time: **02:19:05** End Time: **18:01:03** Time On Btm: **2000.12.29 @ 08:36:03**  
 Time Off Btm: **2000.12.29 @ 13:48:03**

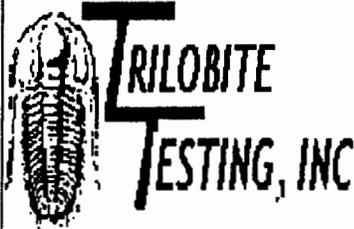
TEST COMMENT: **IF Weak Blow 5"**  
**FF Weak Blow 2"**



| PRESSURE SUMMARY |                 |              |                      |
|------------------|-----------------|--------------|----------------------|
| Time (Min.)      | Pressure (psig) | Temp (deg F) | Annotation           |
| 377              | 2576.53         | 119.29       | Initial Hydro-static |
| 379              | 118.04          | 118.79       | Open To Flow (1)     |
| 408              | 165.17          | 119.40       | Shut-in(1)           |
| 469              | 454.78          | 120.62       | End Shut-in(1)       |
| 469              | 171.50          | 120.64       | Open To Flow (2)     |
| 557              | 259.68          | 121.88       | Shut-in(2)           |
| 689              | 477.51          | 123.01       | End Shut-in(2)       |
| 689              | 2326.07         | 123.18       | Final Hydro-static   |

| Recovery    |                           |              |
|-------------|---------------------------|--------------|
| Length (ft) | Description               | Volume (bbl) |
| 261.00      | Mud                       | 1.28         |
| 125.00      | Watery Mud 5% G 35 W 60 M | 0.61         |
| 125.00      | Muddy Water 10%G 60W 30M  | 0.61         |
|             |                           |              |
|             |                           |              |

| Gas Rates |                |                 |                  |
|-----------|----------------|-----------------|------------------|
|           | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|           |                |                 |                  |
|           |                |                 |                  |



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Oneok Res. Co  
 P.O. Box 871  
 Tulsa, Ok. 74102-0871  
 ATTN: Harold Trapp

Ferrin #3-15  
 15-31s-17w  
 Job Ticket: 13962  
 Test Start: 2000.12.29 @ 02:19:00  
 DST#: 1

### Tool Information

|                           |                    |                       |                   |                                    |
|---------------------------|--------------------|-----------------------|-------------------|------------------------------------|
| Drill Pipe:               | Length: 4462.00 ft | Diameter: 3.80 inches | Volume: 62.59 bbl | Tool Weight: 3000.00 lb            |
| Drill Collar:             | Length: 588.00 ft  | Diameter: 2.25 inches | Volume: 2.89 bbl  | Weight set on Packer: 20000.00 lb  |
| Heavy Wt. Pipe:           | Length: ft         | Diameter: 0.00 inches | Volume: 0.00 bbl  | Weight to Pull Loose: 120000.0 lb  |
| Drill Pipe Above KB:      | 30.00 ft           |                       |                   | Tool Chased 180.00 ft              |
| Depth to Top Packer:      | 5042.00 ft         |                       |                   | String Weight: Initial 80000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                   | Final 80000.00 lb                  |
| Interval between Packers: | ft                 |                       |                   |                                    |
| Tool Length:              | 72.02 ft           |                       |                   |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                   |                                    |

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### Tool Comments

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| C.O. Sub         | 1.00        |            |          | 5021.00    |                               |
| S.I. Tool        | 5.00        |            |          | 5026.00    |                               |
| HMV              | 5.00        |            |          | 5031.00    |                               |
| Jars             | 5.00        |            |          | 5036.00    |                               |
| Safety Joint     | 2.00        |            |          | 5038.00    |                               |
| Packer           | 4.00        |            |          | 5042.00    | 22.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 5047.00    |                               |
| Stubb            | 1.00        |            |          | 5048.00    |                               |
| Perforations     | 10.00       |            |          | 5058.00    |                               |
| Recorder         | 0.01        |            |          | 5058.01    |                               |
| Blank Spacing    | 31.00       |            |          | 5089.01    |                               |
| Recorder         | 0.01        |            |          | 5089.02    |                               |
| Bullnose         | 3.00        |            |          | 5092.02    | 50.02 Bottom Packers & Anchor |

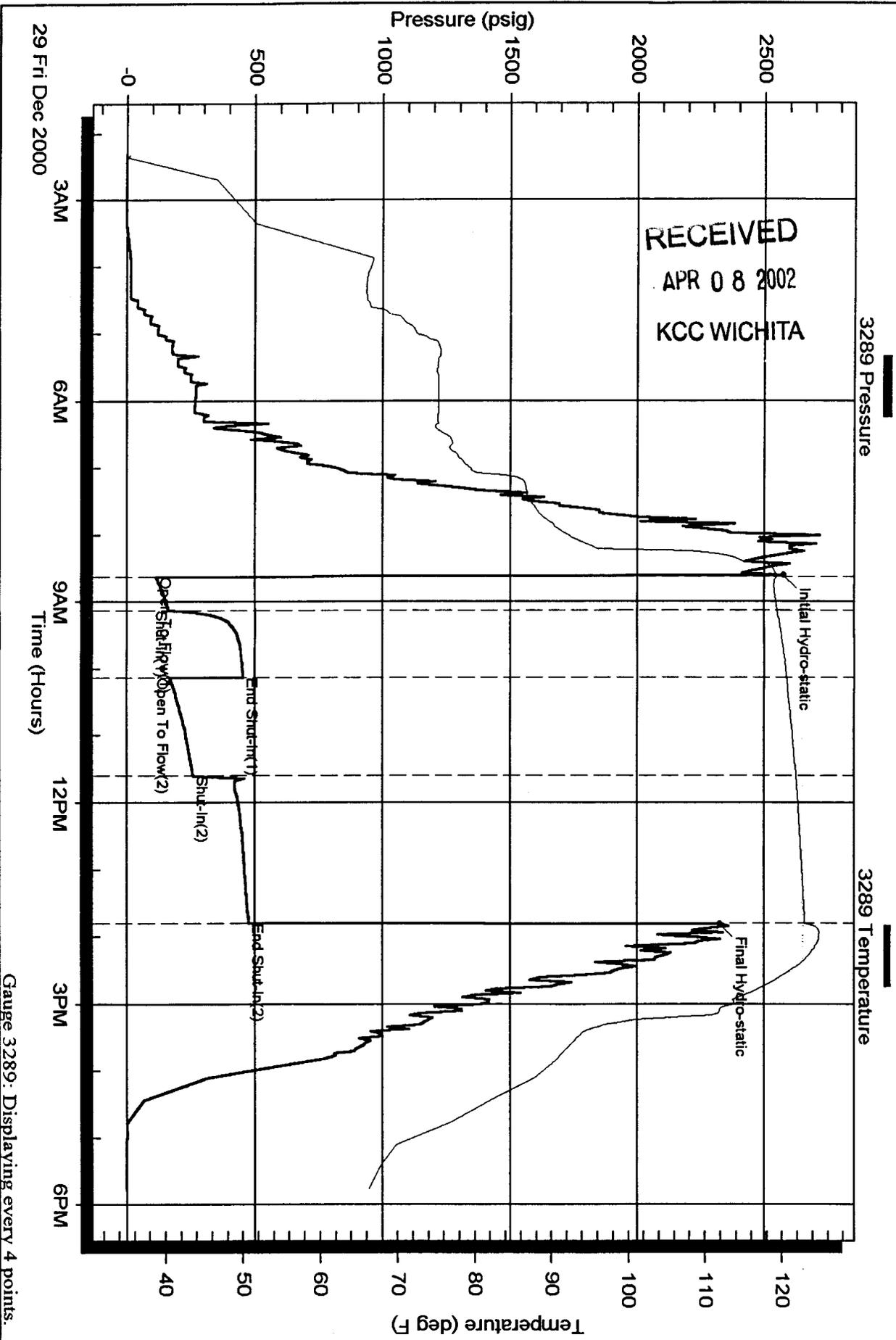
**Total Tool Length: 72.02**

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### Pressure vs. Time



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# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Nº 13962

KCC WICHITA

## Test Ticket

|   |   |  |
|---|---|--|
| Well Name & No. <u>FERRIN #3-15</u>               | Test No. <u>#1</u>                        | Date <u>12-29-00</u>                                     |
| Company <u>ONEOK RES. Co.</u>                     | Zone Tested <u>MISS.</u>                  |  |
| Address <u>P.O. BOX 871 TULSA, OK. 74102-0871</u> | Elevation <u>2112'</u> KB <u>2100'</u> GL |  |
| Co. Rep / Geo. <u>HAROLD TRAPP</u>                | Cont. <u>CHEYENNE #2</u>                  | Est. Ft. of Pay <u>    </u> Por. <u>    </u> %           |
| Location: Sec. <u>15</u>                          | Twp. <u>31 S</u>                          | Rge. <u>17 W</u> Co. <u>COMANCHE</u> State <u>KS</u>     |
| No. of Copies <u>    </u>                         | Distribution Sheet (Y, N) <u>    </u>     | Turnkey (Y, N) <u>    </u> Evaluation (Y, N) <u>    </u> |

|   |  |  |
|---|--|--|
| Interval Tested <u>5047-5092</u>                              | Initial Str Wt./Lbs. <u>80,000</u>                     | Unseated Str Wt./Lbs. <u>80,000</u>                      |
| Anchor Length <u>45'</u>                                      | Wt. Set Lbs. <u>20,000</u>                             | Wt. Pulled Loose/Lbs. <u>120,000</u>                     |
| Top Packer Depth <u>5042</u>                                  | Tool Weight <u>3,000</u>                               |  |
| Bottom Packer Depth <u>5047</u>                               | Hole Size — 7 7/8" <input checked="" type="checkbox"/> | Rubber Size — 6 3/4" <input checked="" type="checkbox"/> |
| Total Depth <u>5047</u>                                       | Wt. Pipe Run <u>0</u>                                  | Drill Collar Run <u>588</u>                              |
| Mud Wt. <u>9.3</u> LCM <u>4"</u> Vis. <u>66</u> WL <u>8.8</u> | Drill Pipe Size <u>4 1/2 F.H.</u>                      | Ft. Run <u>4462</u>                                      |
| Blow Description <u>IF-WEAK BLOW 5" IN 30 MIN.</u>            |  |  |
| <u>IF-WEAK BLOW 2" IN 120 MIN.</u>                            |  |  |

|                                   |                                    |   |   |
|-----------------------------------|------------------------------------|---|---|
| Recovery — Total Feet <u>511'</u> | GIP <u>    </u>                    | Ft. in DC <u>    </u>   | Ft. in DP <u>    </u>                             |
| Rec. <u>261'</u>                  | Feet Of <u>MUD</u>                 | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| Rec. <u>125</u>                   | Feet Of <u>MUDDY WATER (W) GAS</u> | 5%gas <u>    </u> %oil <u>35</u> %water <u>60</u> %mud <u>    </u>    |   |
| Rec. <u>125</u>                   | Feet Of <u>MUDDY WATER (W) GAS</u> | 10%gas <u>    </u> %oil <u>60</u> %water <u>30</u> %mud <u>    </u>   |   |
| Rec. <u>    </u>                  | Feet Of <u>WATERY MUD (W) GAS</u>  | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| Rec. <u>    </u>                  | Feet Of <u>    </u>                | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| BHT <u>    </u>                   | °F Gravity <u>    </u>             | °API D@ <u>    </u>   | °F Corrected Gravity <u>    </u> °API <u>    </u> |
| RW <u>1.15</u>                    | °F Chlorides <u>64</u>             | ppm Recovery Chlorides <u>25,000</u>                                  | ppm System Chlorides <u>    </u>                  |

|                                  |                  |                    |                               |  |
|----------------------------------|------------------|--------------------|-------------------------------|--|
| (A) Initial Hydrostatic Mud      | AK-1 <u>2506</u> | Alpine <u>2576</u> | PSI Recorder No. <u>3289</u>  | T-On Location <u>20:30</u>                       |
| (B) First Initial Flow Pressure  | <u>149</u>       | <u>118</u>         | PSI (depth) <u>5058</u>       | T-Started <u>04:00</u>                           |
| (C) First Final Flow Pressure    | <u>172</u>       | <u>165</u>         | PSI Recorder No. <u>11084</u> | T-Open <u>08:40</u>                              |
| (D) Initial Shut-in Pressure     | <u>438</u>       | <u>454</u>         | PSI (depth) <u>5089</u>       | T-Pulled <u>13:40</u>                            |
| (E) Second Initial Flow Pressure | <u>202</u>       | <u>171</u>         | PSI Recorder No. <u>    </u>  | T-Out <u>18:15</u>                               |
| (F) Second Final Flow Pressure   | <u>240</u>       | <u>259</u>         | PSI (depth) <u>    </u>       | T-Off Location <u>20:00</u>                      |
| (G) Final Shut-in Pressure       | <u>453</u>       | <u>477</u>         | PSI Initial Opening <u>30</u> | Test <u>BOTTOM HOLE</u>                          |
| (Q) Final Hydrostatic Mud        | <u>2474</u>      | <u>2326</u>        | PSI Initial Shut-in <u>60</u> | Jars <input checked="" type="checkbox"/>         |
|                                  |                  |                    | Final Flow <u>90</u>          | Safety Joint <input checked="" type="checkbox"/> |
|                                  |                  |                    | Final Shut-in <u>120</u>      | Straddle <u>    </u>                             |

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Approved By Harold Trapp  
 Our Representative John J. Schmidt

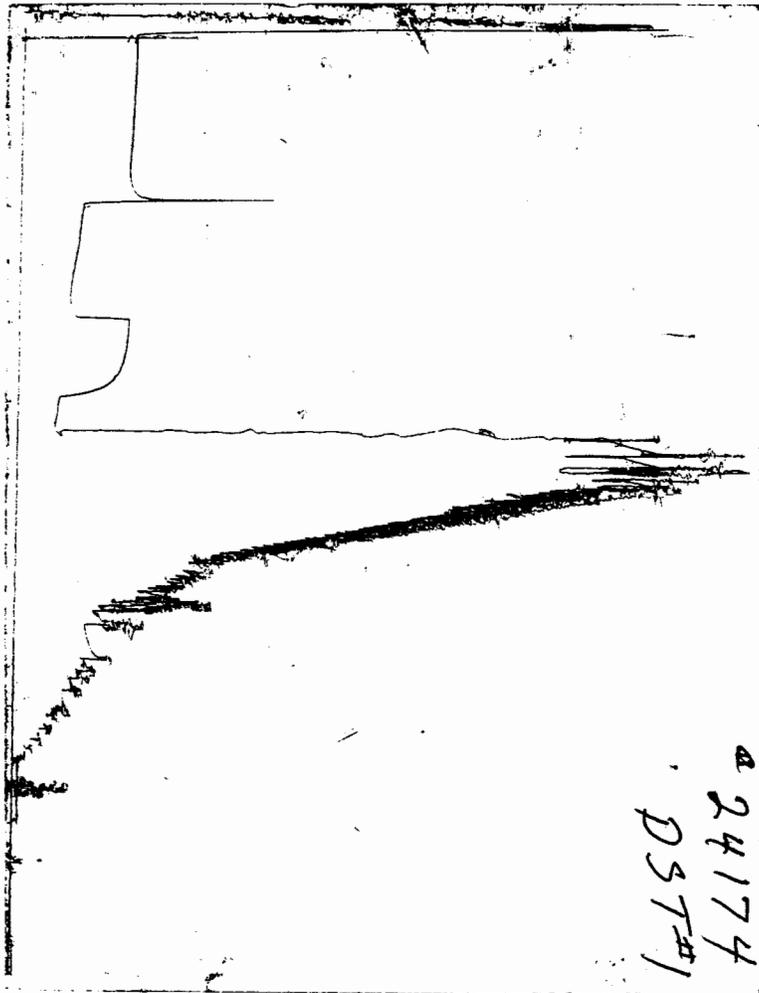
Circ. Sub       
 Sampler       
 Extra Packer       
 Elec. Rec.   
 Mileage       
 Other       
 TOTAL PRICE \$

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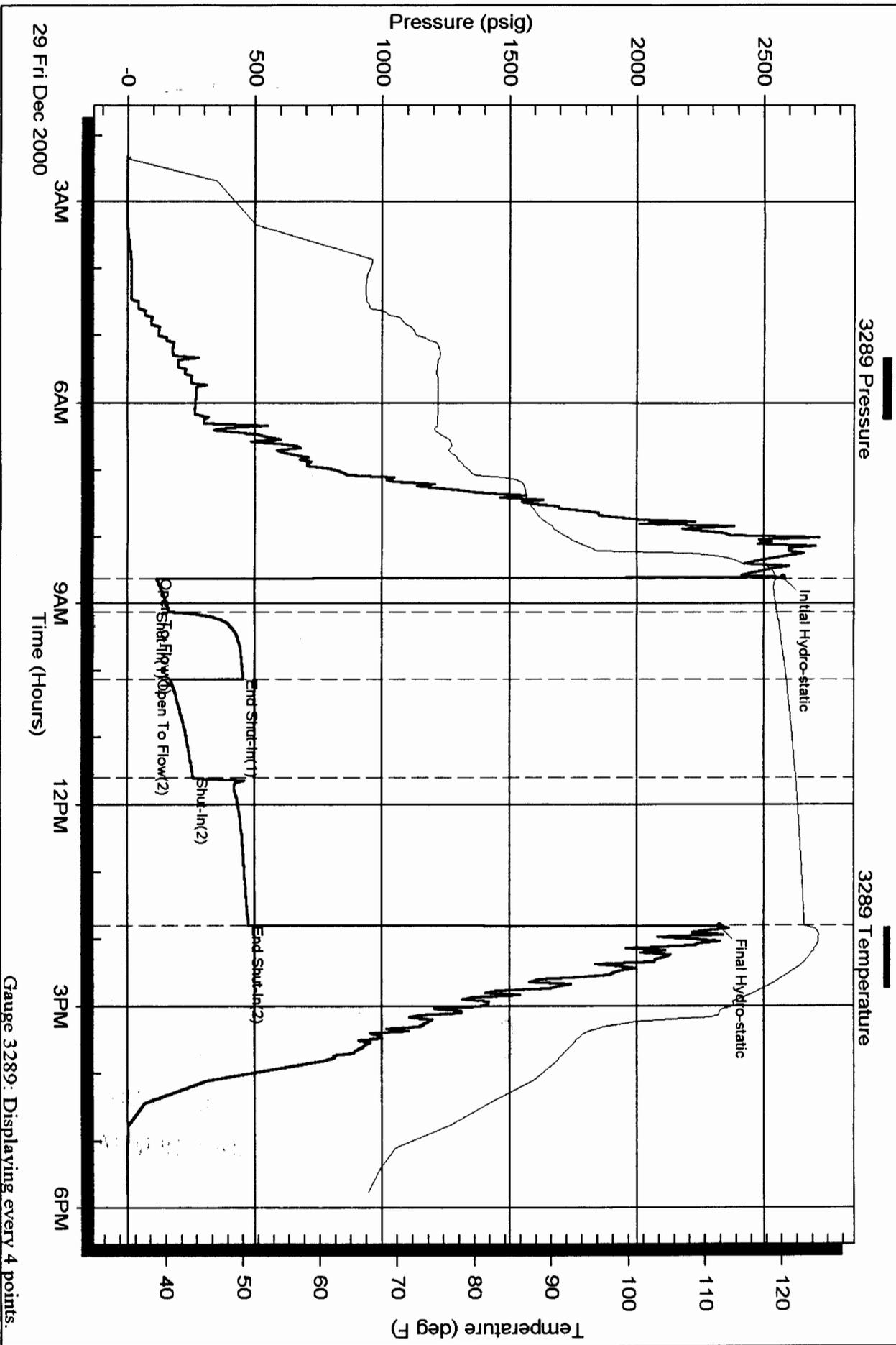
CHART PAGE



This is a photocopy of the actual AK-1 recorder chart



# Pressure vs. Time



Gauge 3289: Displaying every 4 points.

# TRILOBITE TESTING L.L.C.

Release P.O. Box 362 • Hays, Kansas 67601

N<sup>o</sup> 13962

MAR 18 2002

## Test Ticket

From

|   |                                       |  |
|---|---------------------------------------|--|
| Well Name & No. <u>CONFIDENTIAL #3-15</u>         | Test No. <u>#1</u>                    | Date <u>12-29-00</u>                                     |
| Company <u>ONEOK RES. Co.</u>                     | Zone Tested <u>MISS.</u>              |  |
| Address <u>P.O. BOX 871 TULSA, OK. 74102-0871</u> |                                       | Elevation <u>2112'</u> KB <u>2100'</u> GL                |
| Co. Rep / Geo. <u>HAROLD TRAPP</u>                | Cont. <u>CHEYENNE #2</u>              | Est. Ft. of Pay <u>    </u> Por. <u>    </u> %           |
| Location: Sec. <u>15</u>                          | Twp. <u>31 S</u>                      | Rge. <u>17 W</u> Co. <u>COMANCHE</u> State <u>KS</u>     |
| No. of Copies <u>    </u>                         | Distribution Sheet (Y, N) <u>    </u> | Turnkey (Y, N) <u>    </u> Evaluation (Y, N) <u>    </u> |

|   |  |  |
|---|--|--|
| Interval Tested <u>5047-5092</u>                              | Initial Str Wt./Lbs. <u>80,000</u>                     | Unseated Str Wt./Lbs. <u>80,000</u>                      |
| Anchor Length <u>45'</u>                                      | Wt. Set Lbs. <u>20,000</u>                             | Wt. Pulled Loose/Lbs. <u>120,000</u>                     |
| Top Packer Depth <u>5042</u>                                  | Tool Weight <u>3,000</u>                               |  |
| Bottom Packer Depth <u>5047</u>                               | Hole Size — 7 7/8" <input checked="" type="checkbox"/> | Rubber Size — 6 3/4" <input checked="" type="checkbox"/> |
| Total Depth <u>5047</u>                                       | Wt. Pipe Run <u>0</u>                                  | Drill Collar Run <u>588</u>                              |
| Mud Wt. <u>9.3</u> LCM <u>4"</u> Vis. <u>66</u> WL <u>8.8</u> | Drill Pipe Size <u>4 1/2 F.H.</u>                      | Ft. Run <u>4462</u>                                      |
| Blow Description <u>IF-WEAK BLOW 5" IN 30 MIN.</u>            |  |  |
| <u>IF-WEAK BLOW 2" IN 120 MIN.</u>                            |  |  |

**KCC**

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|                                   |                                  |   |   |
|-----------------------------------|----------------------------------|---|---|
| Recovery — Total Feet <u>511'</u> | GIP <u>    </u>                  | Ft. in DC <b>CONFIDENTIAL</b>   | Ft. in DP <u>    </u>                             |
| Rec. <u>261'</u>                  | Feet Of <u>MUD</u>               | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| Rec. <u>125</u>                   | Feet Of <u>MUDDY WATER @ GAS</u> | 5%gas <u>    </u> %oil <u>35</u> %water <u>60</u> %mud <u>    </u>    |   |
| Rec. <u>125</u>                   | Feet Of <u>MUDDY WATER @ GAS</u> | 10%gas <u>    </u> %oil <u>60</u> %water <u>30</u> %mud <u>    </u>   |   |
| Rec. <u>    </u>                  | Feet Of <u>WATERY MUD @ GAS</u>  | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| Rec. <u>    </u>                  | Feet Of <u>    </u>              | %gas <u>    </u> %oil <u>    </u> %water <u>    </u> %mud <u>    </u> |   |
| BHT <u>    </u>                   | °F Gravity <u>    </u>           | °API D@ <u>    </u>   | °F Corrected Gravity <u>    </u> °API <u>    </u> |
| RW <u>1.15</u> @ <u>64</u>        | °F Chlorides <u>85,000</u>       | ppm Recovery <u>    </u>  | Chlorides <u>    </u> ppm System <u>    </u>      |

|                                  |                  |                    |                               |  |
|----------------------------------|------------------|--------------------|-------------------------------|--|
| (A) Initial Hydrostatic Mud      | AK-1 <u>2506</u> | Alpine <u>2576</u> | PSI Recorder No. <u>3289</u>  | T-On Location <u>20:30</u>                       |
| (B) First Initial Flow Pressure  | <u>149</u>       | <u>118</u>         | PSI (depth) <u>5058</u>       | T-Started <u>04:00</u>                           |
| (C) First Final Flow Pressure    | <u>172</u>       | <u>165</u>         | PSI Recorder No. <u>11084</u> | T-Open <u>08:40</u>                              |
| (D) Initial Shut-In Pressure     | <u>438</u>       | <u>454</u>         | PSI (depth) <u>5089</u>       | T-Pulled <u>13:40</u>                            |
| (E) Second Initial Flow Pressure | <u>202</u>       | <u>171</u>         | PSI Recorder No. <u>    </u>  | T-Out <u>18:15</u>                               |
| (F) Second Final Flow Pressure   | <u>240</u>       | <u>259</u>         | PSI (depth) <u>    </u>       | T-Off Location <u>20:00</u>                      |
| (G) Final Shut-in Pressure       | <u>453</u>       | <u>477</u>         | PSI Initial Opening <u>30</u> | Test <u>BOTTOM HOLE</u>                          |
| (Q) Final Hydrostatic Mud        | <u>2474</u>      | <u>2326</u>        | PSI Initial Shut-in <u>60</u> | Jars <input checked="" type="checkbox"/>         |
|                                  |                  |                    | Final Flow <u>90</u>          | Safety Joint <input checked="" type="checkbox"/> |
|                                  |                  |                    | Final Shut-in <u>120</u>      | Straddle <u>    </u>                             |

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Harold Trapp  
 Our Representative John J. Schmidt

CONFIDENTIAL

ORIGINAL

Extra Packer     

Elec. Rec.

Mileage     

Other     

TOTAL PRICE \$

# Superior Testers Enterprises, Inc.

R.R. 3, Box 295 • Great Bend, Kansas 67530  
(316) 792-6902

Date 12-31-00 Location 7W 15-31-17 Elevation 2111 K.F. County Comanche  
Company Quok Resources Company Number of Copies 5

Charts Mailed to P.O. box 871 Tulsa Oklahoma 74102-0871

Drilling Contractor Cheyenne Drilling Inc. P.O. #2  
Length Drill Pipe 4267 I.D. Drill Pipe 3.90 Tool Joint Size 4 1/2" X. H.

Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONE

Length Drill Collars 588 I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" X. H.

Top Packer Depth 4880-4885 Bottom Packer Depth 4908 Number of Packers 3 Packer Size 6 3/4"

TESTED FROM 4885 TO 4908 ANCHOR LENGTH 23 TOTAL DEPTH 5197 Hole Size 7 7/8"

LEASE & WELL NO. FERRIS #3-15 FORMATION TESTED Marmaton TEST NO. 2

Mud Weight 9.4 Viscosity 73 Water Loss 9.4 Chlorides - Pits 11,300 D.S.T. \_\_\_\_\_

Maximum Temp. 116 °F Initial Hydrostatic Pressure (A) 2402 P.S.I. Final Hydrostatic Pressure (H) 2218 P.S.I.

Tool Open I.F.P. from 8:15 A.m to 8:45 A.m 30 min

Tool Closed I.C.I.P. from 8:45 A.m to 9:45 A.m 60 min

Tool Open F.F.P. from 9:45 A.m to 11:15 A.m 90 min

Tool Closed F.C.I.P. from 11:15 A.m to 1:15 A.m 100 min

Initial Blow Straw blow - bottom of a 5 Gallon bucket in 30 seconds - Gas in 15 min.

Final Blow Straw Blow - See Gas flow Report

Total Feet Recovered 200 Gravity of Oil \_\_\_\_\_ Corrected \_\_\_\_\_

| Feet of                              | % Gas | % Oil | % Mud | % Water |
|--------------------------------------|-------|-------|-------|---------|
| <u>000</u> Feet of <u>Grassy mud</u> |       |       |       |         |
| Feet of                              |       |       |       |         |

Remarks \_\_\_\_\_

Extra Equipment - Jars YES Safety Joint YES Extra Packer YES 3" Straddle YES Hook Wall NONE

Top Recorder No. 78225 Clock No. Electronic Depth 4899 Cir. Sub NONE Sampler NONE

Bottom Recorder No. 13179 Clock No. 47441 Depth 5194 Insurance NONE

Price of Job \_\_\_\_\_ Tool Operator Steve Busby

Approved By \_\_\_\_\_

Superior Testers Enterprises, Inc. shall not be liable for damage of any kind to the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND, KANSAS 67530 (316)792-6902

### GENERAL INFORMATION

|                        |                         |                          |              |
|------------------------|-------------------------|--------------------------|--------------|
| COMPANY NAME           | ONEOK RESOURCES COMPANY | LEASE AND WELL NUMBER    | FERRIN #3-15 |
| TEST DATE              | 12/31/00                | FORMATION TESTED         | MARMATON     |
| SECTION-TOWN-RANGE     | 15-31S-17W              | DRILL STEM TEST NUMBER   | 2            |
| STATE                  | KANSAS                  | REPORT NUMBER            | 13992        |
| COUNTY                 | COMANCHE                | ELEVATION KELLY BUSHINGS | 2105         |
| ELEVATION GROUND LEVEL | 2093                    | TESTING ENGINEER         | GENE BUDIG   |
| COMPANY REPRESENTATIVE | HARLD TRAPP             |                          |              |

### TOOL SETTING INFORMATION

|                      |      |                     |           |
|----------------------|------|---------------------|-----------|
| TEST INTERVAL (From) | 4885 | TOP PACKER DEPTH    | 4880-4885 |
| TEST INTERVAL (to)   | 4908 | BOTTOM PACKER DEPTH | 4908      |
| ANCHOR LENGTH        | 23   | NUMBER OF PACKERS   | 2         |
| TOTAL DEPTH (ft)     | 5197 | PACKER SIZE         | 6 3/4     |
|                      |      | HOLE SIZE           | 7 7/8     |

### FLOW TIMES

|                        |       |
|------------------------|-------|
| <i>INITIAL OPEN</i>    |       |
| TOOL OPEN (from)       | 8:15  |
| TOOL OPEN (to)         | 8:45  |
| DURATION (min.)        | 30    |
| <i>INITIAL SHUT-IN</i> |       |
| TOOL CLOSED (from)     | 8:45  |
| TOOL CLOSED (to)       | 9:45  |
| DURATION (min.)        | 60    |
| <i>FINAL OPEN</i>      |       |
| TOOL OPEN (from)       | 9:45  |
| TOOL OPEN (to)         | 11:15 |
| DURATION (min.)        | 90    |
| <i>FINAL SHUT-IN</i>   |       |
| TOOL CLOSED (from)     | 11:15 |
| TOOL CLOSED (to)       | 1:15  |
| DURATION (min.)        | 120   |

### PRESSURE READINGS

|                       |       |
|-----------------------|-------|
| INITIAL HYDROSTATIC   | 2402  |
| INITIAL FLOW          | 85    |
| FINAL INITIAL FLOW    | 99    |
| INITIAL SHUT-IN       | 1625  |
| INITIAL FINAL FLOW    | 78    |
| FINAL FLOW            | 108   |
| FINAL SHUT-IN         | 1618  |
| FINAL HYDROSTATIC     | 2218  |
| MAXIMUM TEMPERATURE   | 116   |
| TOP RECORDER DEPTH    | 4899  |
| RECORDER NUMBER       | 78225 |
| BOTTOM RECORDER DEPTH | 3194  |
| RECORDER NUMBER       | 13189 |

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### INITIAL BLOW

STRONG BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 30 SECONDS WITH GAS TO SURFACE IN 15 MINUTES

### FINAL BLOW

STRONG BLOW SEE GAS FLOW REPORT

### EXTRA EQUIPMENT

|                     |     |                    |     |
|---------------------|-----|--------------------|-----|
| JARS                | YES | EXTRA PACKER (3RD) | YES |
| SAFETY JOINT        | YES | EXTRA PACKER (4TH) | NO  |
| ELECTRONIC RECORDER | YES | STRADDLE           | YES |
| CIRCULATING SUB     | NO  | HOOK WALL          | NO  |
|                     |     | SAMPLER            | NO  |

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND ,KANSAS 67530 (316)792-6902

### WELL INFORMATION

DRILLING CONTRACTOR ..... **CHEYENNE DRILLING RIG #2**

DRILL PIPE LENGTH ..... **4267**

DRILL PIPE I.D. .... **3.8**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

DRILL COLLAR LENGTH ..... **588**

DRILL COLLAR I.D. .... **2.25**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

WEIGHT PIPE LENGTH .....

WEIGHT PIPE I.D. .... **2.25**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

MUD WEIGHT #/GAL ..... **9.4**

VISCOSITY ..... **73**

WATER LOSS ..... **9.6**

CHLORIDES-PITS ..... **11300**

CHLORIDES-DST .....

| FEET OF RECOVERY  | RECOVERY DESCRIPTION    | % GAS | % OIL | % MUD | % WATER |
|---|-------------------------|-------|-------|-------|---------|
| 1)<br>2)<br>3)<br>4)<br>5)<br>6)<br>7)<br>8)<br>9)<br>10)<br>11)<br>12)<br>13)<br>14)<br>15)  | 200<br><b>GASSY MUD</b> |       |       |       |         |
| <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="font-size: 1.2em; margin: 0;">RECEIVED</p> <p style="font-size: 1.2em; margin: 0;">APR 08 2002</p> <p style="font-size: 1.2em; margin: 0;">KCC WICHITA</p> </div> |                         |       |       |       |         |

TOTAL RECOVERY

### COMMENTS

# SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

GAS FLOW RATE

(316) 792-6902

#

|                      |                      |            |
|----------------------|----------------------|------------|
| STATE..... KANSAS    | Test Date .....      | #####      |
| COUNTY..... COMANCHE | Sec Town Range ..... | 15-31S-17W |
| FIELD.....           | Report Number .....  | 13992      |

## Initial Flow

| Comments       | Time<br>(hh:mm:ss) | Period<br>dt (min) | Inches H2O<br>Office Tester | PSI on<br>Office Tester | PSI on<br>Pitot Tube | Choke<br>Size (in) | Gas Rate<br>(MCF/Day) |
|----------------|--------------------|--------------------|-----------------------------|-------------------------|----------------------|--------------------|-----------------------|
| TOOL OPENED    | 8:40               | 20                 | 36                          |                         |                      | 3/8                | 21.300                |
| AT 8:15 WITH   | 8:50               | 30                 | 100                         |                         |                      | 3/8                | 35.600                |
| GAS TO SURFACE |                    |                    |                             |                         |                      |                    |                       |
| IN 15 MINUTES  |                    |                    |                             |                         |                      |                    |                       |
| AT 8:30        |                    |                    |                             |                         |                      |                    |                       |

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KCC WICHITA

## Final Flow

| Comments    | Time<br>(hh:mm:ss) | Period<br>dt (min) | Inches H2O<br>Office Tester | PSI on<br>Office Tester | PSI on<br>Pitot Tube | Choke<br>Size (in) | Gas Rate<br>(MCF/Day) |
|-------------|--------------------|--------------------|-----------------------------|-------------------------|----------------------|--------------------|-----------------------|
| TOOL OPENED | 9:55               | 10                 | 46                          |                         |                      | 3/4                | 96.300                |
| AT 9:45     | 10:05              | 20                 | 20                          |                         |                      | 3/4                | 63.500                |
|             | 10:15              | 30                 | 18                          |                         |                      | 3/4                | 60.200                |
|             | 10:25              | 40                 | 16                          |                         |                      | 3/4                | 56.800                |
|             | 10:35              | 50                 | 16                          |                         |                      | 3/4                | 56.800                |
|             | 10:45              | 60                 | 16                          |                         |                      | 3/4                | 56.800                |
|             | 10:55              | 70                 | 22                          |                         |                      | 3/4                | 66.600                |
|             | 11:05              | 80                 | 22                          |                         |                      | 3/4                | 66.600                |
|             | 11:15              | 90                 | 22                          |                         |                      | 3/4                | 66.600                |

**SUPERIOR TESTERS ENTERPRISES INC.**

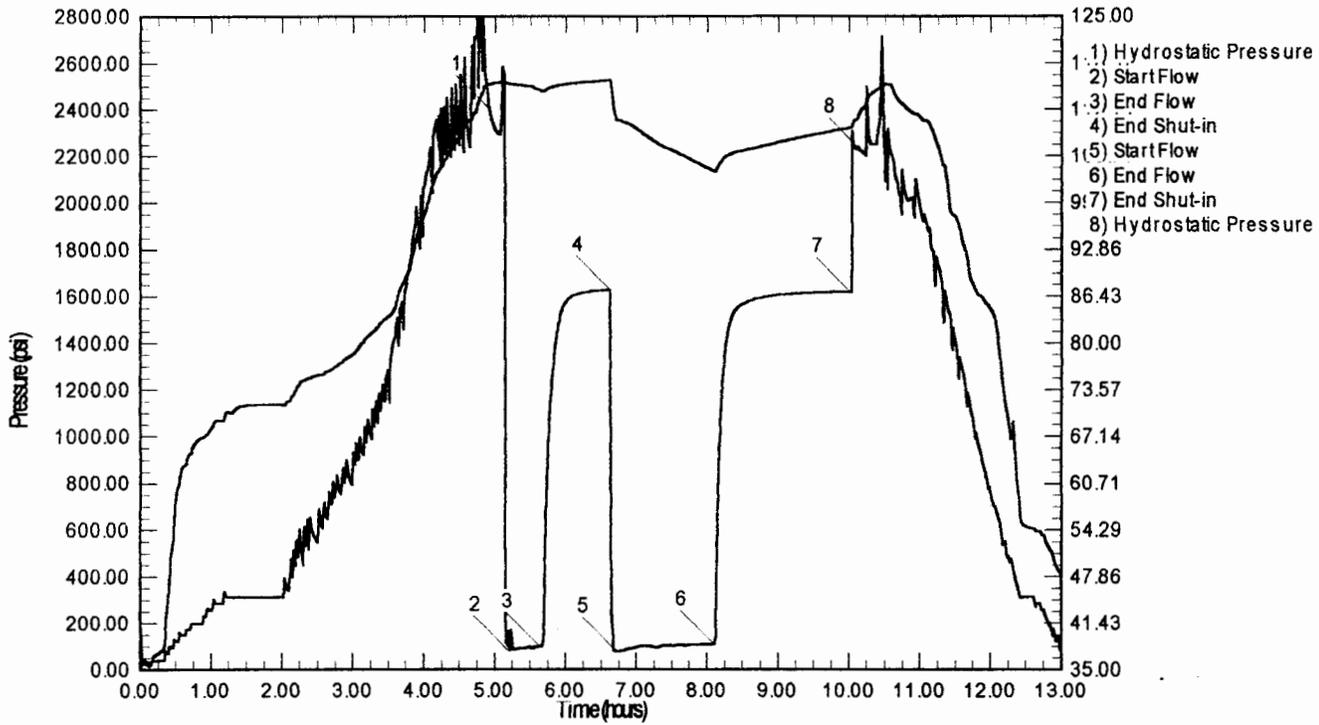
**Great Bend, Kansas**

**CHART DATA**

**(316) 792-6902**

**State** ..... KANSAS  
**County** ..... COMANCHE  
**Field** .....

**Test Date** ..... December 31, 2000  
**Sec Town Range** ..... 15-31S-17W  
**Report Number** ..... 13992



**Field Reading**

|     |                              |      |
|-----|------------------------------|------|
| (1) | Initial Hydrostatic Pressure | 2402 |
| (2) | Initial Flow Pressure        | 85   |
| (3) | Final Initial Flow Pressure  | 99   |
| (4) | Initial Shut-In Pressure     | 1625 |
| (5) | Initial Final Flow Pressure  | 78   |
| (6) | Final Flow Pressure          | 108  |
| (7) | Final Shut-In Pressure       | 1618 |
| (8) | Final Hydrostatic Pressure   | 2218 |

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**KCC WICHITA**

**ELECTRONIC RECORDER DEPTH 4899 FT, RECORDER NUMBER 78225**

Company: ONEOK RESOURCES COMPANY Lease & Well No. FERRIN #3-15 Test #: 2 Date: 12-31-2000 SEC. 15 TWP.  
 31S RGE. 17W

**SUPERIOR TESTERS ENTERPRISES INC.**

**DRILL STEM TEST REPORT**

GREAT BEND, KANSAS 67530 (316)792-6902

Release

MAR 18 2002

From

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GENERAL INFORMATION

|                              |                         |                                |              |
|------------------------------|-------------------------|--------------------------------|--------------|
| COMPANY NAME .....           | ONEOK RESOURCES COMPANY | LEASE AND WELL NUMBER .....    | FERRIN #3-15 |
| TEST DATE .....              | 12/31/00                | FORMATION TESTED .....         | MARMATON     |
| SECTION-TOWN-RANGE .....     | 15-31S-17W              | DRILL STEM TEST NUMBER .....   | 2            |
| STATE .....                  | KANSAS                  | REPORT NUMBER .....            | 13992        |
| COUNTY .....                 | COMANCHE                | ELEVATION KELLY BUSHINGS ..... | 2105         |
| ELEVATION GROUND LEVEL ..... | 2093                    | TESTING ENGINEER .....         | GENE BUDIG   |
| COMPANY REPRESENTATIVE ..... | HARLD TRAPP             |                                |              |

TOOL SETTING INFORMATION

|                            |      |                           |           |
|----------------------------|------|---------------------------|-----------|
| TEST INTERVAL (From) ..... | 4885 | TOP PACKER DEPTH .....    | 4880-4885 |
| TEST INTERVAL (to) .....   | 4908 | BOTTOM PACKER DEPTH ..... | 4908      |
| ANCHOR LENGTH .....        | 23   | NUMBER OF PACKERS .....   | 2         |
| TOTAL DEPTH (ft) .....     | 5197 | PACKER SIZE .....         | 6 3/4     |
|                            |      | HOLE SIZE .....           | 7 7/8     |

FLOW TIMES

*INITIAL OPEN*

TOOL OPEN (from) ..... 8:15  
 TOOL OPEN (to) ..... 8:45  
 DURATION (min.) ..... 30

*INITIAL SHUT-IN*

TOOL CLOSED (from) ..... 8:45  
 TOOL CLOSED (to) ..... 9:45  
 DURATION (min.) ..... 60

*FINAL OPEN*

TOOL OPEN (from) ..... 9:45  
 TOOL OPEN (to) ..... 11:15  
 DURATION (min.) ..... 90

*FINAL SHUT-IN*

TOOL CLOSED (from) ..... 11:15  
 TOOL CLOSED (to) ..... 1:15  
 DURATION (min.) ..... 120

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PRESSURE READINGS

INITIAL HYDROSTATIC ..... 2402  
 INITIAL FLOW ..... 85  
 FINAL INITIAL FLOW ..... 99  
 INITIAL SHUT-IN ..... 1625  
 INITIAL FINAL FLOW ..... 78  
 FINAL FLOW ..... 108  
 FINAL SHUT-IN ..... 1618  
 FINAL HYDROSTATIC ..... 2218

MAXIMUM TEMPERATURE ..... 116

TOP RECORDER DEPTH ..... 4899  
 RECORDER NUMBER ..... 78225  
 BOTTOM RECORDER DEPTH ..... 3194  
 RECORDER NUMBER ..... 13189

CONFIDENTIAL

ORIGINAL

INITIAL BLOW

**STRONG BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 30 SECONDS WITH GAS TO SURFACE IN 15 MINUTES**

FINAL BLOW

**STRONG BLOW SEE GAS FLOW REPORT**

EXTRA EQUIPMENT

|                           |     |                          |     |
|---------------------------|-----|--------------------------|-----|
| JARS .....                | YES | EXTRA PACKER (3RD) ..... | YES |
| SAFETY JOINT .....        | YES | EXTRA PACKER (4TH) ..... | NO  |
| ELECTRONIC RECORDER ..... | YES | STRADDLE .....           | YES |
| CIRCULATING SUB .....     | NO  | HOOK WALL .....          | NO  |
|                           |     | SAMPLER .....            | NO  |

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND, KANSAS 67530 (316)792-6902

### WELL INFORMATION

|                           |                                 |                           |                   |
|---------------------------|---------------------------------|---------------------------|-------------------|
| DRILLING CONTRACTOR ..... | <b>CHEYENNE DRILLING RIG #2</b> | DRILL COLLAR LENGTH ..... | <b>588</b>        |
| DRILL PIPE LENGTH .....   | <b>4267</b>                     | DRILL COLLAR I.D. ....    | <b>2.25</b>       |
| DRILL PIPE I.D. ....      | <b>3.8</b>                      | TOOL JOINT SIZE .....     | <b>4 1/2 X.H.</b> |
| TOOL JOINT SIZE .....     | <b>4 1/2 X.H.</b>               | WEIGHT PIPE LENGTH .....  |                   |
| WEIGHT PIPE I.D. ....     | <b>2.25</b>                     | MUD WEIGHT #/GAL .....    | <b>9.4</b>        |
| TOOL JOINT SIZE .....     | <b>4 1/2 X.H.</b>               | VISCOSITY .....           | <b>73</b>         |
|                           |                                 | WATER LOSS .....          | <b>9.6</b>        |
|                           |                                 | CHLORIDES-PITS .....      | <b>11300</b>      |
|                           |                                 | CHLORIDES-DST .....       |                   |

| FEET OF RECOVERY | RECOVERY DESCRIPTION | % GAS | % OIL | % MUD | % WATER |
|------------------|----------------------|-------|-------|-------|---------|
| 1)               | 200 GASSY MUD        |       |       |       |         |
| 2)               |                      |       |       |       |         |
| 3)               |                      |       |       |       |         |
| 4)               |                      |       |       |       |         |
| 5)               |                      |       |       |       |         |
| 6)               |                      |       |       |       |         |
| 7)               |                      |       |       |       |         |
| 8)               |                      |       |       |       |         |
| 9)               |                      |       |       |       |         |
| 10)              |                      |       |       |       |         |
| 11)              |                      |       |       |       |         |
| 12)              |                      |       |       |       |         |
| 13)              |                      |       |       |       |         |
| 14)              |                      |       |       |       |         |
| 15)              |                      |       |       |       |         |

TOTAL RECOVERY

### COMMENTS

# SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

GAS FLOW RATE

(316) 792-6902

#

Release

STATE..... KANSAS                      Test Date ..... **MAR 18 2002**  
 COUNTY..... COMANCHE                  Sec Town Range ..... **15-31S-17W**  
 FIELD.....                                      Report Number ..... **13992**

**From**  
**Confidential**

## Initial Flow

| Comments   | Time<br>(hh:mm:ss) | Period<br>dt (min) | Inches H2O<br>Orifice Tester | PSI on<br>Orifice Tester | PSI on<br>Pitot Tube | Choke<br>Size (in) | Gas Rate<br>(MCF/Day) |
|--|--------------------|--------------------|------------------------------|--------------------------|----------------------|--------------------|-----------------------|
| TOOL OPENED  | 8:40               | 20                 | 36                           |                          |                      | 3/8                | 21.300                |
| AT 8:15 WITH<br>GAS TO SURFACE<br>IN 15 MINUTES<br>AT 8:30 | 8:50               | 30                 | 100                          |                          |                      | 3/8                | 35.600                |

CONFIDENTIAL

**KCC**  
**MAR 20 2002**  
**CONFIDENTIAL**

ORIGINAL

## Final Flow

| Comments    | Time<br>(hh:mm:ss) | Period<br>dt (min) | Inches H2O<br>Orifice Tester | PSI on<br>Orifice Tester | PSI on<br>Pitot Tube | Choke<br>Size (in) | Gas Rate<br>(MCF/Day) |
|-------------|--------------------|--------------------|------------------------------|--------------------------|----------------------|--------------------|-----------------------|
| TOOL OPENED | 9:55               | 10                 | 46                           |                          |                      | 3/4                | 96.300                |
| AT 9:45     | 10:05              | 20                 | 20                           |                          |                      | 3/4                | 63.500                |
|             | 10:15              | 30                 | 18                           |                          |                      | 3/4                | 60.200                |
|             | 10:25              | 40                 | 16                           |                          |                      | 3/4                | 56.800                |
|             | 10:35              | 50                 | 16                           |                          |                      | 3/4                | 56.800                |
|             | 10:45              | 60                 | 16                           |                          |                      | 3/4                | 56.800                |
|             | 10:55              | 70                 | 22                           |                          |                      | 3/4                | 66.600                |
|             | 11:05              | 80                 | 22                           |                          |                      | 3/4                | 66.600                |
|             | 11:15              | 90                 | 22                           |                          |                      | 3/4                | 66.600                |

# SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

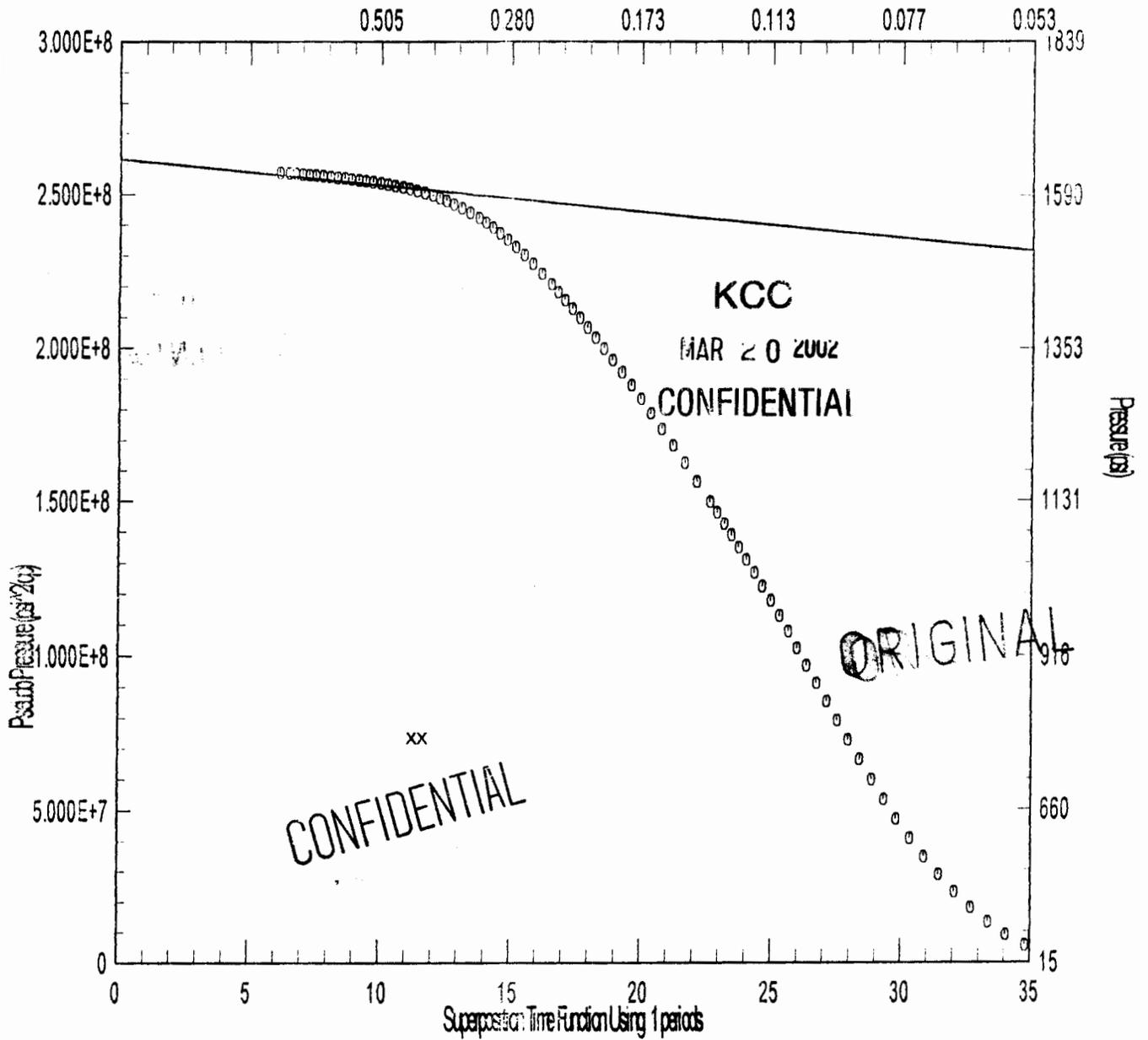
## SUPERPOSITION ANALYSIS

(316) 792-6902

### 1ST SHUT-IN

State ..... KANSAS  
County ..... COMANCHE  
Field .....

Test Date ..... 12/31/00  
Sec Town Range ..... 15-31S-17W  
Report Number ..... 13992



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## SUPERPOSITION ANALYSIS

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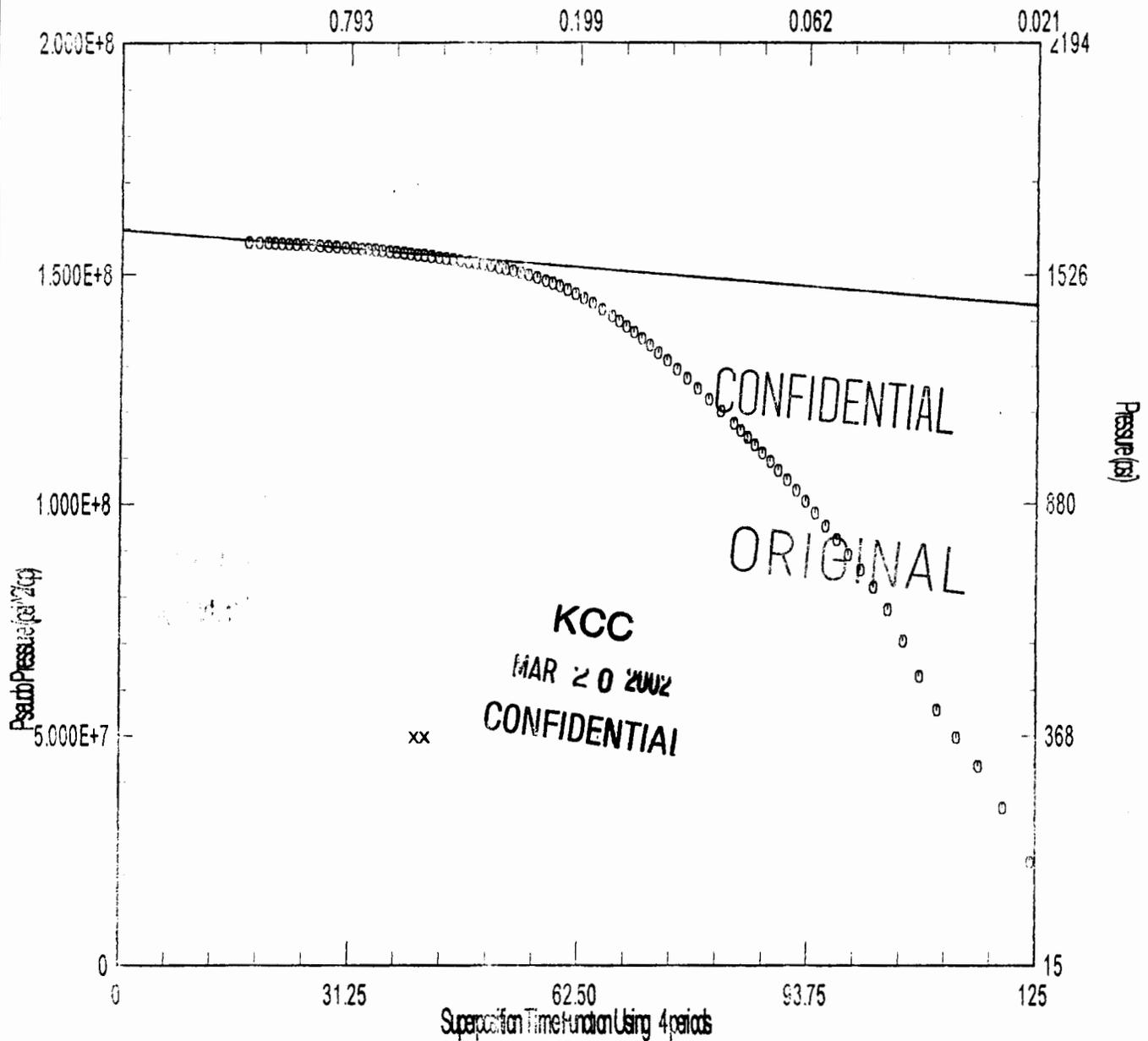
### 2ND SHUT-IN

State ..... KANSAS  
County ..... COMANCHE  
Field .....

Release  
**MAR 18 2002**

Test Date ..... 12/31/00  
Sec Town Range ..... 15-31S-17W  
Report Number ..... 13992

From  
Confidential



Field :  
County or Parish :  
State :

Date Printed: 01/01/01 15:22:50  
Analysis Period : End Flow - End 1st Shut-in  
Comment : Line #

Superposition Slope -> m' ..... -8.446254E+5  
Horner Slope -> m ..... -2.998420E+7  
Intercept ..... 2.614E+8  
P(dt=1 hr) ..... 2.565E+8  
Pwf ..... 1.004E+6  
R Sqr ..... -1.0000

intercept (psi) ..... 1645.901  
k (md) ..... 0.11164  
kh (md-ft) ..... 1.11637  
k/u (md/cp) ..... 1.92810  
kh/uB (md-ft/cp) ..... 19.28095  
Skin ..... 9.9268  
DP Skin ..... 1546.2229  
Total DP ..... 1553.3356  
Percent DP ..... 99.54%

Radius Invest (ft) ..... 4  
Radius Time (hrs) ..... 0.98

Delta Q = ..... 36  
h (ft)= ..... 10  
mu (cp) = ..... 0.0579  
B (stb/scf) = ..... 0.6870

First Point # ..... -1  
Second Point # ..... -1  
Start Real Time .....  
End Real Time .....  
Start SF Time .....

KCC

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Field :  
County or Parish :  
State :

Date Printed: 01/01/01 14:48:57  
Analysis Period : End Flow - End 2nd Shut-in  
Comment : Line #

Superposition Slope -> m' ..... -1.291824E+5  
Horner Slope -> m ..... -8.603547E+6  
Intercept ..... 1.596E+8  
P(dt=1 hr) ..... 1.561E+3  
Pwf ..... 1.583E+7  
R Sqr ..... 0.9726

Intercept (psi) ..... 1652.359  
k (md) ..... 0.72991  
kh (md-ft) ..... 7.29908  
k/u (md/cp) ..... 7.27000  
kh/uB (md-ft/cp) ..... 72.69995  
Skin ..... 17.2346  
DP Skin ..... 1350.3254  
Total DP ..... 1544.5768  
Percent DP ..... 87.42%

Radius Invest (ft) ..... 27  
Radius Time (hrs) ..... 1.91

Delta Q = ..... 67  
h (ft)= ..... 10  
mu (cp) = ..... 0.1004  
B (stb/scf) = ..... 0.7376

First Point # ..... 148  
Second Point # ..... 300  
Start Real Time ..... 0.447  
End Real Time ..... 1.908  
Start SF Time ..... 43.137

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