



## DRILL STEM TEST REPORT

Prepared For: **Shelby Resources LLC**

2717 Canal Boulevard  
Suite C  
Hays, Kansas 67601

ATTN: Jeremy Schwartz

### **Ward-County Unit 3-1**

#### **3/22S/16W/Pawnee**

Start Date: 2013.11.03 @ 06:52:00

End Date: 2013.11.03 @ 14:58:00

Job Ticket #: 17062                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.11.03 @ 15:20:52

Shelby Resources LLC

3/22S/16W/Pawnee

Ward-County Unit 3-1

DST # 3

Arbuckle

2013.11.03



# DRILL STEM TEST REPORT

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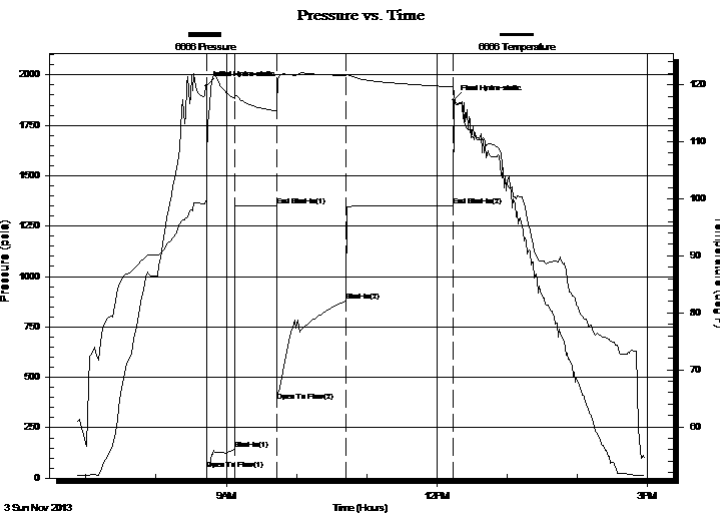
**3/22S/16W/Pawnee**  
**Ward-County Unit 3-1**  
 Job Ticket: 17062 **DST#: 3**  
 Test Start: 2013.11.03 @ 06:52:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:43:30  
 Time Test Ended: 14:58:00  
 Interval: **3960.00 ft (KB) To 3966.00 ft (KB) (TVD)**  
 Total Depth: 3966.00 ft (KB) (TVD)  
 Hole Diameter: 7.80 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ken Swinney  
 Unit No: 3325 Great Bend/48  
 Reference Elevations: 1999.00 ft (KB)  
 1986.00 ft (CF)  
 KB to GR/CF: 13.00 ft

**Serial #: 6666 Inside**  
 Press @ Run Depth: 878.30 psia @ 3962.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.11.03 End Date: 2013.11.03 Last Calib.: 2013.11.03  
 Start Time: 06:52:00 End Time: 14:58:00 Time On Btm: 2013.11.03 @ 08:43:00  
 Time Off Btm: 2013.11.03 @ 12:14:30

**TEST COMMENT:** 1ST Open 15 Minutes/Strong surging blow /Blow built to bottom of bucket in 13 minutes 30 seconds  
 1ST Shut In 45 Minutes/No blow back  
 2ND Open 60 Minutes/Strong blow /Blow built to bottom of bucket in 1 minute 30 seconds/Smooth build  
 2ND Shut In 90 Minutes/No blow back



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psia) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1946.58         | 99.65        | Initial Hydro-static |
| 1           | 45.78           | 106.48       | Open To Flow (1)     |
| 24          | 142.66          | 117.64       | Shut-In(1)           |
| 60          | 1348.76         | 115.42       | End Shut-In(1)       |
| 61          | 382.68          | 116.07       | Open To Flow (2)     |
| 120         | 878.30          | 121.61       | Shut-In(2)           |
| 211         | 1348.54         | 119.68       | End Shut-In(2)       |
| 212         | 1876.77         | 118.67       | Final Hydro-static   |

## Recovery

| Length (ft) | Description                       | Volume (bbl) |
|-------------|-----------------------------------|--------------|
| 1890.00     | Slightly mud and gas cut water    | 23.51        |
| 0.00        | Mud 2% Gas 3% Water 95%           | 0.00         |
| 0.00        | Recovery Chlorides 21000 ppm      | 0.00         |
| 0.00        | Recov. Resist. .18 ohms @ 68 deg. | 0.00         |
|             |                                   |              |
|             |                                   |              |

## Gas Rates

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



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TOOL DIAGRAM

Shelby Resources LLC  
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**3/22S/16W/Pawnee**  
**Ward-County Unit 3-1**  
 Job Ticket: 17062      **DST#: 3**  
 Test Start: 2013.11.03 @ 06:52:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3630.00 ft | Diameter: 3.80 inches | Volume: 50.92 bbl              | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 20000.00 lb  |
| Drill Collar:             | Length: 330.00 ft  | Diameter: 2.25 inches | Volume: 1.62 bbl               | Weight to Pull Loose: 88000.00 lb  |
|                           |                    |                       | <u>Total Volume: 52.54 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 27.00 ft           |                       |                                | String Weight: Initial 72000.00 lb |
| Depth to Top Packer:      | 3960.00 ft         |                       |                                | Final 82000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 6.00 ft            |                       |                                |                                    |
| Tool Length:              | 33.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description          | Length (ft)  | Serial No. | Position | Depth (ft) | Accum. Lengths                    |
|---------------------------|--------------|------------|----------|------------|-----------------------------------|
| Shut In Tool              | 5.00         |            |          | 3938.00    |                                   |
| Hydraulic Tool            | 5.00         |            |          | 3943.00    |                                   |
| Jars                      | 5.00         |            |          | 3948.00    |                                   |
| Safety Joint              | 2.00         |            |          | 3950.00    |                                   |
| Packer                    | 5.00         |            |          | 3955.00    | 27.00      Bottom Of Top Packer   |
| Packer                    | 5.00         |            |          | 3960.00    |                                   |
| Anchor                    | 1.00         |            |          | 3961.00    |                                   |
| Recorder                  | 1.00         | 6666       | Inside   | 3962.00    |                                   |
| Recorder                  | 1.00         | 6749       | Outside  | 3963.00    |                                   |
| Bullnose                  | 3.00         |            |          | 3966.00    | 6.00      Bottom Packers & Anchor |
| <b>Total Tool Length:</b> | <b>33.00</b> |            |          |            |                                   |



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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**Ward-County Unit 3-1**  
 Job Ticket: 17062      **DST#: 3**  
 Test Start: 2013.11.03 @ 06:52:00

## Mud and Cushion Information

|                                  |                            |                 |         |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | ppm     |
| Viscosity: 51.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 8.00 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psia |                 |         |
| Salinity: 8400.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description                       | Volume<br>bbl |
|--------------|-----------------------------------|---------------|
| 1890.00      | Slightly mud and gas cut water    | 23.506        |
| 0.00         | Mud 2% Gas 3% Water 95%           | 0.000         |
| 0.00         | Recovery Chlorides 21000 ppm      | 0.000         |
| 0.00         | Recov. Resist. .18 ohms @ 68 deg. | 0.000         |

Total Length: 1890.00 ft      Total Volume: 23.506 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

# Pressure vs. Time

