

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

## DRILL STEM TEST REPORT

Prepared For: **Crawford Oil**

PO Box 1366  
El Dorado KS 67042

ATTN: Ted Jochems

**31 14S 21W Trego KS**

**CDCF 2-31**

Start Date: 2006.08.28 @ 23:03:51

End Date: 2006.08.29 @ 08:23:34

Job Ticket #: 25314 DST #: 1

15-195-22383-00-00

NW NE SW NE

1388 FNL 1935 FEL

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

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Printed: 2006.09.06 @ 10:44:05 Page 1

Crawford Oil

CDCF 2-31

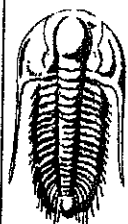
31 14S 21W Trego KS

DST # 1

Cherokee

2006.08.28

15-195-22383



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

## DRILL STEM TEST REPORT

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25314

DST#: 1

ATTN: Ted Jochems

Test Start: 2006.08.28 @ 23:03:51

### GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:04:04

Time Test Ended: 08:23:34

Test Type: Conventional Bottom Hole

Tester: Brian Fairbank

Unit No: 24

Interval: 3919.00 ft (KB) To 3932.00 ft (KB) (TVD)

Total Depth: 3932.00 ft (KB) (TVD)

Reference Elevations: 2077.00 ft (KB)

Hole Diameter: 7.88 inches Hole Condition: Good

2072.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6769

Inside

Press@RunDepth: 170.13 psig @ 3920.01 ft (KB)

Start Date: 2006.08.28

End Date:

2006.08.29

Capacity: 7000.00 psig

Last Calib.: 2006.08.29

Start Time: 23:03:51

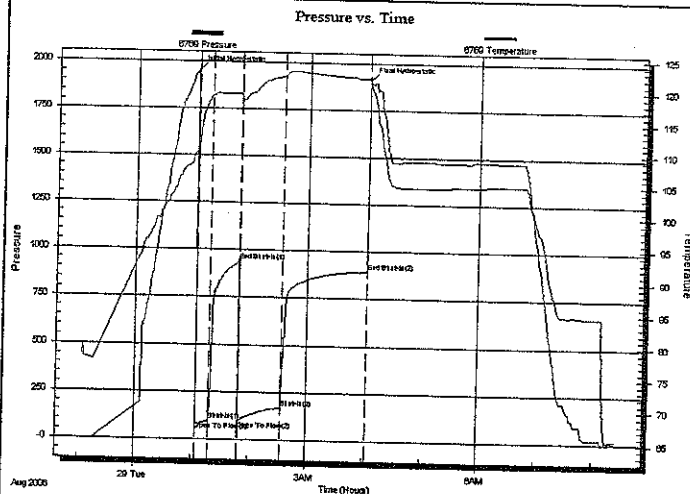
End Time:

08:23:34

Time On Btm: 2006.08.29 @ 01:03:34

Time Off Btm: 2006.08.29 @ 04:03:34

TEST COMMENT: IFP BOB 10 min.  
ISI 2 3/4 " blow back  
FFP BOB 7 min  
FSI 3 1/2 " blow back



### PRESSURE SUMMARY

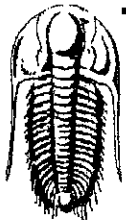
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1955.83         | 110.00       | Initial Hydro-static |
| 1           | 45.81           | 109.62       | Open To Flow (1)     |
| 15          | 96.32           | 119.04       | Shut-In(1)           |
| 45          | 936.78          | 119.32       | End Shut-In(1)       |
| 45          | 96.09           | 118.65       | Open To Flow (2)     |
| 90          | 170.13          | 122.22       | Shut-In(2)           |
| 180         | 890.51          | 121.81       | End Shut-In(2)       |
| 180         | 1912.75         | 122.14       | Final Hydro-static   |

### Recovery

| Length (ft) | Description          | Volume (bbl) |
|-------------|----------------------|--------------|
| 60.00       | SGOCM 10%G 10%O 80%M | 0.30         |
| 30.00       | GOCM 15%G 20%O 65%M  | 0.15         |
| 300.00      | GMO 10%G 87%O 3%M    | 3.93         |
|             |                      |              |
|             |                      |              |
|             |                      |              |

### Gas Rates

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



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

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25314

DST#: 1

ATTN: Ted Jochens

Test Start: 2006.08.28 @ 23:03:51

### Tool Information

|                           |                    |                       |                         |                        |             |
|---------------------------|--------------------|-----------------------|-------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3801.00 ft | Diameter: 3.80 inches | Volume: 53.32 bbl       | Tool Weight:           | 2500.00 lb  |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl        | Weight set on Packer:  | 25000.00 lb |
| Drill Collar:             | Length: 121.00 ft  | Diameter: 2.25 inches | Volume: 0.60 bbl        | Weight to Pull Loose:  | 55000.00 lb |
|                           |                    |                       | Total Volume: 53.92 bbl | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 30.00 ft           |                       |                         | String Weight: Initial | 46000.00 lb |
| Depth to Top Packer:      | 3919.00 ft         |                       |                         | Final                  | 48000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                         |                        |             |
| Interval between Packers: | 13.02 ft           |                       |                         |                        |             |
| Tool Length:              | 40.02 ft           |                       |                         |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                         |                        |             |

Tool Comments:

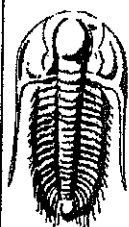
| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool     | 5.00        |            |          | 3897.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3902.00    |                               |
| Jars             | 5.00        |            |          | 3907.00    |                               |
| Safety Joint     | 2.00        |            |          | 3909.00    |                               |
| Packer           | 5.00        |            |          | 3914.00    | 27.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3919.00    |                               |
| Stubb            | 1.00        |            |          | 3920.00    |                               |
| Recorder         | 0.01        | 6769       | Inside   | 3920.01    |                               |
| Perforations     | 9.00        |            |          | 3929.01    |                               |
| Recorder         | 0.01        | 13548      | Outside  | 3929.02    |                               |
| Bullnose         | 3.00        |            |          | 3932.02    | 13.02 Bottom Packers & Anchor |

Total Tool Length: 40.02

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

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25314

DST#: 1

ATTN: Ted Jocherns

Test Start: 2006.08.28 @ 23:03:51

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 10.00 lb/gal

Viscosity: 51.00 sec/qt

Water Loss: 8.73 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 6000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

42 deg API

ppm

### Recovery Information

Recovery Table

| Length<br>ft | Description          | Volume<br>bbl |
|--------------|----------------------|---------------|
| 60.00        | SGOCM 10%G 10%O 80%M | 0.295         |
| 30.00        | GOCM 15%G 20%O 65%M  | 0.148         |
| 300.00       | GMO 10%G 87%O 3%M    | 3.926         |

Total Length: 390.00 ft

Total Volume: 4.369 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 480 GIP

DST Test Number: 1

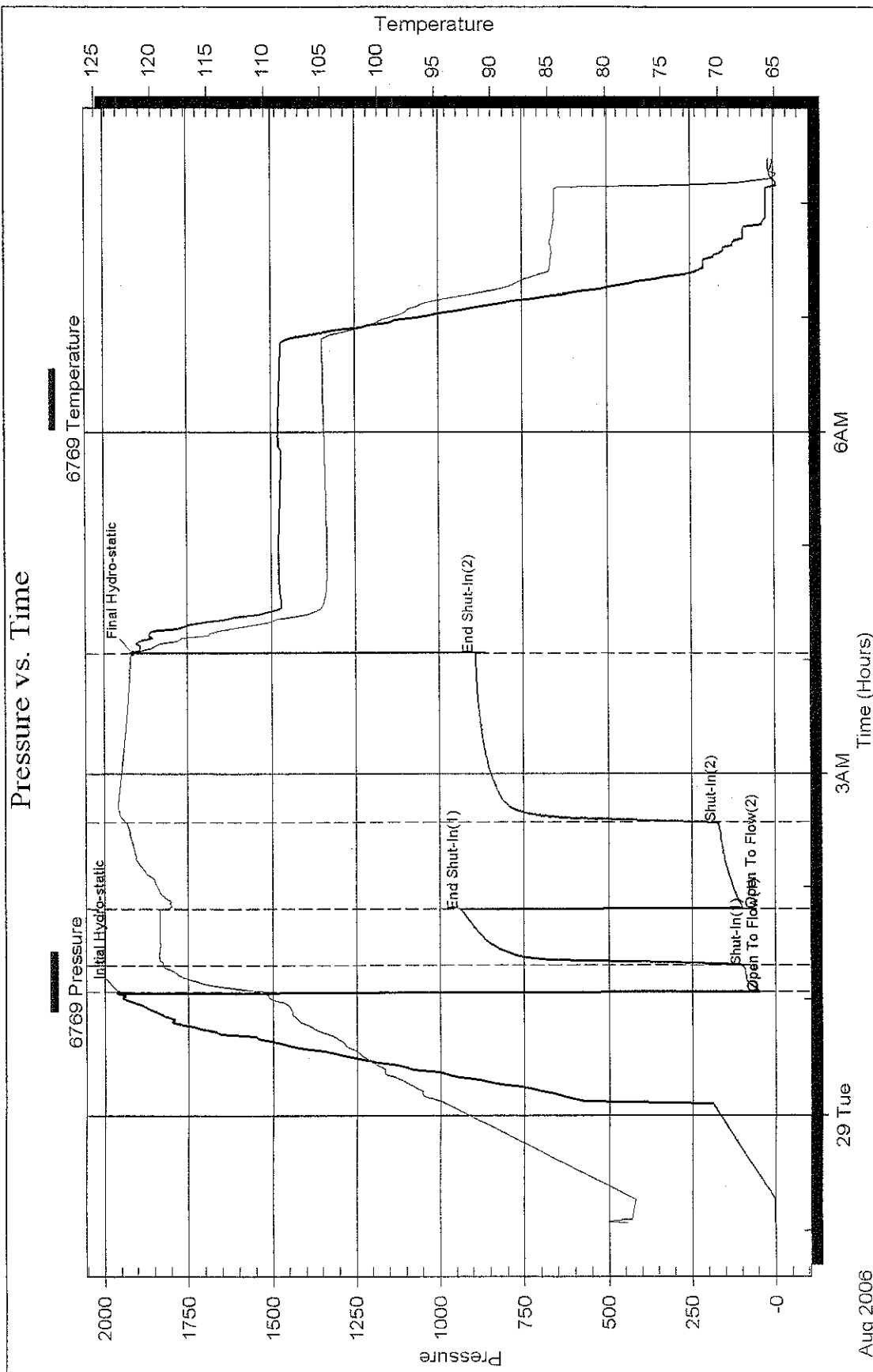
31 14S 21W Trego KS

Crawford Oil

Inside

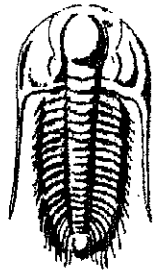
Serial #: 6769

# Pressure vs. Time



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TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Crawford Oil**

PO Box 1366  
El Dorado KS 67042

ATTN: Ted Jochems

**31 14S 21W Trego KS**

**CDCF 2-31**

Start Date: 2006.08.29 @ 19:12:54

End Date: 2006.08.30 @ 01:53:52

Job Ticket #: 25315                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Crawford Oil

CDCF 2-31

31 14S 21W Trego KS

DST # 2

Cherokee (2)

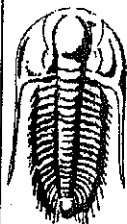
2006.08.29

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

## DRILL STEM TEST REPORT

Crawford Oil

PO Box 1366  
El Dorado KS 67042

ATTN: Ted Jochems

CDCF 2-31

31 14S 21W Trego KS

Job Ticket: 25315

DST#: 2

Test Start: 2006.08.29 @ 19:12:54

### GENERAL INFORMATION:

Formation: **Cherokee (2)**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:52:22

Time Test Ended: 01:53:52

Interval: **3933.00 ft (KB) To 3955.00 ft (KB) (TVD)**

Total Depth: 3955.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole

Tester: Brian Fairbank

Unit No: 24

Reference Elevations: 2077.00 ft (KB)

2072.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6769

Inside

Press@RunDepth: 89.49 psig @ 3938.01 ft (KB)

Start Date: 2006.08.29 End Date: 2006.08.30

Start Time: 19:12:54 End Time: 01:53:52

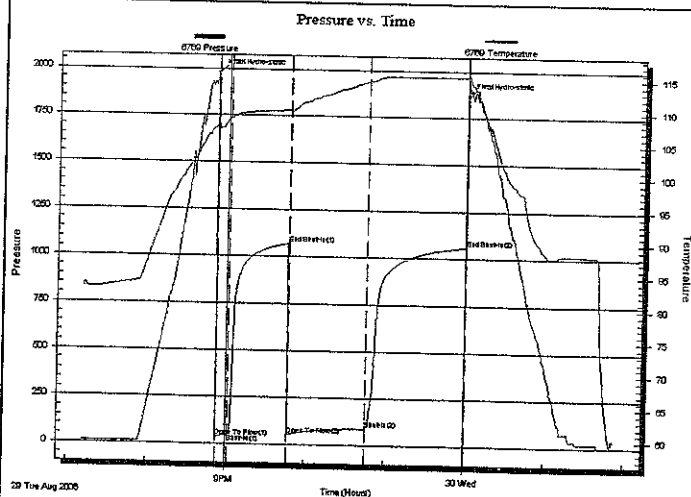
Capacity: 7000.00 psig

Last Calib.: 2006.08.30

Time On Btm: 2006.08.29 @ 20:52:07

Time Off Btm: 2006.08.30 @ 00:00:52

TEST COMMENT: IFP Weak blow throughout - 1/4" - 2"  
ISI No blow back  
FFP No blow 3 min. - weak to good blow - sur - 7"  
FSI No blow back 30 min. Weak sur blow back 20 min.



### PRESSURE SUMMARY

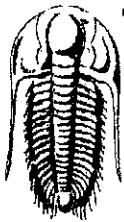
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1977.74         | 107.59       | Initial Hydro-static |
| 1           | 34.63           | 107.14       | Open To Flow (1)     |
| 10          | 49.96           | 108.76       | Shut-In (1)          |
| 54          | 1068.72         | 110.12       | End Shut-In (1)      |
| 55          | 52.53           | 109.91       | Open To Flow (2)     |
| 114         | 89.49           | 114.59       | Shut-In (2)          |
| 189         | 1059.71         | 115.44       | End Shut-In (2)      |
| 189         | 1863.45         | 115.71       | Final Hydro-static   |

### Recovery

| Length (ft) | Description       | Volume (bbl) |
|-------------|-------------------|--------------|
| 110.00      | HOCM 30%O 70%M    | 0.54         |
| 30.00       | FREE OIL 97%O 3%M | 0.32         |
|             |                   |              |
|             |                   |              |
|             |                   |              |
|             |                   |              |

### Gas Rates

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



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

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25315

DST#: 2

ATTN: Ted Jochems

Test Start: 2006.08.29 @ 19:12:54

### Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3800.00 ft | Diameter: 3.80 inches | Volume: 53.30 bbl              | Tool Weight:           | 2500.00 lb  |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer:  | 25000.00 lb |
| Drill Collar:             | Length: 121.00 ft  | Diameter: 2.25 inches | Volume: 0.60 bbl               | Weight to Pull Loose:  | 55000.00 lb |
|                           |                    |                       | <u>Total Volume: 53.90 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 15.00 ft           |                       |                                | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer:      | 3933.00 ft         |                       |                                | Final                  | 46000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 22.02 ft           |                       |                                |                        |             |
| Tool Length:              | 49.02 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |
| Tool Comments:            |                    |                       |                                |                        |             |

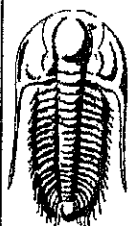
| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool     | 5.00        |            |          | 3911.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3916.00    |                               |
| Jars             | 5.00        |            |          | 3921.00    |                               |
| Safety Joint     | 2.00        |            |          | 3923.00    |                               |
| Packer           | 5.00        |            |          | 3928.00    | 27.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3933.00    |                               |
| Stubb            | 1.00        |            |          | 3934.00    |                               |
| Perforations     | 4.00        |            |          | 3938.00    |                               |
| Recorder         | 0.01        | 6769       | Inside   | 3938.01    |                               |
| Perforations     | 14.00       |            |          | 3952.01    |                               |
| Recorder         | 0.01        | 13548      | Outside  | 3952.02    |                               |
| Bullnose         | 3.00        |            |          | 3955.02    | 22.02 Bottom Packers & Anchor |

**Total Tool Length: 49.02**

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

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25315

DST#: 2

ATTN: Ted Jochems

Test Start: 2006.08.29 @ 19:12:54

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.74 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description       | Volume<br>bbl |
|--------------|-------------------|---------------|
| 110.00       | HOCM 30%O 70%M    | 0.541         |
| 30.00        | FREE OIL 97%O 3%M | 0.321         |

Total Length: 140.00 ft

Total Volume: 0.862 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

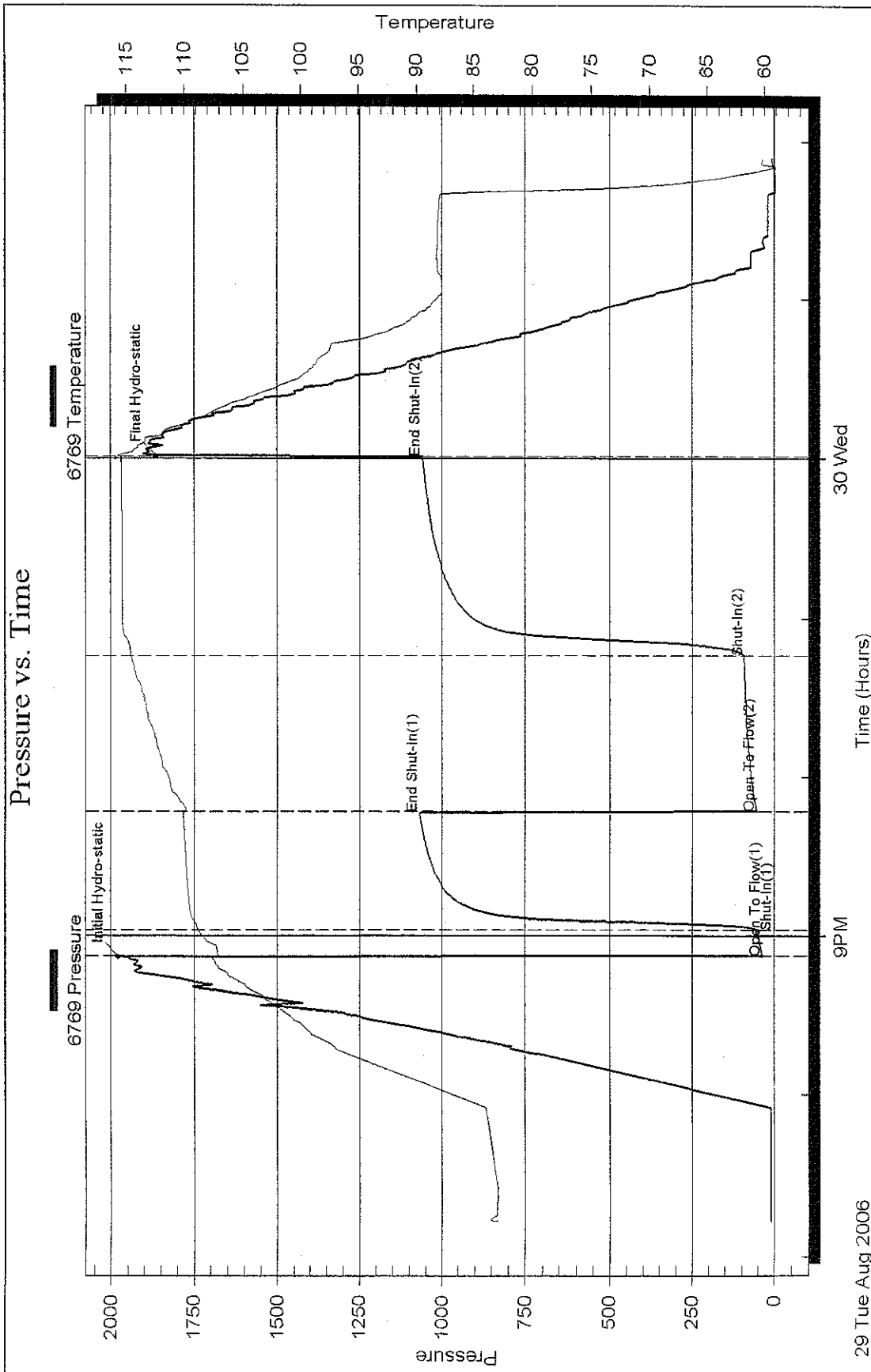
Serial #:

Laboratory Name:

Laboratory Location:

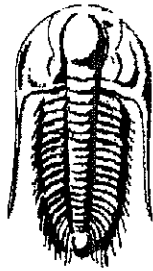
Recovery Comments:

# Pressure vs. Time



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**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Crawford Oil**

PO Box 1366  
El Dorado KS 67042

ATTN: Ted Jochems

**31 14S 21W Trego KS**

**CDCF 2-31**

Start Date: 2006.08.30 @ 03:18:10

End Date: 2006.08.30 @ 10:52:23

Job Ticket #: 25316      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Crawford Oil

CDCF 2-31

31 14S 21W Trego KS

DST # 3

Cherokee (3)

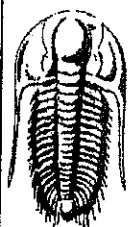
2006.08.30

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**TRILOBITE**  
TESTING, INC.

## DRILL STEM TEST REPORT

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25316

DST#: 3

ATTN: Ted Jochems

Test Start: 2006.08.30 @ 03:18:10

### GENERAL INFORMATION:

Formation: **Cherokee (3)**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:08:38

Time Test Ended: 10:52:23

Test Type: Conventional Straddle

Tester: Brian Fairbank

Unit No: 24

Interval: **3919.00 ft (KB) To 3927.00 ft (KB) (TVD)**

Total Depth: 3955.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2077.00 ft (KB)

2072.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6769

Inside

Press@RunDepth: 106.90 psig @ 3920.01 ft (KB)

Start Date: 2006.08.30

End Date:

2006.08.30

Start Time: 03:18:10

End Time:

10:52:23

Capacity: 7000.00 psig

Last Calib.: 2006.08.30

Time On Btm: 2006.08.30 @ 05:08:23

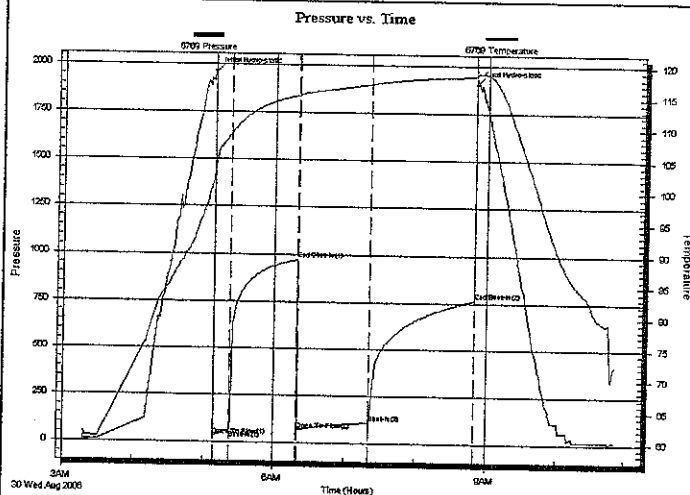
Time Off Btm: 2006.08.30 @ 08:49:53

TEST COMMENT: IFP Weak to good blow sur - 7 1/2 "

ISI 1/2 " blow back

FFP BOB 15 min.

FSI 1/4 " blow back died 45 min.



### PRESSURE SUMMARY

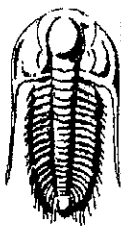
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1959.96         | 103.14       | Initial Hydro-static |
| 1           | 31.51           | 103.02       | Open To Flow (1)     |
| 14          | 62.31           | 108.96       | Shut-In (1)          |
| 71          | 971.77          | 115.27       | End Shut-In (1)      |
| 72          | 66.97           | 115.29       | Open To Flow (2)     |
| 133         | 106.90          | 117.09       | Shut-In (2)          |
| 222         | 761.97          | 118.45       | End Shut-In (2)      |
| 222         | 1901.05         | 118.93       | Final Hydro-static   |

### Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 30.00       | OCM 10%O 90%M          | 0.15         |
| 185.00      | FREE OIL 10%G 87%O 3%M | 1.77         |
|             |                        |              |
|             |                        |              |
|             |                        |              |
|             |                        |              |

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25316

DST#: 3

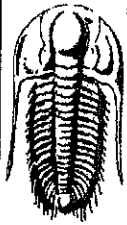
ATTN: Ted Jochems

Test Start: 2006.08.30 @ 03:18:10

### Tool Information

|                           |                    |                         |                   |                                    |
|---------------------------|--------------------|-------------------------|-------------------|------------------------------------|
| Drill Pipe:               | Length: 3793.00 ft | Diameter: 3.80 inches   | Volume: 53.21 bbl | Tool Weight: 2500.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches   | Volume: 0.00 bbl  | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 121.00 ft  | Diameter: 2.25 inches   | Volume: 0.60 bbl  | Weight to Pull Loose: 60000.00 lb  |
|                           |                    | Total Volume: 53.81 bbl |                   | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 17.00 ft           |                         |                   | String Weight: Initial 45000.00 lb |
| Depth to Top Packer:      | 3919.00 ft         |                         |                   | Final 48000.00 lb                  |
| Depth to Bottom Packer:   | 3928.01 ft         |                         |                   |                                    |
| Interval between Packers: | 9.01 ft            |                         |                   |                                    |
| Tool Length:              | 63.02 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        |            |          | 3902.00    |                               |
| Hydraulic tool     | 5.00        |            |          | 3907.00    |                               |
| Jars               | 5.00        |            |          | 3912.00    |                               |
| Safety Joint       | 2.00        |            |          | 3914.00    |                               |
| Packer             | 5.00        |            |          | 3919.00    | 22.00 Bottom Of Top Packer    |
| Stubb              | 1.00        |            |          | 3920.00    |                               |
| Recorder           | 0.01        | 6769       | Inside   | 3920.01    |                               |
| Perforations       | 2.00        |            |          | 3922.01    |                               |
| Blank Off Sub      | 1.00        |            |          | 3923.01    |                               |
| Blank Spacing      | 5.00        |            |          | 3928.01    |                               |
| Packer             | 5.00        |            |          | 3933.01    | 9.01 Tool Interval            |
| Packer             | 5.00        |            |          | 3938.01    |                               |
| Perforations       | 18.00       |            |          | 3956.01    |                               |
| Blank Spacing      | 1.00        |            |          | 3957.01    |                               |
| Recorder           | 0.01        | 13760      | Below    | 3957.02    |                               |
| Bullnose           | 3.00        |            |          | 3960.02    | 32.01 Bottom Packers & Anchor |
| Total Tool Length: |             | 63.02      |          |            |                               |



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

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25316

DST#: 3

ATTN: Ted Jochems

Test Start: 2006.08.30 @ 03:18:10

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 46.00 sec/qt

Water Loss: 8.71 in<sup>3</sup>

Resistivity: ohm.m

Salinity: 6000.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

40 deg API

ppm

### Recovery Information

Recovery Table

| Length<br>ft | Description            | Volume<br>bbl |
|--------------|------------------------|---------------|
| 30.00        | OCM 10%O 90%M          | 0.148         |
| 185.00       | FREE OIL 10%G 87%O 3%M | 1.766         |

Total Length: 215.00 ft

Total Volume: 1.914 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

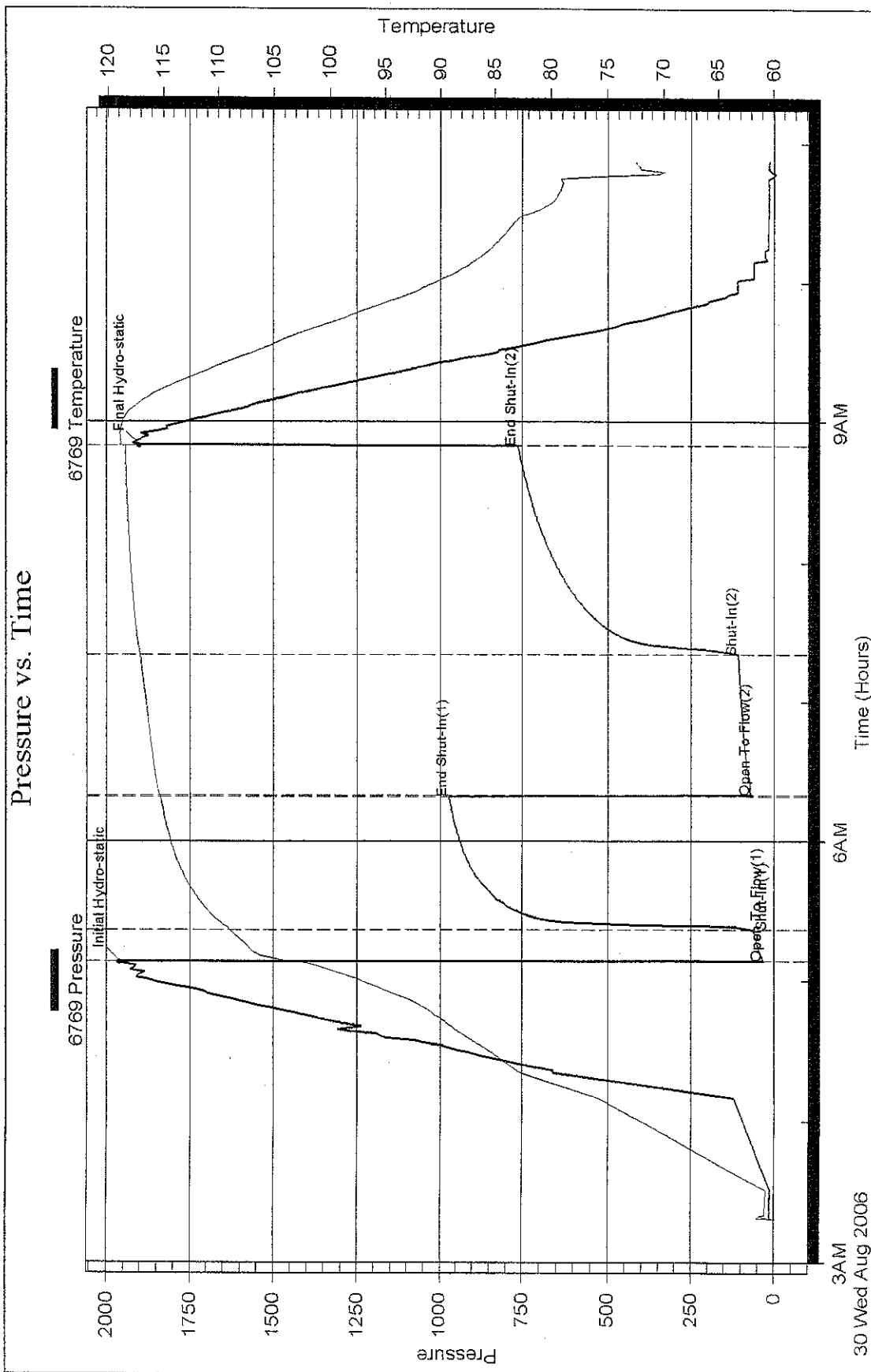
Serial #:

Laboratory Name:

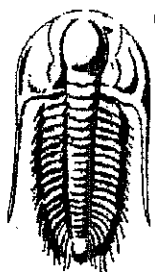
Laboratory Location:

Recovery Comments: 360 GIP

# Pressure vs. Time







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

## DRILL STEM TEST REPORT

Prepared For: **Crawford Oil**

PO Box 1366  
El Dorado KS 67042

ATTN: Ted Jochems

**31 14S 21W Trego KS**

**CDCF 2-31**

Start Date: 2006.08.30 @ 17:29:28

End Date: 2006.08.31 @ 00:42:26

Job Ticket #: 25317

DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

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KCC WICHITA

Crawford Oil

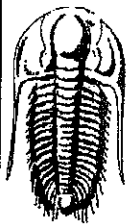
CDCF 2-31

31 14S 21W Trego KS

DST # 4

Katina

2006.08.30



**TRILOBITE**  
TESTING, INC.

## DRILL STEM TEST REPORT

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25317

DST#: 4

ATTN: Ted Jochems

Test Start: 2006.08.30 @ 17:29:28

### GENERAL INFORMATION:

Formation: **Katina**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:12:56

Time Test Ended: 00:42:26

Test Type: Conventional Bottom Hole

Tester: Brian Fairbank

Unit No: 24

Interval: 3933.00 ft (KB) To 3962.00 ft (KB) (TVD)

Total Depth: 3962.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2077.00 ft (KB)

2072.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6769

Inside

Press@RunDepth: 136.85 psig @ 3936.01 ft (KB)

Start Date: 2006.08.30

End Date:

2006.08.31

Capacity: 7000.00 psig

Last Calib.: 2006.08.31

Start Time: 17:29:28

End Time:

00:42:26

Time On Btm: 2006.08.30 @ 19:12:41

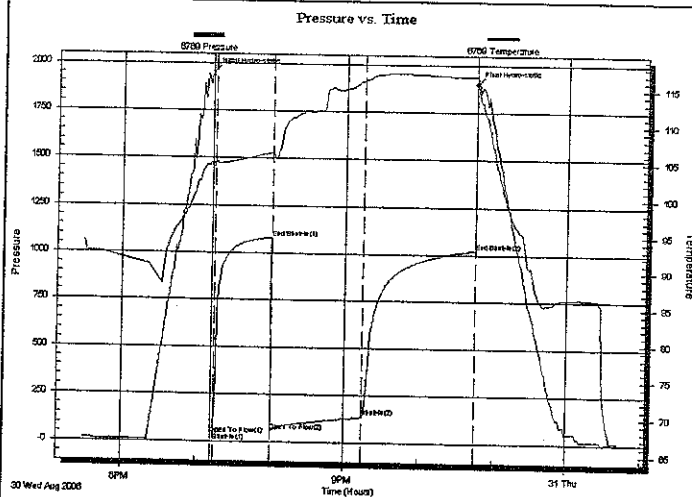
Time Off Btm: 2006.08.30 @ 22:44:56

TEST COMMENT: IFP Weak blow throughout 1/2" - 2"

ISI No blow back

FFP BOB 26 min.

FSI 2" blow back died 80 min.



### PRESSURE SUMMARY

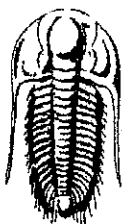
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1953.67         | 104.48       | Initial Hydro-static |
| 1           | 35.01           | 103.78       | Open To Flow (1)     |
| 3           | 47.60           | 105.15       | Shut-In (1)          |
| 48          | 1082.64         | 106.23       | End Shut-In (1)      |
| 48          | 56.46           | 105.92       | Open To Flow (2)     |
| 123         | 136.85          | 116.19       | Shut-In (2)          |
| 212         | 1022.39         | 116.74       | End Shut-In (2)      |
| 213         | 1897.25         | 117.04       | Final Hydro-static   |

### Recovery

| Length (ft) | Description           | Volume (bbl) |
|-------------|-----------------------|--------------|
| 30.00       | GMCO 20%G 50%O 30%M   | 0.15         |
| 130.00      | GHOCM 5%G 25%O 70%M   | 0.99         |
| 110.00      | FREE OIL 7%G 90%O 3%M | 1.54         |
|             |                       |              |
|             |                       |              |
|             |                       |              |

### Gas Rates

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



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

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25317

DST#: 4

ATTN: Ted Jochems

Test Start: 2006.08.30 @ 17:29:28

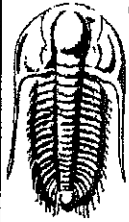
### Tool Information

|                           |                    |                       |                   |                        |             |
|---------------------------|--------------------|-----------------------|-------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3800.00 ft | Diameter: 3.80 inches | Volume: 53.30 bbl | Tool Weight:           | 2500.00 lb  |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl  | Weight set on Packer:  | 25000.00 lb |
| Drill Collar:             | Length: 121.00 ft  | Diameter: 2.25 inches | Volume: 0.60 bbl  | Weight to Pull Loose:  | 70000.00 lb |
|                           |                    | Total Volume:         | 53.90 bbl         | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 15.00 ft           |                       |                   | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer:      | 3933.00 ft         |                       |                   | Final                  | 48000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                   |                        |             |
| Interval between Packers: | 29.02 ft           |                       |                   |                        |             |
| Tool Length:              | 56.02 ft           |                       |                   |                        |             |
| Number of Packers:        | 2                  | Diameter:             | 6.75 inches       |                        |             |
| Tool Comments:            |                    |                       |                   |                        |             |

### Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool     | 5.00        |            |          | 3911.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3916.00    |                               |
| Jars             | 5.00        |            |          | 3921.00    |                               |
| Safety Joint     | 2.00        |            |          | 3923.00    |                               |
| Packer           | 5.00        |            |          | 3928.00    | 27.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3933.00    |                               |
| Stubb            | 1.00        |            |          | 3934.00    |                               |
| Perforations     | 2.00        |            |          | 3936.00    |                               |
| Recorder         | 0.01        | 6769       | Inside   | 3936.01    |                               |
| Perforations     | 23.00       |            |          | 3959.01    |                               |
| Recorder         | 0.01        | 13548      | Outside  | 3959.02    |                               |
| Bullnose         | 3.00        |            |          | 3962.02    | 29.02 Bottom Packers & Anchor |

Total Tool Length: 56.02



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

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Crawford Oil

CDCF 2-31

PO Box 1366  
El Dorado KS 67042

31 14S 21W Trego KS

Job Ticket: 25317

DST#: 4

ATTN: Ted Jochems

Test Start: 2006.08.30 @ 17:29:28

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 42.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description           | Volume<br>bbl |
|--------------|-----------------------|---------------|
| 30.00        | GMCO 20%G 50%O 30%M   | 0.148         |
| 130.00       | GHOCM 5%G 25%O 70%M   | 0.995         |
| 110.00       | FREE OIL 7%G 90%O 3%M | 1.543         |

Total Length: 270.00 ft

Total Volume: 2.686 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 120' GIP

DST Test Number: 4

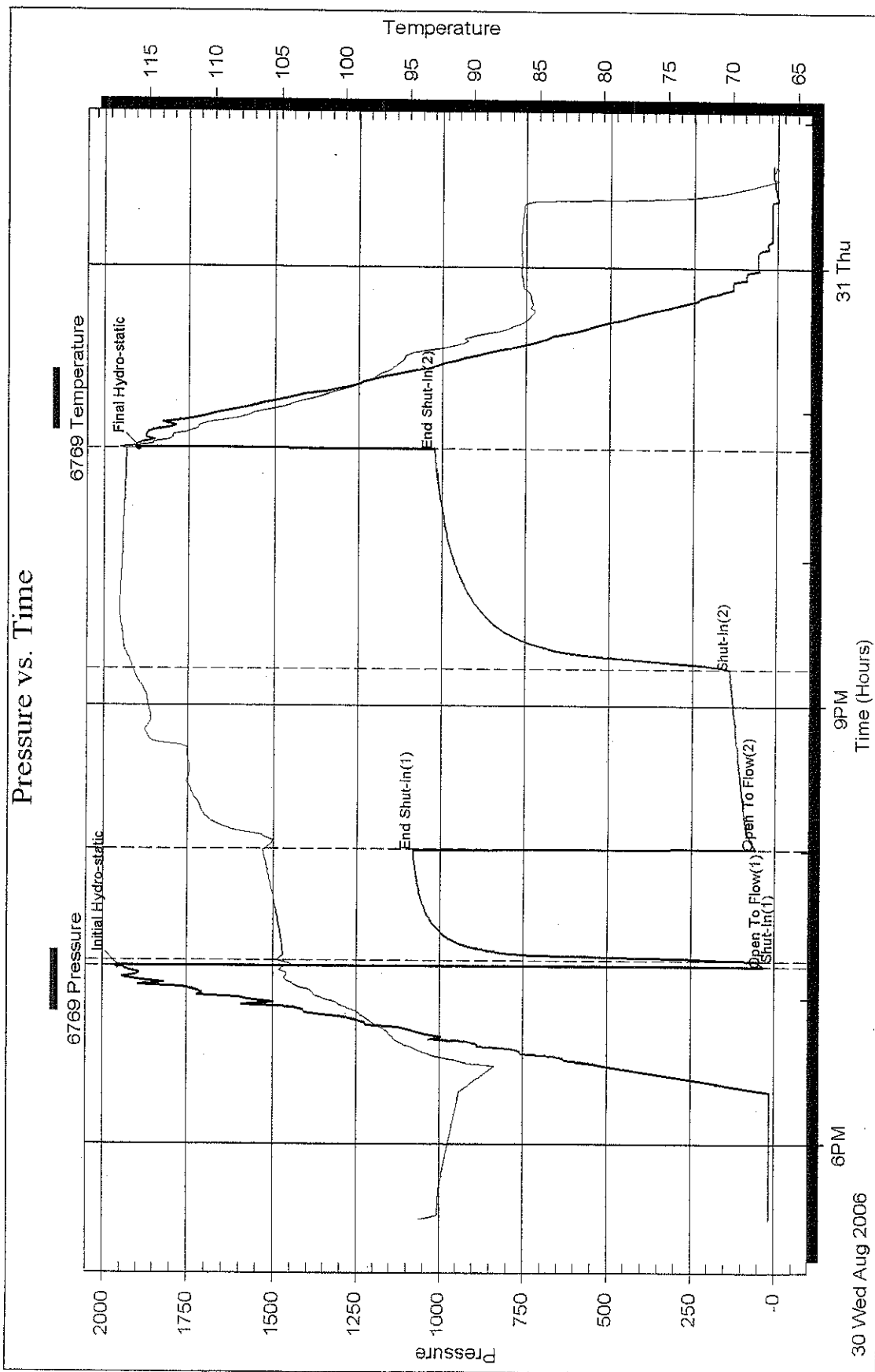
31 14S21W Trego KS

Crawford Oil

Inside

Serial #: 6769

# Pressure vs. Time



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