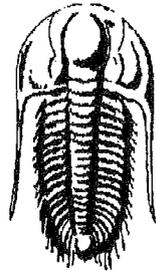


15-051-25766

35-13s-20w



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

## DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Co LLC**

704 E 12th St  
Hays KS 67601

ATTN: Mike Hertel

**35 13 20 Ellis KS**

**Dreiling # C-2**

Start Date: 2008.04.09 @ 01:51:55

End Date: 2008.04.09 @ 07:09:55

Job Ticket #: 30910                      DST #: 1

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Hertel Oil Co LLC

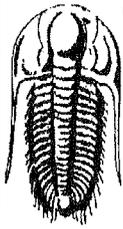
Dreiling # C-2

35 13 20 Ellis KS

DST # 1

Arbuckle

2008.04.09



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Hertel Oil Co LLC

704 E 12th St  
Hays KS 67601

ATTN: Mike Hertel

**Drilling # C-2**

**35 13 20 Ellis KS**

Job Ticket: 30910

**DST#: 1**

Test Start: 2008.04.09 @ 01:51:55

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:50:00  
 Time Test Ended: 07:09:55

Test Type: Conventional Bottom Hole  
 Tester: Dan Bangle  
 Unit No: 38

Interval: **3805.00 ft (KB) To 3860.00 ft (KB) (TVD)**  
 Total Depth: 3860.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good

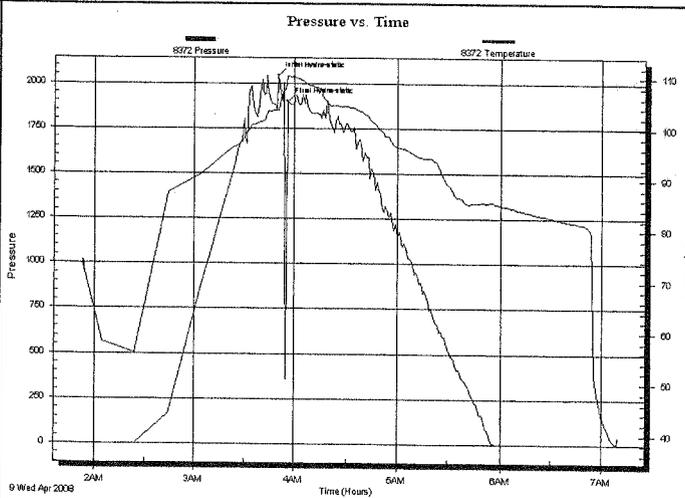
Reference Elevations: 2223.00 ft (KB)  
 2218.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8372 Inside**

Press@RunDepth: psig @ 3808.00 ft (KB)  
 Start Date: 2008.04.09 End Date: 2008.04.09  
 Start Time: 01:51:56 End Time: 07:09:55

Capacity: 7000.00 psig  
 Last Calib.: 2008.04.09  
 Time On Btm: 2008.04.09 @ 03:50:25  
 Time Off Btm: 2008.04.09 @ 03:55:55

TEST COMMENT: Packer failure



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2041.41         | 103.70       | Initial Hydro-static |
| 6           | 1899.24         | 110.45       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 200.00      | DM          | 2.81         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Hertel Oil Co LLC

**Dreiling # C-2**

704 E 12th St  
Hays KS 67601

**35 13 20 Ellis KS**

ATTN: Mike Hertel

Job Ticket: 30910

**DST#: 1**

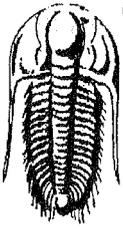
Test Start: 2008.04.09 @ 01:51:55

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3812.00 ft | Diameter: 3.80 inches | Volume: 53.47 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: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 60000.00 lb  |
|                           |                    |                       | <u>Total Volume: 53.47 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 28.00 ft           |                       |                                | String Weight: Initial 39000.00 lb |
| Depth to Top Packer:      | 3805.00 ft         |                       |                                | Final 39000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 55.00 ft           |                       |                                |                                    |
| Tool Length:              | 76.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |
| Tool Comments:            | Packer failure     |                       |                                |                                    |

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3785.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3790.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3795.00    |                               |
| Packer           | 5.00        |            |          | 3800.00    | 21.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3805.00    |                               |
| Stubb            | 1.00        |            |          | 3806.00    |                               |
| Perforations     | 1.00        |            |          | 3807.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3808.00    |                               |
| Recorder         | 0.00        | 8372       | Inside   | 3808.00    |                               |
| Recorder         | 0.00        | 8368       | Outside  | 3808.00    |                               |
| Drill Pipe       | 31.00       |            |          | 3839.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3840.00    |                               |
| Perforations     | 17.00       |            |          | 3857.00    |                               |
| Bullnose         | 3.00        |            |          | 3860.00    | 55.00 Bottom Packers & Anchor |

**Total Tool Length: 76.00**



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

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Hertel Oil Co LLC

**Dreiling # C-2**

704 E 12th St  
Hays KS 67601

**35 13 20 Ellis KS**

ATTN: Mike Hertel

Job Ticket: 30910

**DST#: 1**

Test Start: 2008.04.09 @ 01:51:55

**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: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9600.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 200.00       | DM          | 2.805         |

Total Length: 200.00 ft

Total Volume: 2.805 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8372

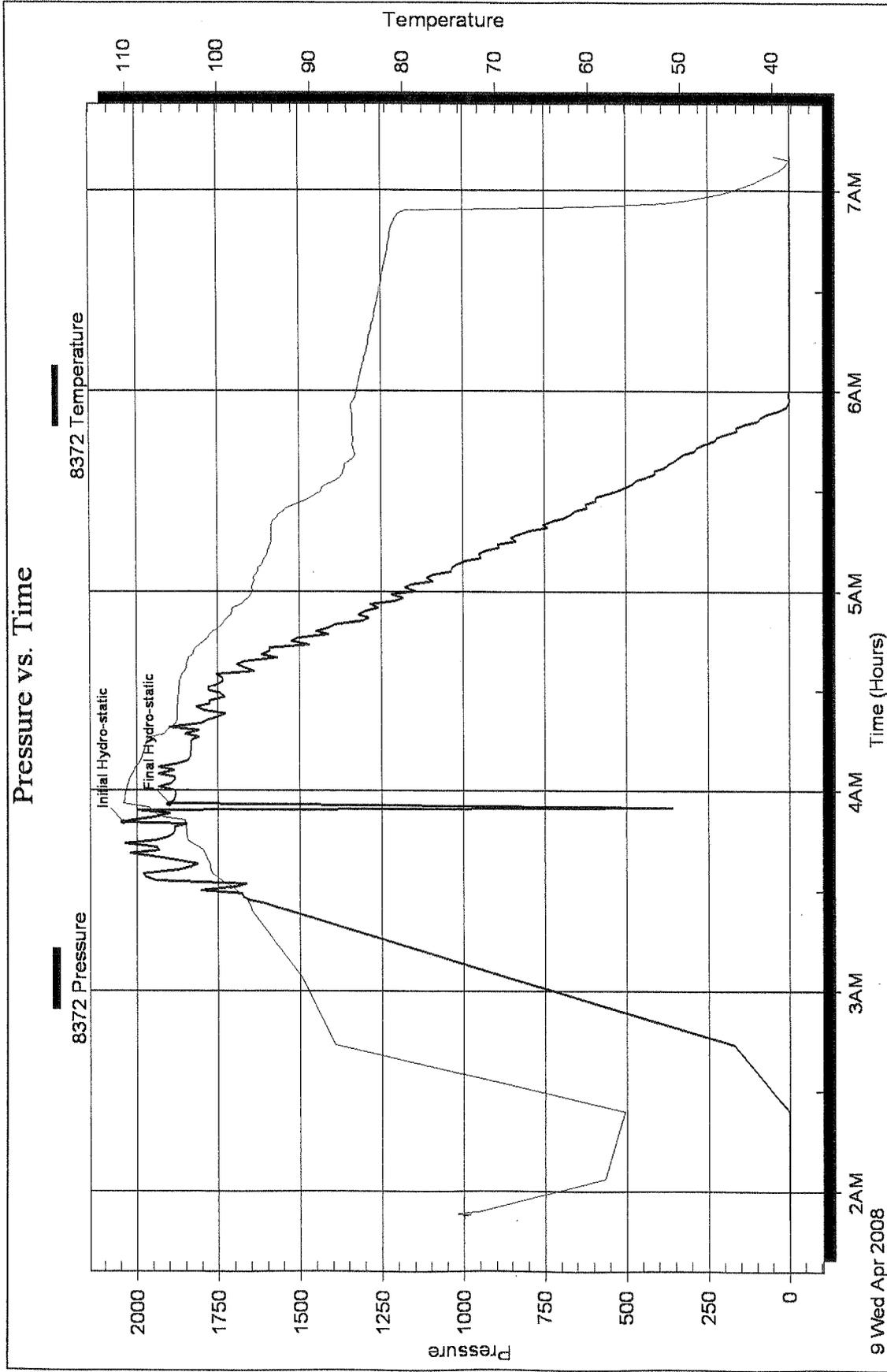
Inside

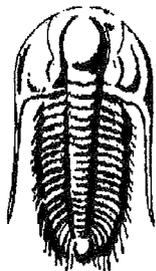
Hertel Oil Co LLC

35 13 20 Ellis KS

DST Test Number: 1

### Pressure vs. Time





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Hertel Oil Co LLC**

704 E 12th St  
Hays KS 67601

ATTN: Mike Hertel

**35 13 20 Ellis KS**

**Dreiling # C-2**

Start Date: 2008.04.09 @ 19:05:30

End Date: 2008.04.10 @ 01:49:00

Job Ticket #: 30911                      DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Hertel Oil Co LLC

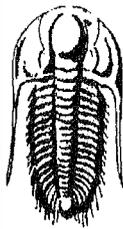
Dreiling # C-2

35 13 20 Ellis KS

DST # 2

Arbuckle

2008.04.09



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Hertel Oil Co LLC

704 E 12th St  
Hays KS 67601

ATTN: Mike Hertel

**Dreiling # C-2**

**35 13 20 Ellis KS**

Job Ticket: 30911

**DST#: 2**

Test Start: 2008.04.09 @ 19:05:30

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:30:00  
 Time Test Ended: 01:49:00

Test Type: Conventional Bottom Hole  
 Tester: Dan Bangle  
 Unit No: 38

Interval: **3784.00 ft (KB) To 3860.00 ft (KB) (TVD)**  
 Total Depth: 3860.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2223.00 ft (KB)  
 2218.00 ft (CF)  
 KB to GR/CF: 5.00 ft

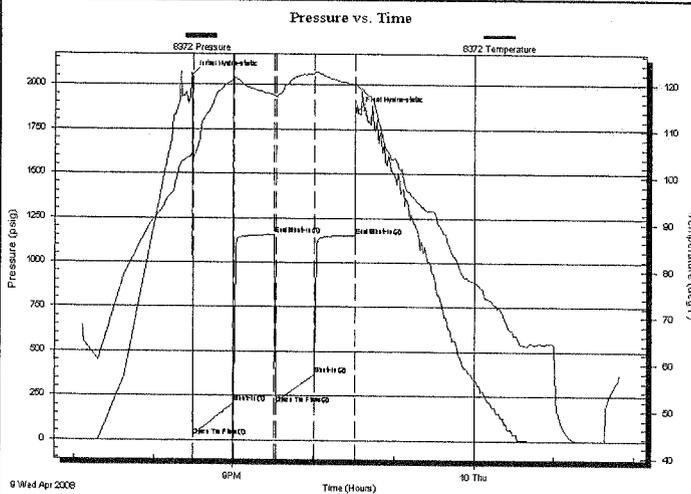
**Serial #: 8372**

**Inside**

Press@RunDepth: 371.93 psig @ 3787.00 ft (KB)  
 Start Date: 2008.04.09 End Date: 2008.04.10  
 Start Time: 19:05:31 End Time: 01:49:00

Capacity: 7000.00 psig  
 Last Calib.: 2008.04.10  
 Time On Btm: 2008.04.09 @ 20:29:30  
 Time Off Btm: 2008.04.09 @ 22:32:30

TEST COMMENT: IF Weak building to 8" fair blow  
 FF Weak building to 8" fair blow



## PRESSURE SUMMARY

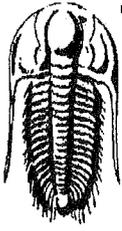
| Time (Mn.) | Pressure (psig) | Temp (deg F) | Annotation           |
|------------|-----------------|--------------|----------------------|
| 0          | 2057.84         | 104.97       | Initial Hydro-static |
| 1          | 19.63           | 103.69       | Open To Flow (1)     |
| 32         | 210.79          | 120.84       | Shut-In(1)           |
| 62         | 1155.93         | 117.68       | End Shut-In(1)       |
| 63         | 205.59          | 117.16       | Open To Flow (2)     |
| 92         | 371.93          | 122.30       | Shut-In(2)           |
| 121        | 1153.75         | 119.88       | End Shut-In(2)       |
| 123        | 1855.92         | 119.54       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 400.00      | MW          | 5.61         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Hertel Oil Co LLC

**Dreiling # C-2**

704 E 12th St  
Hays KS 67601

**35 13 20 Ellis KS**

ATTN: Mike Hertel

Job Ticket: 30911

**DST#: 2**

Test Start: 2008.04.09 @ 19:05:30

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3778.00 ft | Diameter: 3.80 inches | Volume: 53.00 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: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 60000.00 lb  |
|                           |                    |                       | <b>Total Volume: 53.00 bbl</b> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 15.00 ft           |                       |                                | String Weight: Initial 39000.00 lb |
| Depth to Top Packer:      | 3784.00 ft         |                       |                                | Final 42000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 76.00 ft           |                       |                                |                                    |
| Tool Length:              | 97.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3764.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3769.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3774.00    |                               |
| Packer           | 5.00        |            |          | 3779.00    | 21.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3784.00    |                               |
| Stubb            | 1.00        |            |          | 3785.00    |                               |
| Perforations     | 1.00        |            |          | 3786.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3787.00    |                               |
| Recorder         | 0.00        | 8372       | Inside   | 3787.00    |                               |
| Recorder         | 0.00        | 8368       | Outside  | 3787.00    |                               |
| Drill Pipe       | 62.00       |            |          | 3849.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3850.00    |                               |
| Perforations     | 7.00        |            |          | 3857.00    |                               |
| Bullnose         | 3.00        |            |          | 3860.00    | 76.00 Bottom Packers & Anchor |

**Total Tool Length: 97.00**



**TRILOBITE**  
TESTING, INC

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Hertel Oil Co LLC

**Dreiling # C-2**

704 E 12th St  
Hays KS 67601

**35 13 20 Ellis KS**

ATTN: Mike Hertel

Job Ticket: 30911

**DST#: 2**

Test Start: 2008.04.09 @ 19:05:30

## 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:

20000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 400.00       | MW          | 5.611         |

Total Length: 400.00 ft      Total Volume: 5.611 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .30 @ 80 = 20000ppm

Serial #: 8372

Inside

Hertel Oil Co LLC

35 13 20 Ellis KS

DST Test Number: 2

### Pressure vs. Time

