



DRILL STEM TEST REPORT

Prepared For: **Samuel Gary, Jr & Associates**

1515 Wynkoop st
suite 700
Denver Co 80202

ATTN: Tom Fertal

Elsie 1-13

13-16s-17w-Rush

Start Date: 2011.11.07 @ 08:49:53

End Date: 2011.11.07 @ 17:25:23

Job Ticket #: 44871 DST #: 5

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

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Samuel Gary, Jr & Associates
13-16s-17w-Rush
Elsie 1-13
DST # 5
Lansing-I-J-K
2011.11.07



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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13-16s-17w-Rush

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ATTN: Tom Fertal

Elsie 1-13

Job Ticket: 44871

DST#: 5

Test Start: 2011.11.07 @ 08:49:53

GENERAL INFORMATION:

Formation: **Lansing-I-J-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:41:23

Time Test Ended: 17:25:23

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brown

Unit No: 44

Interval: 3437.00 ft (KB) To 3472.00 ft (KB) (TVD)

Reference Elevations: 1983.00 ft (KB)

Total Depth: 3472.00 ft (KB) (TVD)

1973.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8321 Inside

Press @ Run Depth: 25.96 psig @ 3440.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.07 End Date: 2011.11.07

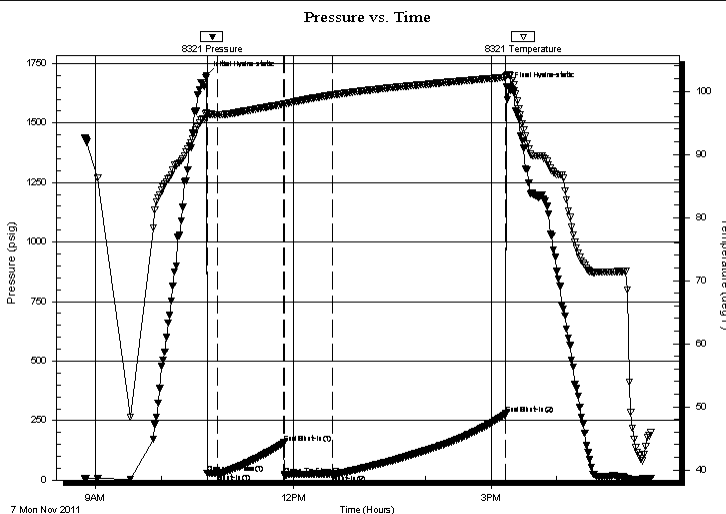
Last Calib.: 2011.11.07

Start Time: 08:49:54 End Time: 17:25:23

Time On Btm: 2011.11.07 @ 10:40:53

Time Off Btm: 2011.11.07 @ 15:14:23

TEST COMMENT: IFP-10-min-Weak blow built to 1 in
ISI-60-Min-Dead no blow back
FFP-45-Min-Fair blow built to 7 1/2 in
FSI-150-min-Ded no blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1700.32 | 96.65 | Initial Hydro-static |
| 1 | 27.31 | 96.42 | Open To Flow (1) |
| 10 | 28.32 | 96.26 | Shut-In(1) |
| 71 | 156.29 | 97.94 | End Shut-In(1) |
| 71 | 19.34 | 97.93 | Open To Flow (2) |
| 115 | 25.96 | 99.41 | Shut-In(2) |
| 273 | 278.88 | 102.22 | End Shut-In(2) |
| 274 | 1653.36 | 102.48 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------|--------------|
| 6.00 | V SOCM 3% O 97% M | 0.08 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



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DST#: 5

Test Start: 2011.11.07 @ 08:49:53

GENERAL INFORMATION:

Formation: **Lansing-I-J-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:41:23

Time Test Ended: 17:25:23

Interval: 3437.00 ft (KB) To 3472.00 ft (KB) (TVD)

Total Depth: 3472.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brown

Unit No: 44

Reference Elevations: 1983.00 ft (KB)

1973.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8679

Fluid

Press @ RunDepth: psig @ 3403.00 ft (KB)

Start Date: 2011.11.07

End Date:

2011.11.07

Start Time: 08:49:37

End Time:

17:23:36

Capacity: 8000.00 psig

Last Calib.:

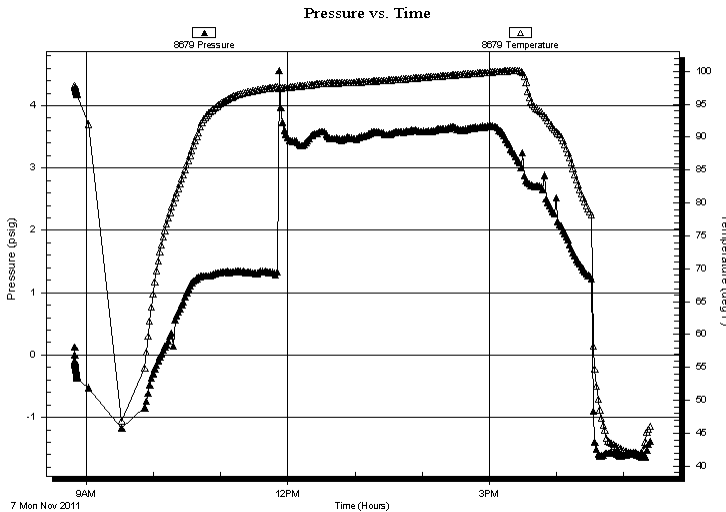
2011.11.07

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-10-min-Weak blow built to 1 in
ISI-60-Min-Dead no blow back
FFP-45-Min-Fair blow built to 7 1/2 in
FSI-150-min-Ded no blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
|-------------|-----------------|--------------|------------|

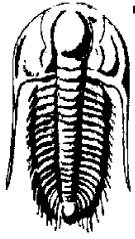
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------|--------------|
| 6.00 | V SOCM 3% O 97% M | 0.08 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



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Job Ticket: 44871

DST#: 5

Test Start: 2011.11.07 @ 08:49:53

GENERAL INFORMATION:

Formation: **Lansing-I-J-K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:41:23

Time Test Ended: 17:25:23

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brown

Unit No: 44

Interval: **3437.00 ft (KB) To 3472.00 ft (KB) (TVD)**

Reference Elevations: 1983.00 ft (KB)

Total Depth: 3472.00 ft (KB) (TVD)

1973.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8737 Outside

Press @ Run Depth: psig @ 3440.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.11.07

End Date: 2011.11.07

Last Calib.: 2011.11.07

Start Time: 08:49:21

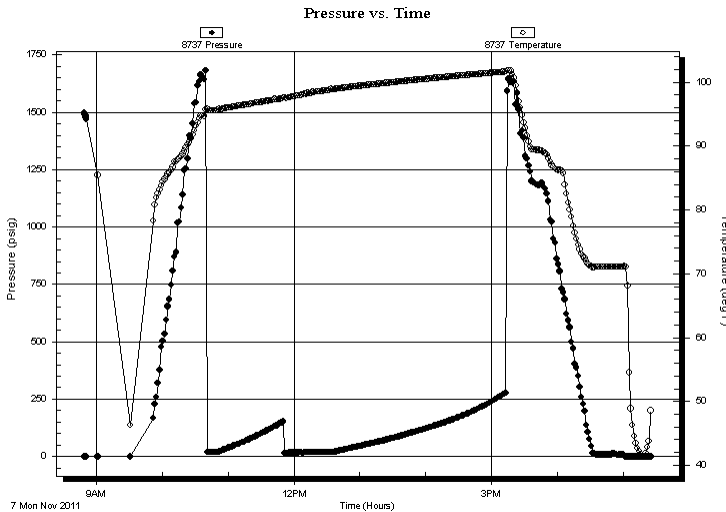
End Time: 17:24:50

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-10-min-Weak blow built to 1 in
ISI-60-Min-Dead no blow back
FFP-45-Min-Fair blow built to 7 1/2 in
FSI-150-min-Ded no blow back

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
| | | | |
| | | | |
| | | | |
| | | | |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------------|--------------|
| 6.00 | V SOCM 3% O 97% M | 0.08 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Samuel Gary, Jr & Associates

13-16s-17w-Rush

1515 Wynkoop st
suite 700
Denver Co 80202
ATTN: Tom Fertal

Elsie 1-13

Job Ticket: 44871

DST#: 5

Test Start: 2011.11.07 @ 08:49:53

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3415.00 ft | Diameter: 3.80 inches | Volume: 47.90 bbl | Tool Weight: 2200.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 2.70 inches | Volume: 0.00 bbl | Weight set on Packer: 22000.00 lb |
| Drill Collar: | Length: 0.00 ft | Diameter: 2.25 inches | Volume: 0.00 bbl | Weight to Pull Loose: 69000.00 lb |
| | | | <u>Total Volume: 47.90 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 12.00 ft | | | String Weight: Initial 50000.00 lb |
| Depth to Top Packer: | 3437.00 ft | | | Final 51000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 35.00 ft | | | |
| Tool Length: | 69.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Recorder | 0.00 | 8679 | Fluid | 3403.00 | |
| Stubb | 5.00 | | | 3408.00 | |
| Shut In Tool | 5.00 | | | 3413.00 | |
| Sampler | 2.00 | | | 3415.00 | |
| Hydraulic tool | 5.00 | | | 3420.00 | |
| Jars | 5.00 | | | 3425.00 | |
| Safety Joint | 3.00 | | | 3428.00 | |
| Packer | 4.00 | | | 3432.00 | 34.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 3437.00 | |
| Stubb | 1.00 | | | 3438.00 | |
| Perforations | 2.00 | | | 3440.00 | |
| Recorder | 0.00 | 8321 | Inside | 3440.00 | |
| Recorder | 0.00 | 8737 | Outside | 3440.00 | |
| Perforations | 29.00 | | | 3469.00 | |
| Bullnose | 3.00 | | | 3472.00 | 35.00 Bottom Packers & Anchor |

Total Tool Length: 69.00



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FLUID SUMMARY

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DST#: 5

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Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 53.00 sec/qt

Water Loss: 7.40 cm³

Resistivity: ohm.m

Salinity: 3500.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------|---------------|
| 6.00 | VSOCM 3%O97%M | 0.084 |

Total Length: 6.00 ft Total Volume: 0.084 bbl

Num Fluid Samples: 0

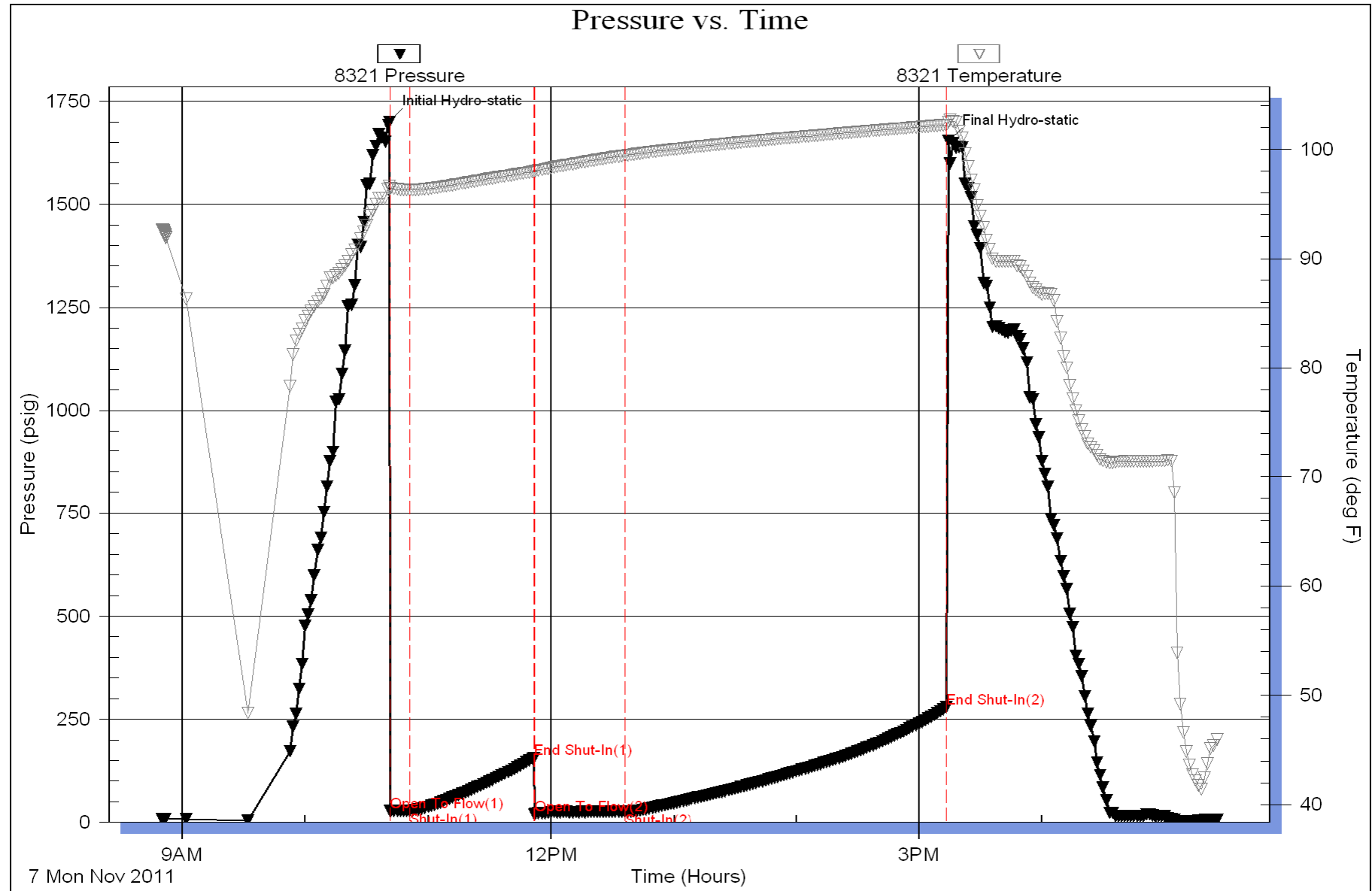
Num Gas Bombs: 0

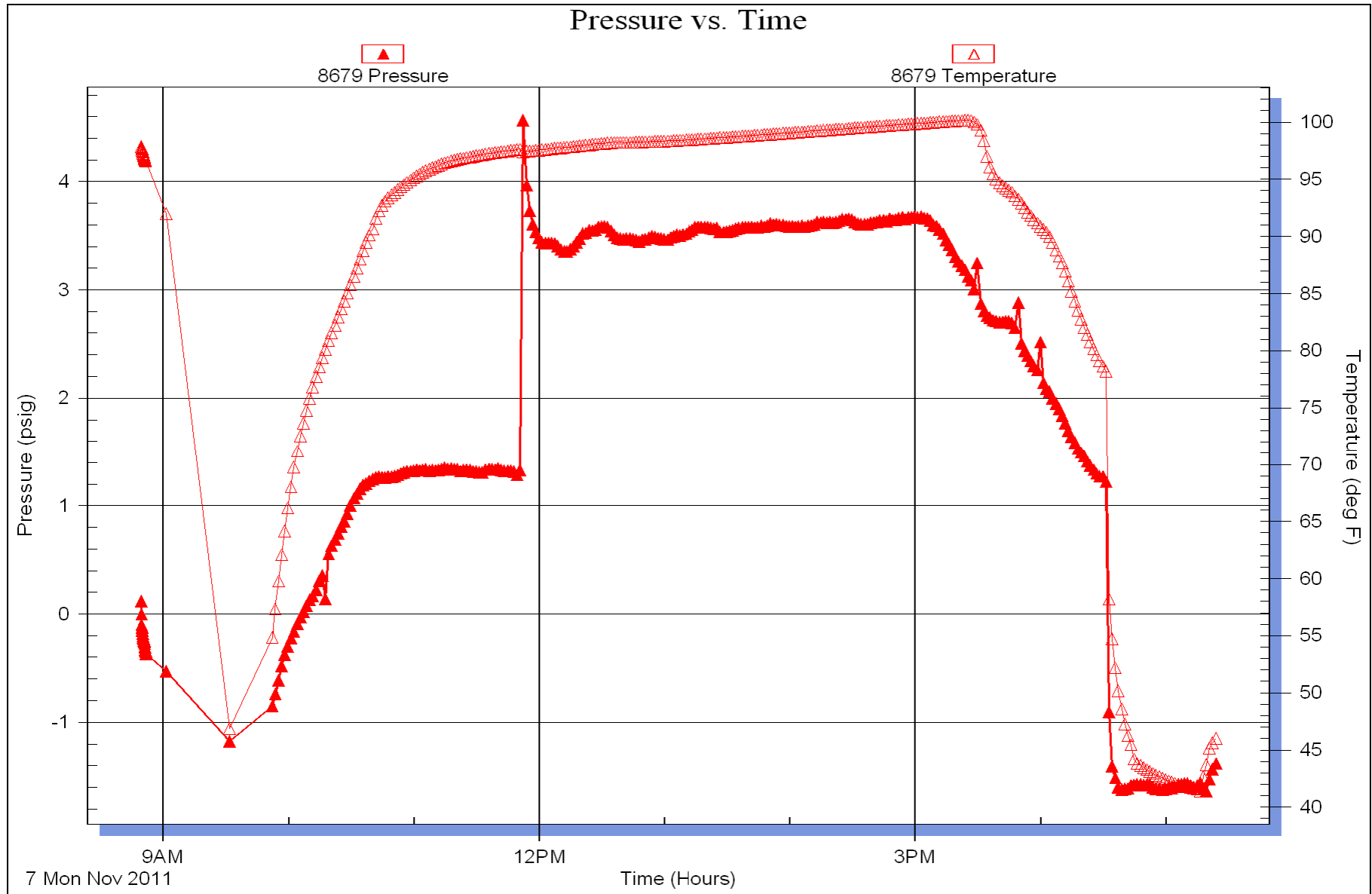
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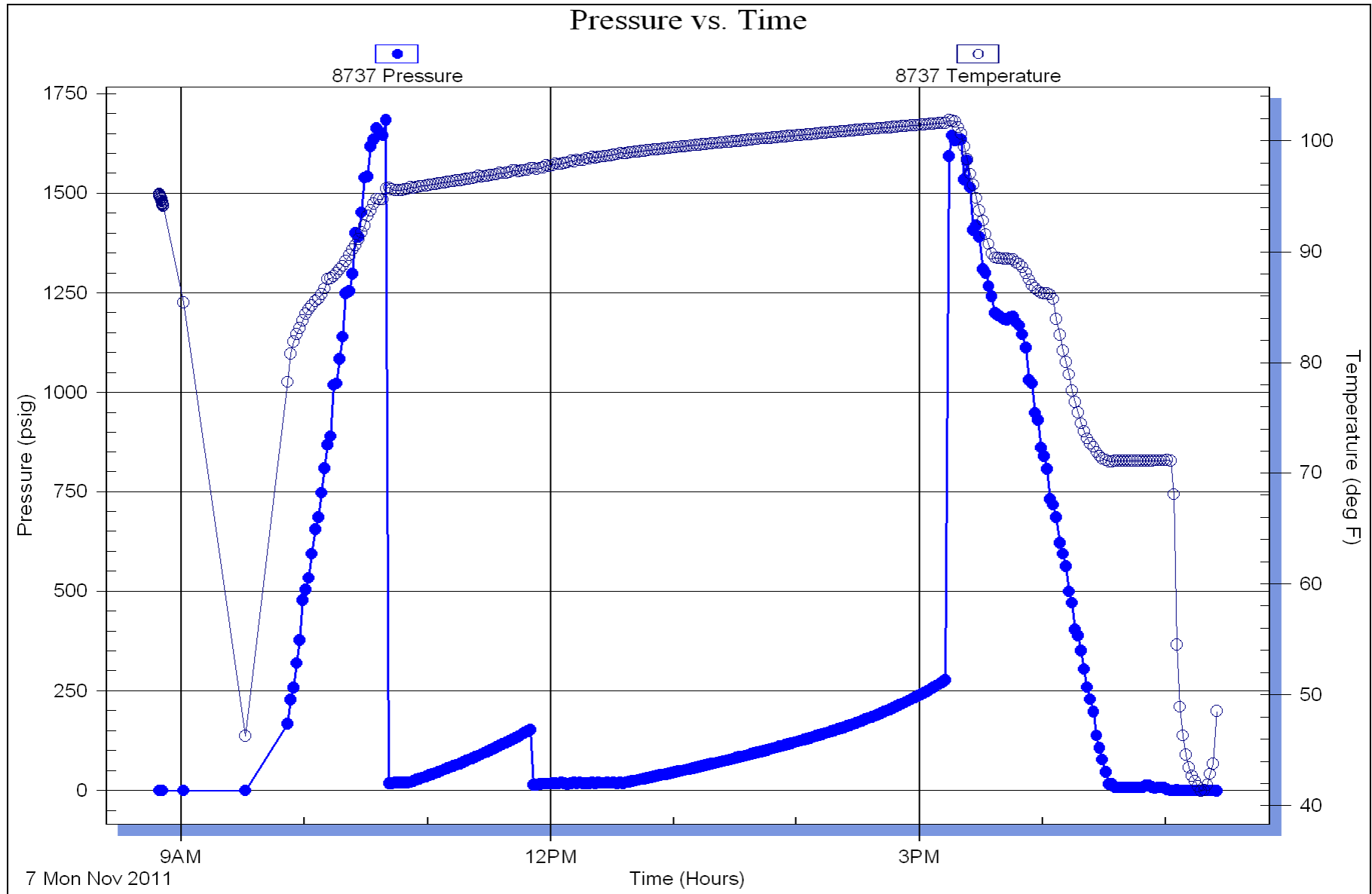
Laboratory Name:

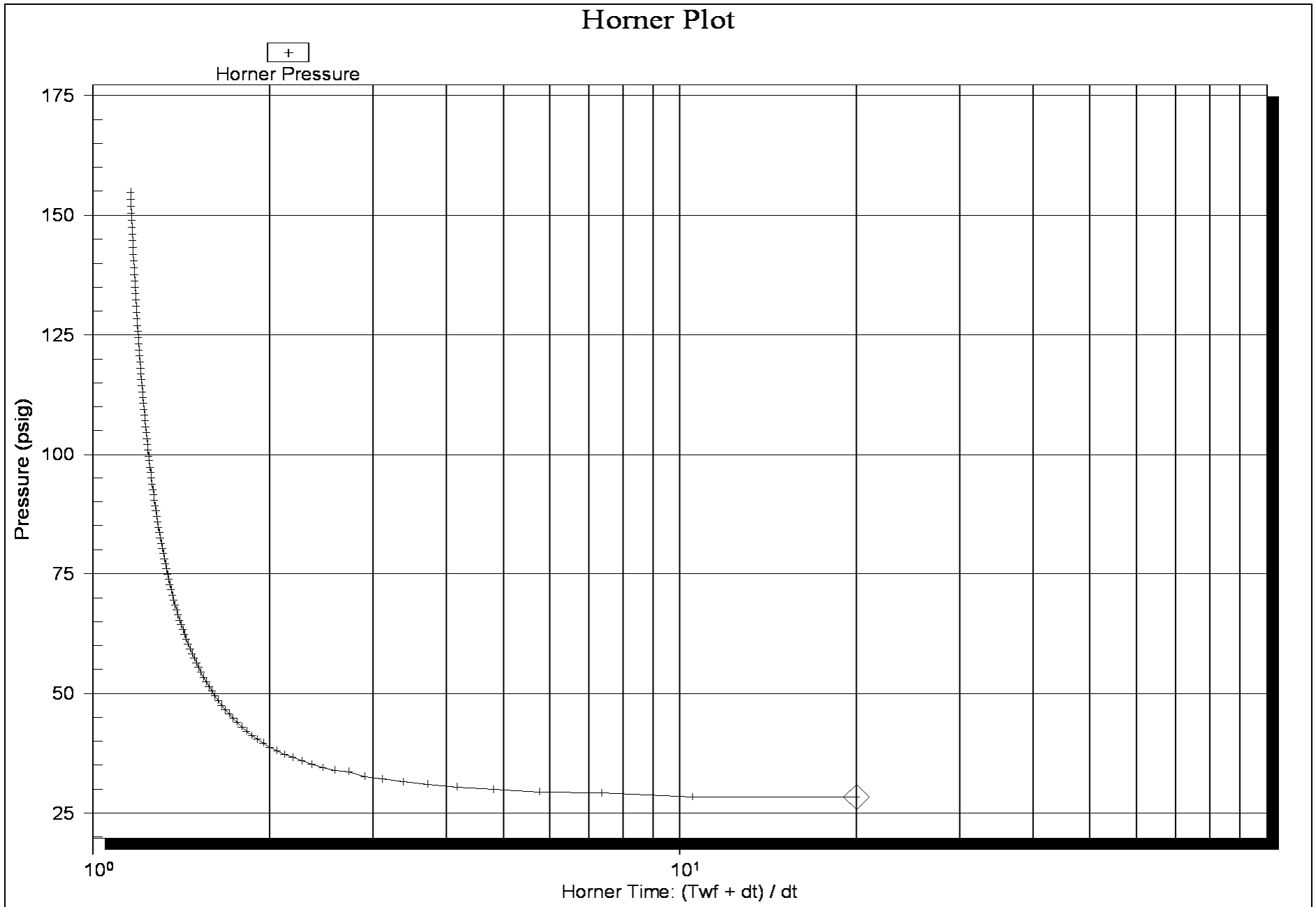
Laboratory Location:

Recovery Comments: 2000 MI Of fluid 110 PSI 300 MI of Oil 1700 ML of Mud HOCM 30%O70%M









Horner Plot

