

**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Lotus Operating Co**

100 S Main Ste # 420  
Wichita KS 67202

ATTN: Joe Baker

**21 29 15W Pratt KS**

**Hirt "A" # 1**

Start Date: 2007.05.23 @ 14:57:25

End Date: 2007.05.24 @ 01:25:25

Job Ticket #: 25870 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



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**TESTING, INC.**

## DRILL STEM TEST REPORT

Lotus Operating Co  
100 S Main Ste # 420  
Wichita KS 67202  
ATTN: Joe Baker

Hirt "A" # 1

21 29 15W Pratt KS

Job Ticket: 25870

DST#: 1

Test Start: 2007.05.23 @ 14:57:25

### GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:10:25

Time Test Ended: 01:25:25

Test Type: Conventional Bottom Hole

Tester: Jerry Adams

Unit No: 36

Interval: 4588.00 ft (KB) To 4663.00 ft (KB) (TVD)

Total Depth: 4663.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1974.00 ft (KB)

1961.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 6798

Inside

Press@RunDepth: 188.72 psig @ 4593.00 ft (KB)

Start Date: 2007.05.23

End Date:

2007.05.24

Capacity: 7000.00 psig

Last Calib.: 2007.05.24

Start Time: 14:57:30

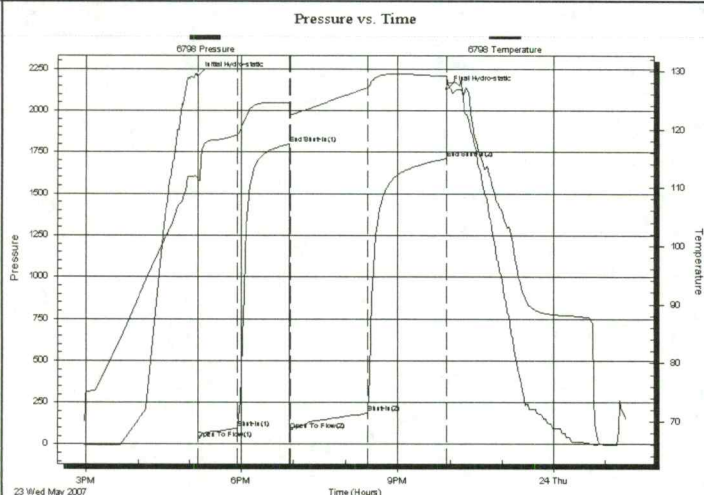
End Time:

01:25:25

Time On Btm: 2007.05.23 @ 17:09:55

Time Off Btm: 2007.05.23 @ 21:55:54

TEST COMMENT: IF Strong blow BOB in 4 mins.  
ISI Weak blow Built to 1 1/2 " Decreased to 1/4 "  
FF Strong blow BOB in 20 secs. GTS in 37 mins. ( see gas flow report)  
FSI Weak blow Steady at 2 1/2 "



### PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2210.17         | 111.69       | Initial Hydro-static |
| 1           | 31.31           | 111.13       | Open To Flow (1)     |
| 46          | 95.49           | 119.02       | Shut-In (1)          |
| 105         | 1796.86         | 124.56       | End Shut-In (1)      |
| 107         | 80.93           | 122.87       | Open To Flow (2)     |
| 195         | 188.72          | 127.18       | Shut-In (2)          |
| 286         | 1710.44         | 129.07       | End Shut-In (2)      |
| 286         | 2129.24         | 129.19       | Final Hydro-static   |

### Recovery

| Length (ft) | Description               | Volume (bbl) |
|-------------|---------------------------|--------------|
| 110.00      | HG&OCWM 30%G 60%O 5%W 5%M | 0.54         |
| 340.00      | HG&OCM 30%G 55%O 15%M     | 4.19         |
| 0.00        | 4136' GIP                 | 0.00         |
| 0.00        |                           | 0.00         |
|             |                           |              |
|             |                           |              |

### Gas Rates

|                | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|----------------|-----------------|------------------|
| First Gas Rate | 0.13           | 0.50            | 5.61             |
| Last Gas Rate  | 0.13           | 3.00            | 6.55             |
| Max. Gas Rate  | 0.13           | 3.00            | 6.55             |



**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Lotus Operating Co

100 S Main Ste # 420  
Wichita KS 67202

ATTN: Joe Baker

Hirt "A" # 1

**21 29 15W Pratt KS**

Job Ticket: 25870

DST#: 1

Test Start: 2007.05.23 @ 14:57:25

### Tool Information

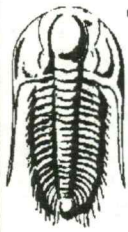
|                           |                    |                       |                         |                                    |
|---------------------------|--------------------|-----------------------|-------------------------|------------------------------------|
| Drill Pipe:               | Length: 4412.00 ft | Diameter: 3.80 inches | Volume: 61.89 bbl       | Tool Weight: 2100.00 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: 174.00 ft  | Diameter: 2.25 inches | Volume: 0.86 bbl        | Weight to Pull Loose: 75000.00 lb  |
|                           |                    |                       | Total Volume: 62.75 bbl | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 21.00 ft           |                       |                         | String Weight: Initial 71000.00 lb |
| Depth to Top Packer:      | 4588.00 ft         |                       |                         | Final 72000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                         |                                    |
| Interval between Packers: | 75.00 ft           |                       |                         |                                    |
| Tool Length:              | 98.00 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  |       |         | 4570.00 |                               |
| Hydraulic tool  | 5.00  |       |         | 4575.00 |                               |
| Safety Joint    | 3.00  |       |         | 4578.00 |                               |
| Packer          | 5.00  |       |         | 4583.00 | 23.00 Bottom Of Top Packer    |
| Packer          | 5.00  |       |         | 4588.00 |                               |
| Stubb           | 1.00  |       |         | 4589.00 |                               |
| Perforations    | 3.00  |       |         | 4592.00 |                               |
| Change Over Sub | 1.00  |       |         | 4593.00 |                               |
| Recorder        | 0.00  | 6798  | Inside  | 4593.00 |                               |
| Blank Spacing   | 62.00 |       |         | 4655.00 |                               |
| Change Over Sub | 1.00  |       |         | 4656.00 |                               |
| Perforations    | 4.00  |       |         | 4660.00 |                               |
| Recorder        | 0.00  | 13249 | Outside | 4660.00 |                               |
| Bullnose        | 3.00  |       |         | 4663.00 | 75.00 Bottom Packers & Anchor |

**Total Tool Length: 98.00**



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## DRILL STEM TEST REPORT

### FLUID SUMMARY

Lotus Operating Co  
100 S Main Ste # 420  
Wichita KS 67202  
ATTN: Joe Baker

Hirt "A" # 1

21 29 15W Pratt KS

Job Ticket: 25870

DST#: 1

Test Start: 2007.05.23 @ 14:57:25

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 64.00 sec/qt  
Water Loss: 8.77 in<sup>3</sup>  
Resistivity: 0.00 ohm.m  
Salinity: 4000.00 ppm  
Filter Cake: 0.02 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

| Length<br>ft | Description               | Volume<br>bbl |
|--------------|---------------------------|---------------|
| 110.00       | HG&OCWM 30%G 60%O 5%W 5%M | 0.541         |
| 340.00       | HG&OCM 30%G 55%O 15%M     | 4.186         |
| 0.00         | 4136 ' GIP                | 0.000         |
| 0.00         |                           | 0.000         |

Total Length: 450.00 ft Total Volume: 4.727 bbl

Num Fluid Samples: 0

Num Gas Bombs: 1

Serial #: GA-1

Laboratory Name: Caraway

Laboratory Location: Liberal, KS

Recovery Comments:

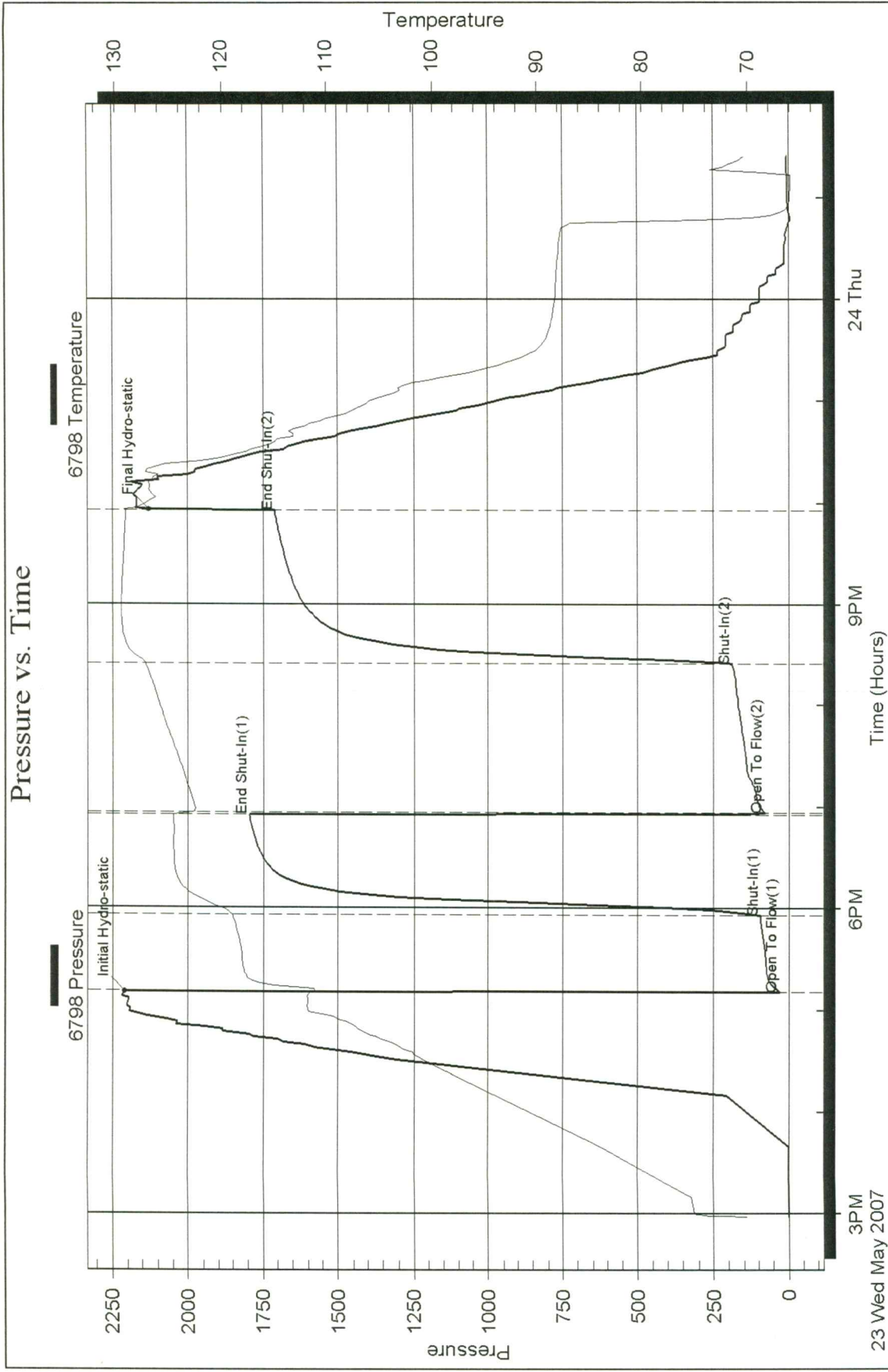
Serial #: 6798

Inside

Lotus Operating Co

21 29 15W Pratt KS

DST Test Number: 1





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## DRILL STEM TEST REPORT

**GAS RATES**

Lotus Operating Co

**Hirt "A" # 1**

100 S Main Ste # 420  
Wichita KS 67202

**21 29 15W Pratt KS**

Job Ticket: 25870

**DST#: 1**

ATTN: Joe Baker

Test Start: 2007.05.23 @ 14:57:25

### Gas Rates Information

Temperature: 59 deg C  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

| Flow Period | Elapsed Time | Choke<br>(mm) | Pressure<br>(kPaa) | Gas Rate<br>(m <sup>3</sup> /d) |
|-------------|--------------|---------------|--------------------|---------------------------------|
| 2           | 50           | 0.13          | 0.50               | 5.61                            |
| 2           | 50           | 0.13          | 0.50               | 5.61                            |
| 2           | 60           | 0.13          | 1.00               | 5.80                            |
| 2           | 70           | 0.13          | 2.00               | 6.18                            |
| 2           | 80           | 0.13          | 3.00               | 6.55                            |
| 2           | 90           | 0.13          | 3.00               | 6.55                            |



## DRILL STEM TEST REPORT

Prepared For: **Lotus Operating Co**

100 S Main Ste # 420  
Wichita KS 67202

ATTN: Joe Baker

**21 29 15W Pratt KS**

**Hirt "A" # 1**

Start Date: 2007.05.24 @ 13:56:49

End Date: 2007.05.24 @ 23:37:19

Job Ticket #: 25871      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



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## DRILL STEM TEST REPORT

Lotus Operating Co

100 S Main Ste # 420  
Wichita KS 67202

ATTN: Joe Baker

Hirt "A" # 1

21 29 15W Pratt KS

Job Ticket: 25871

DST#: 2

Test Start: 2007.05.24 @ 13:56:49

### GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:10:19

Time Test Ended: 23:37:19

Test Type: Conventional Bottom Hole

Tester: Jerry Adams

Unit No: 36

Interval: **4664.00 ft (KB) To 4762.00 ft (KB) (TVD)**

Total Depth: 4762.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1974.00 ft (KB)

1961.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: **6798** Inside

Press@RunDepth: 171.48 psig @ 4676.00 ft (KB)

Start Date: 2007.05.24

End Date:

2007.05.24

Capacity: 7000.00 psig

Last Calib.: 2007.05.24

Start Time: 13:56:54

End Time:

23:37:19

Time On Btm: 2007.05.24 @ 16:08:19

Time Off Btm: 2007.05.24 @ 20:54:48

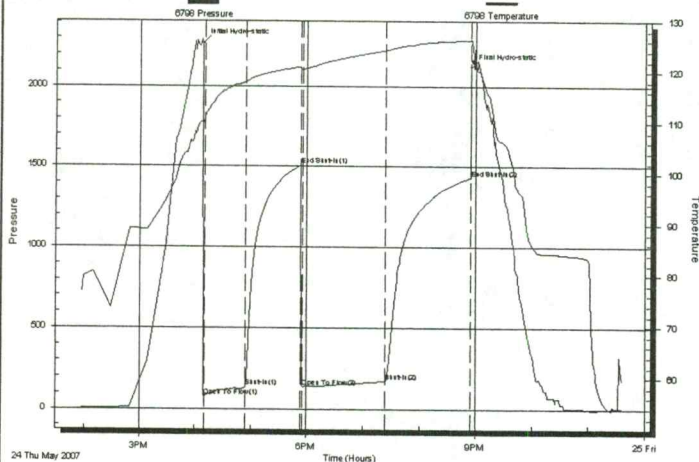
TEST COMMENT: IF Fair blow Built to 10 1/2 "

ISI No blow

FF Fair blow Built to 8 "

FSI No blow

Pressure vs. Time



### PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2263.20         | 110.47       | Initial Hydro-static |
| 2           | 78.38           | 111.06       | Open To Flow (1)     |
| 46          | 133.39          | 118.07       | Shut-In (1)          |
| 106         | 1507.32         | 121.05       | End Shut-In (1)      |
| 108         | 138.26          | 120.59       | Open To Flow (2)     |
| 196         | 171.48          | 124.26       | Shut-In (2)          |
| 286         | 1432.41         | 126.32       | End Shut-In (2)      |
| 287         | 2118.84         | 126.47       | Final Hydro-static   |

### Recovery

| Length (ft) | Description                  | Volume (bbl) |
|-------------|------------------------------|--------------|
| 294.00      | SWCMw/Oil scum 10%W 90%M     | 2.54         |
| 26.00       | Drig. Mud w/Oil scum 100%M   | 0.36         |
| 0.00        | RW= .191 @ 65 deg. 48000 ppm | 0.00         |
| 0.00        |                              | 0.00         |
|             |                              |              |
|             |                              |              |

### Gas Rates

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



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## DRILL STEM TEST REPORT

### TOOL DIAGRAM

Lotus Operating Co

100 S Main Ste # 420  
Wichita KS 67202

ATTN: Joe Baker

Hirt "A" # 1

21 29 15W Pratt KS

Job Ticket: 25871

DST#: 2

Test Start: 2007.05.24 @ 13:56:49

### Tool Information

|                           |                    |                       |                   |                        |             |
|---------------------------|--------------------|-----------------------|-------------------|------------------------|-------------|
| Drill Pipe:               | Length: 4473.00 ft | Diameter: 3.80 inches | Volume: 62.74 bbl | Tool Weight:           | 2100.00 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: 174.00 ft  | Diameter: 2.25 inches | Volume: 0.86 bbl  | Weight to Pull Loose:  | 80000.00 lb |
|                           |                    | Total Volume:         | 63.60 bbl         | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 6.00 ft            |                       |                   | String Weight: Initial | 73000.00 lb |
| Depth to Top Packer:      | 4664.00 ft         |                       |                   | Final                  | 74000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                   |                        |             |
| Interval between Packers: | 98.00 ft           |                       |                   |                        |             |
| Tool Length:              | 121.00 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  |       |         | 4646.00 |                               |
| Hydraulic tool  | 5.00  |       |         | 4651.00 |                               |
| Safety Joint    | 3.00  |       |         | 4654.00 |                               |
| Packer          | 5.00  |       |         | 4659.00 | 23.00 Bottom Of Top Packer    |
| Packer          | 5.00  |       |         | 4664.00 |                               |
| Stubb           | 1.00  |       |         | 4665.00 |                               |
| Perforations    | 10.00 |       |         | 4675.00 |                               |
| Change Over Sub | 1.00  |       |         | 4676.00 |                               |
| Recorder        | 0.00  | 6798  | Inside  | 4676.00 |                               |
| Blank Spacing   | 62.00 |       |         | 4738.00 |                               |
| Change Over Sub | 1.00  |       |         | 4739.00 |                               |
| Perforations    | 20.00 |       |         | 4759.00 |                               |
| Recorder        | 0.00  | 13249 | Outside | 4759.00 |                               |
| Bullnose        | 3.00  |       |         | 4762.00 | 98.00 Bottom Packers & Anchor |

**Total Tool Length: 121.00**



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## DRILL STEM TEST REPORT

### FLUID SUMMARY

Lotus Operating Co

Hirt "A" # 1

100 S Main Ste # 420  
Wichita KS 67202

**21 29 15W Pratt KS**

Job Ticket: 25871

DST#: 2

ATTN: Joe Baker

Test Start: 2007.05.24 @ 13:56:49

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 8.76 in<sup>3</sup>

Resistivity: 0.00 ohm.m

Salinity: 5000.00 ppm

Filter Cake: 0.02 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

### Recovery Information

Recovery Table

| Length<br>ft | Description                  | Volume<br>bbl |
|--------------|------------------------------|---------------|
| 294.00       | SWCMw/Oil scum 10%W 90%M     | 2.539         |
| 26.00        | Drig. Mud w/Oil scum 100%M   | 0.365         |
| 0.00         | RW= .191 @ 65 deg. 48000 ppm | 0.000         |
| 0.00         |                              | 0.000         |

Total Length: 320.00 ft

Total Volume: 2.904 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

