

## DRILL STEM TEST REPORT

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

1515 Wynkoop ste 700  
Denver Co 80202

ATTN: Clayton Camozzi

**36-15s-16w Ellis**

**Boxberger 3-36**

Start Date: 2011.03.01 @ 14:22:54

End Date: 2011.03.01 @ 22:24:24

Job Ticket #: 042854                      DST #: 4

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



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TESTING, INC**

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Job Ticket: 042854

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ATTN: Clayton Camozzi

Test Start: 2011.03.01 @ 14:22:54

## GENERAL INFORMATION:

Formation: **LKC-I-J-K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:08:24

Time Test Ended: 22:24:24

Test Type: Conventional Bottom Hole

Tester: Jeff Brown

Unit No: 44

**Interval: 3367.00 ft (KB) To 3420.00 ft (KB) (TVD)**

Reference Elevations: 1943.00 ft (KB)

Total Depth: 3420.00 ft (KB) (TVD)

1935.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6672 Inside**

Press @ Run Depth: 226.18 psig @ 3403.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.03.01 End Date: 2011.03.01

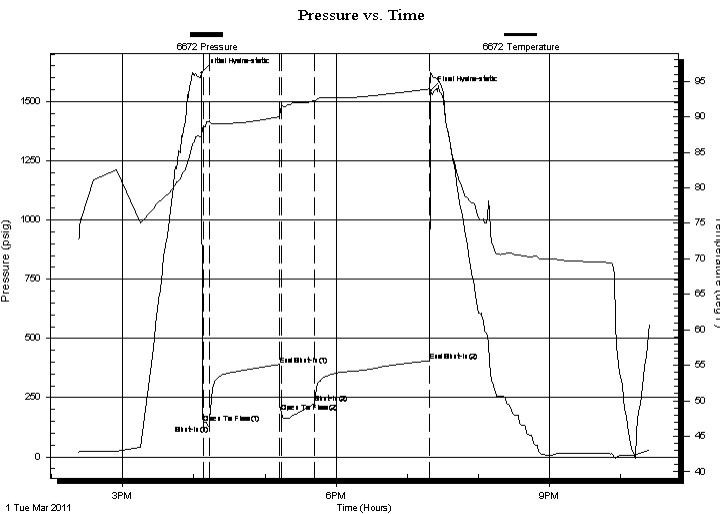
Last Calib.: 2011.03.01

Start Time: 14:22:55 End Time: 22:24:24

Time On Btm: 2011.03.01 @ 16:06:24

Time Off Btm: 2011.03.01 @ 19:19:54

**TEST COMMENT:** IFP-5 min-Strong blow BOB in 5 min  
ISI-60 min-Fair blow back built to 4 in died back to 3 1/2 in  
FFP-30 min-Stron blow BOB in 30 sec Gas to surface in 10 min  
FSI-90 min-Strong blow back BOB in 30 s



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1621.34	87.38	Initial Hydro-static
2	143.71	88.54	Open To Flow (1)
7	132.33	89.50	Shut-In(1)
66	389.39	90.01	End Shut-In(1)
67	187.06	91.50	Open To Flow (2)
96	226.18	92.28	Shut-In(2)
192	405.50	93.89	End Shut-In(2)
194	1545.76	96.25	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
63.00	HOCGWM 12%M3%W40%G45%O	0.60
252.00	HOCGM 10%M40%G50%O	3.53
220.00	MCGO 5%M45%G50%O	3.09
0.00	2824 GIP	0.00

## Gas Rates

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



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Tester: Jeff Brown

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Reference Elevations: 1943.00 ft (KB)

Total Depth: 3420.00 ft (KB) (TVD)

1935.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8679 Fluid**

Press @ Run Depth: psig @ 3333.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.03.01 End Date: 2011.03.01

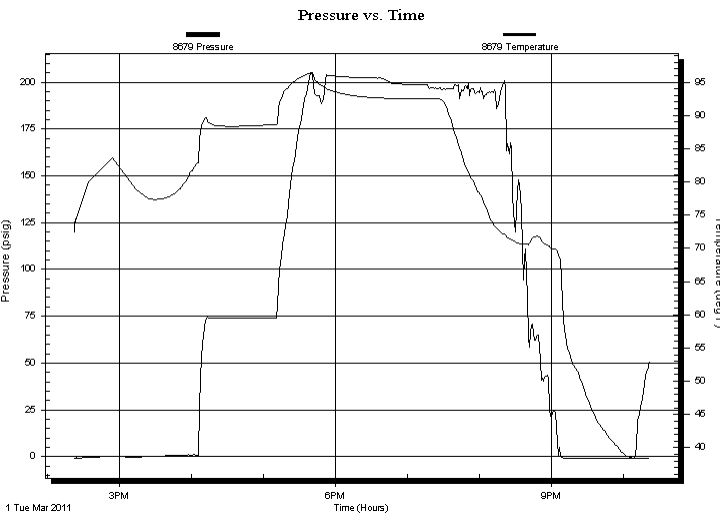
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Start Time: 14:22:01 End Time: 22:21:30

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IFP-5 min-Strong blow BOB in 5 min  
ISI-60 min-Fair blow back built to 4 in died back to 3 1/2 in  
FFP-30 min-Stron blow BOB in 30 sec Gas to surface in 10 min  
FSI-90 min-Strong blow back BOB in 30 s



## PRESSURE SUMMARY

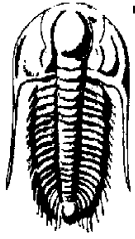
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
63.00	HOCGWM 12%M3%W40%G45%O	0.60
252.00	HOCGM 10%M40%G50%O	3.53
220.00	MCGO 5%M45%G50%O	3.09
0.00	2824 GIP	0.00

## Gas Rates

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



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Reference Elevations: 1943.00 ft (KB)

Total Depth: 3420.00 ft (KB) (TVD)

1935.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8321 Outside**

Press @ Run Depth: psig @ 3403.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.03.01 End Date: 2011.03.01

Last Calib.: 2011.03.01

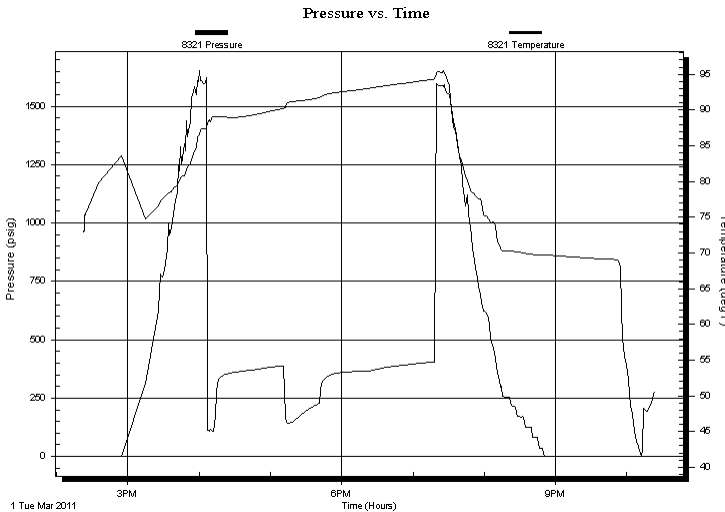
Start Time: 14:22:55 End Time: 22:23:54

Time On Btm:

Time Off Btm:

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ISI-60 min-Fair blow back built to 4 in died back to 3 1/2 in  
FFP-30 min-Stron blow BOB in 30 sec Gas to surface in 10 min  
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### PRESSURE SUMMARY



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

### Recovery

### Gas Rates

Length (ft)	Description	Volume (bbl)
63.00	HOCGWM 12%M3%W40%G45%O	0.60
252.00	HOCGM 10%M40%G50%O	3.53
220.00	MCGO 5%M45%G50%O	3.09
0.00	2824 GIP	0.00

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



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Samuel Gary & Associates, INC

**Boxberger 3-36**

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Denver Co 80202

**36-15s-16w Ellis**

Job Ticket: 042854

**DST#: 4**

ATTN: Clayton Camozzi

Test Start: 2011.03.01 @ 14:22:54

## Tool Information

Drill Pipe:	Length: 3328.00 ft	Diameter: 3.80 inches	Volume: 46.68 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 46.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3367.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	88.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3333.00	
Recorder	0.00	8679	Fluid	3333.00	
Drill Pipe	5.00			3338.00	
Shut In Tool	5.00			3343.00	
Sampler	2.00			3345.00	
Hydraulic tool	5.00			3350.00	
Jars	5.00			3355.00	
Safety Joint	3.00			3358.00	
Packer	4.00			3362.00	35.00 Bottom Of Top Packer
Packer	5.00			3367.00	
Stubb	1.00			3368.00	
Perforations	2.00			3370.00	
Change Over Sub	1.00			3371.00	
Drill Pipe	31.00			3402.00	
Change Over Sub	1.00			3403.00	
Recorder	0.00	6672	Inside	3403.00	
Recorder	0.00	8321	Outside	3403.00	
Perforations	14.00			3417.00	
Bullnose	3.00			3420.00	53.00 Bottom Packers & Anchor

**Total Tool Length: 88.00**



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**FLUID SUMMARY**

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**36-15s-16w Ellis**

Job Ticket: 042854

**DST#: 4**

ATTN: Clayton Camozzi

Test Start: 2011.03.01 @ 14:22:54

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
63.00	HOCGWM 12%M3%W40%G45%O	0.601
252.00	HOCGM 10%M40%G50%O	3.535
220.00	MCGO 5%M45%G50%O	3.086
0.00	2824 GIP	0.000

Total Length: 535.00 ft      Total Volume: 7.222 bbl

Num Fluid Samples: 0

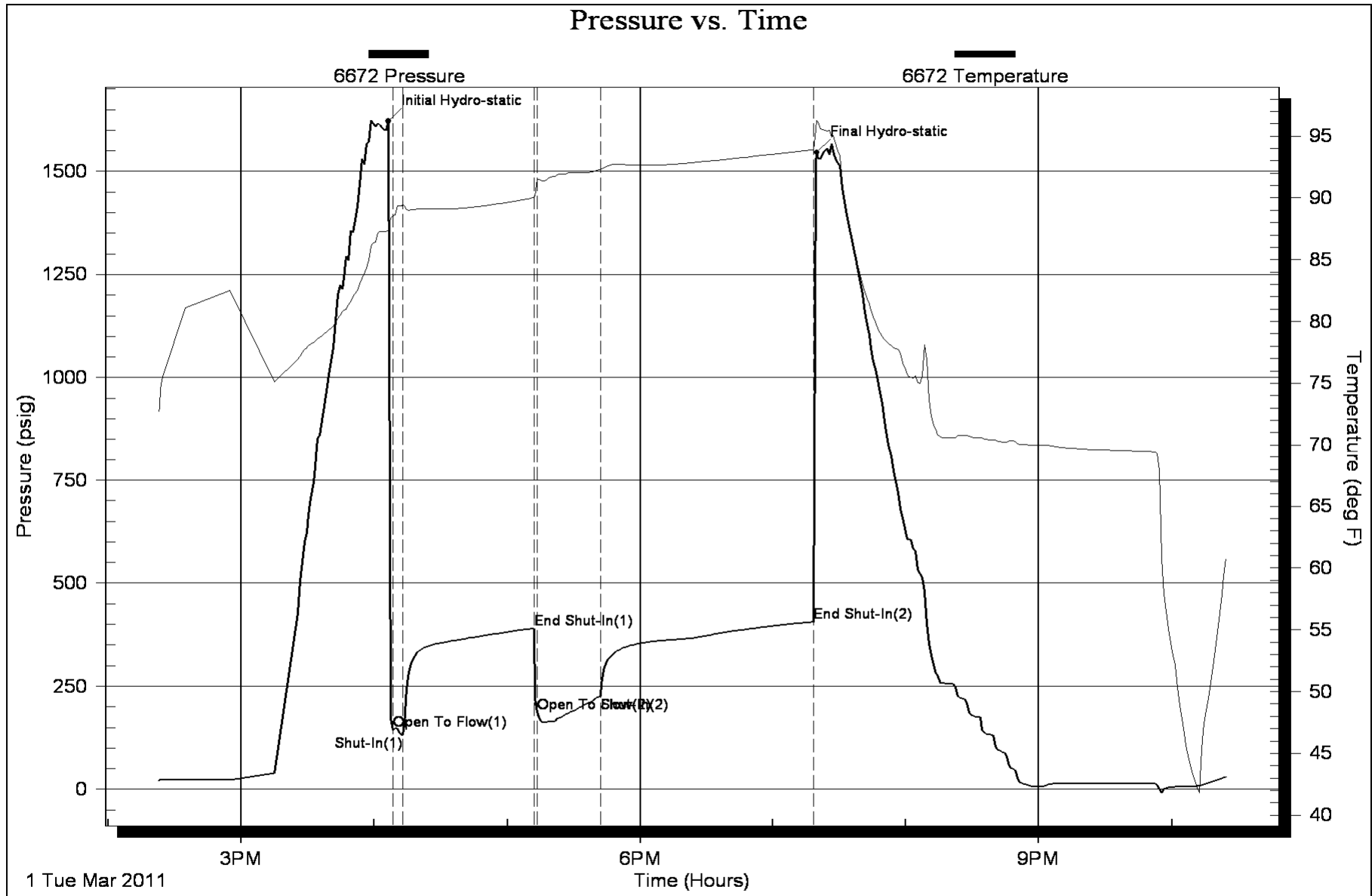
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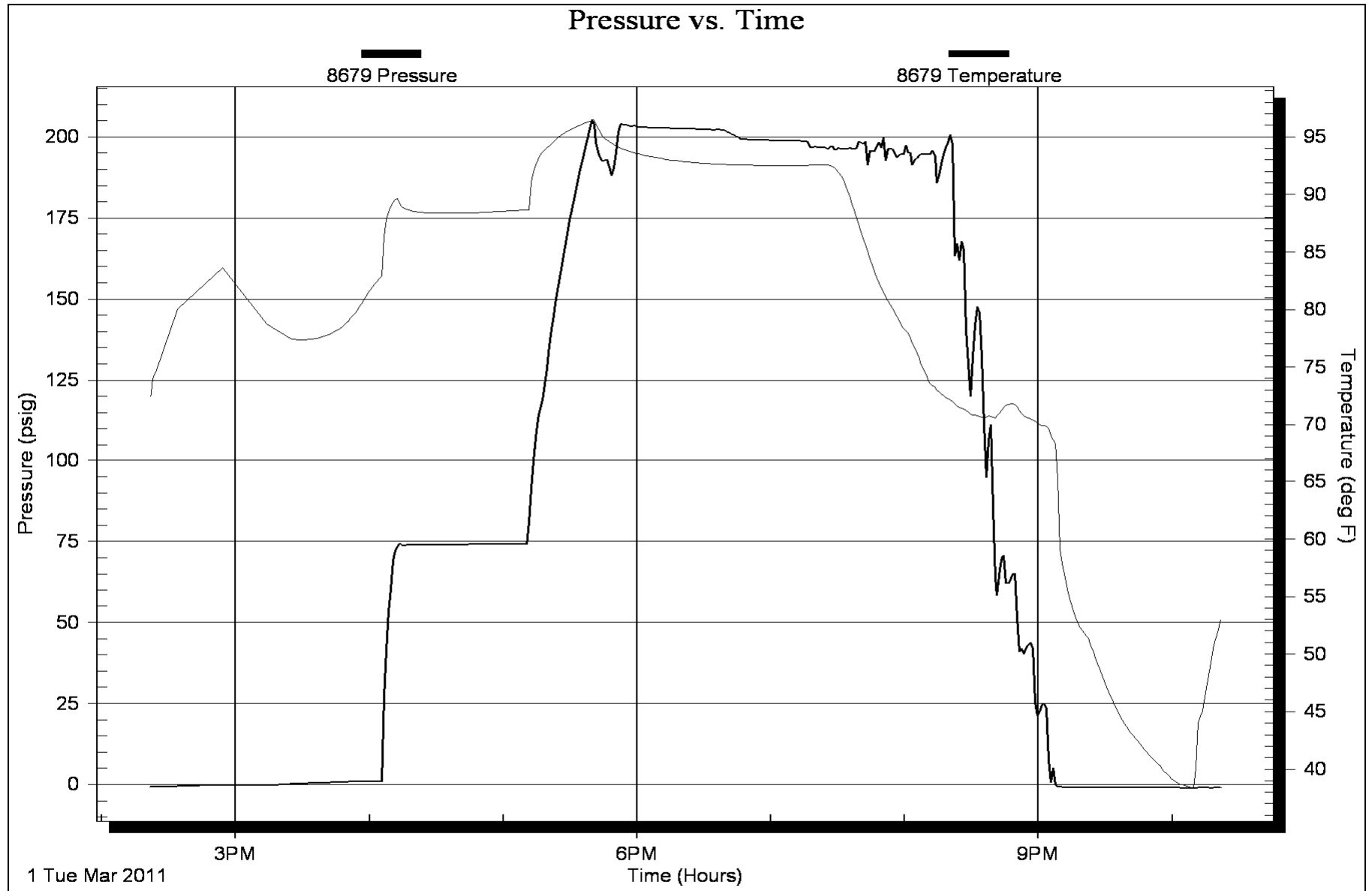
Serial #:

Laboratory Name:

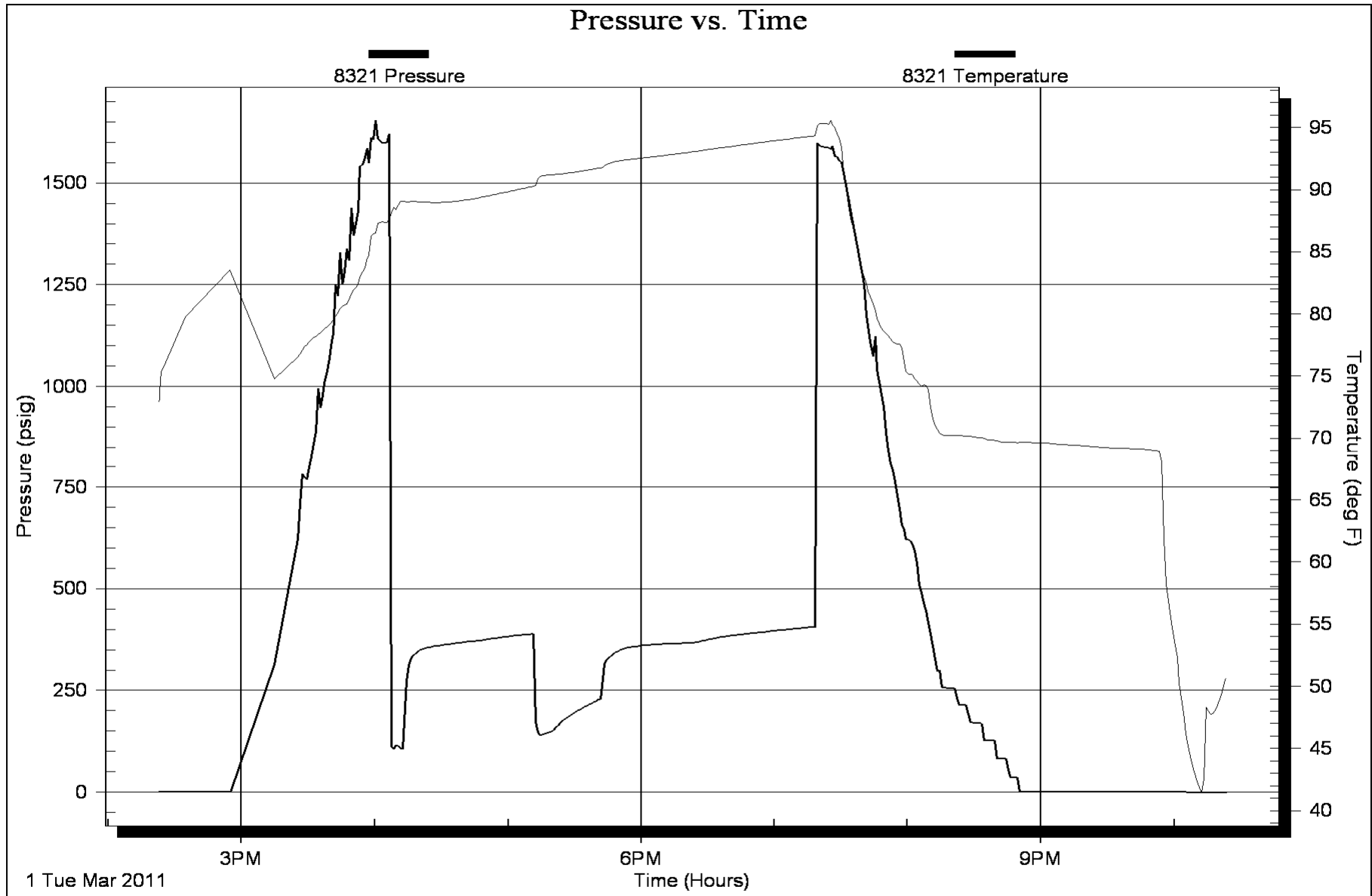
Laboratory Location:

Recovery Comments: 500ML Total Fluid-350 PSI- 1 3/4 QF of gas 500 ML of oil

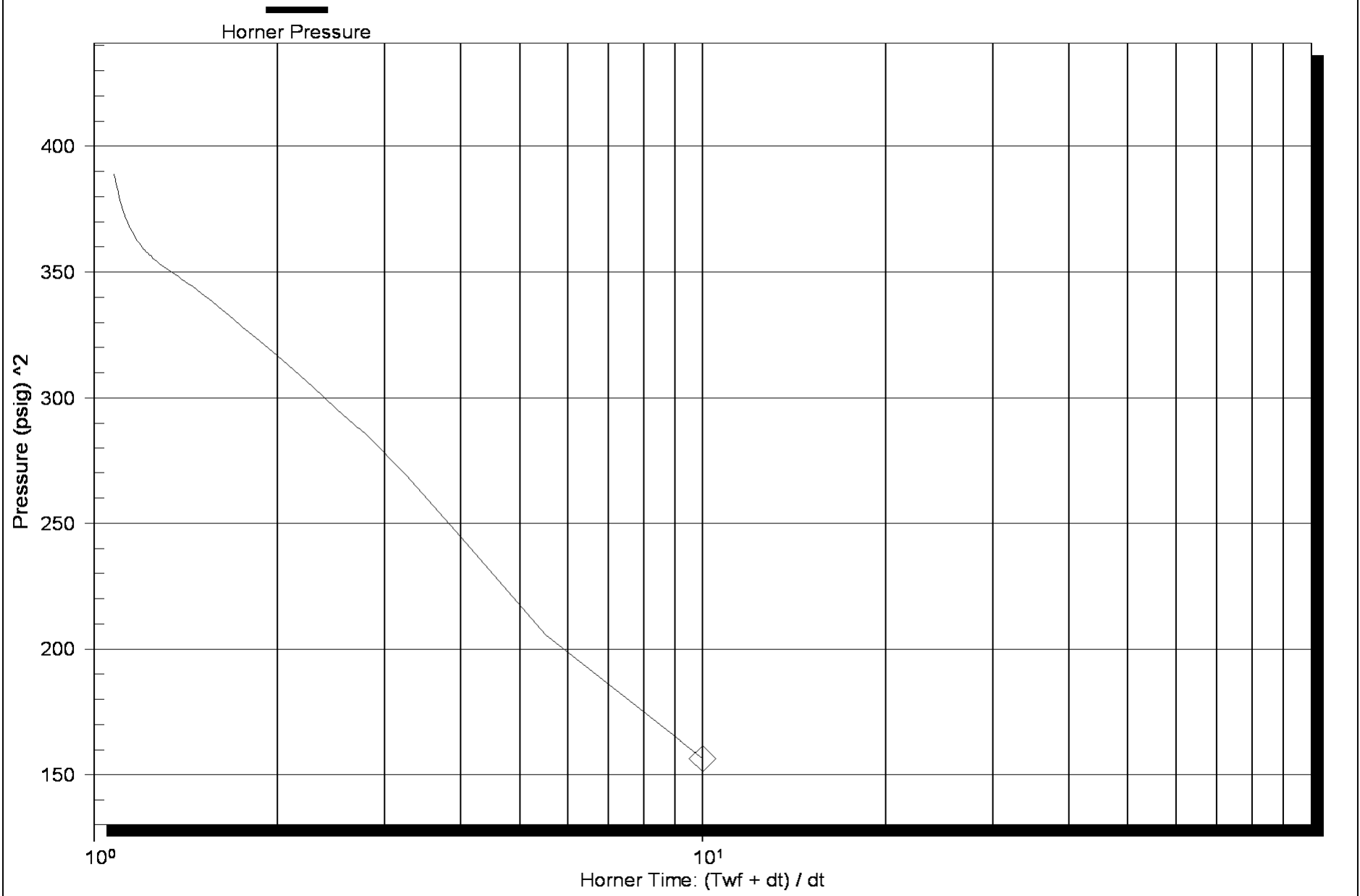




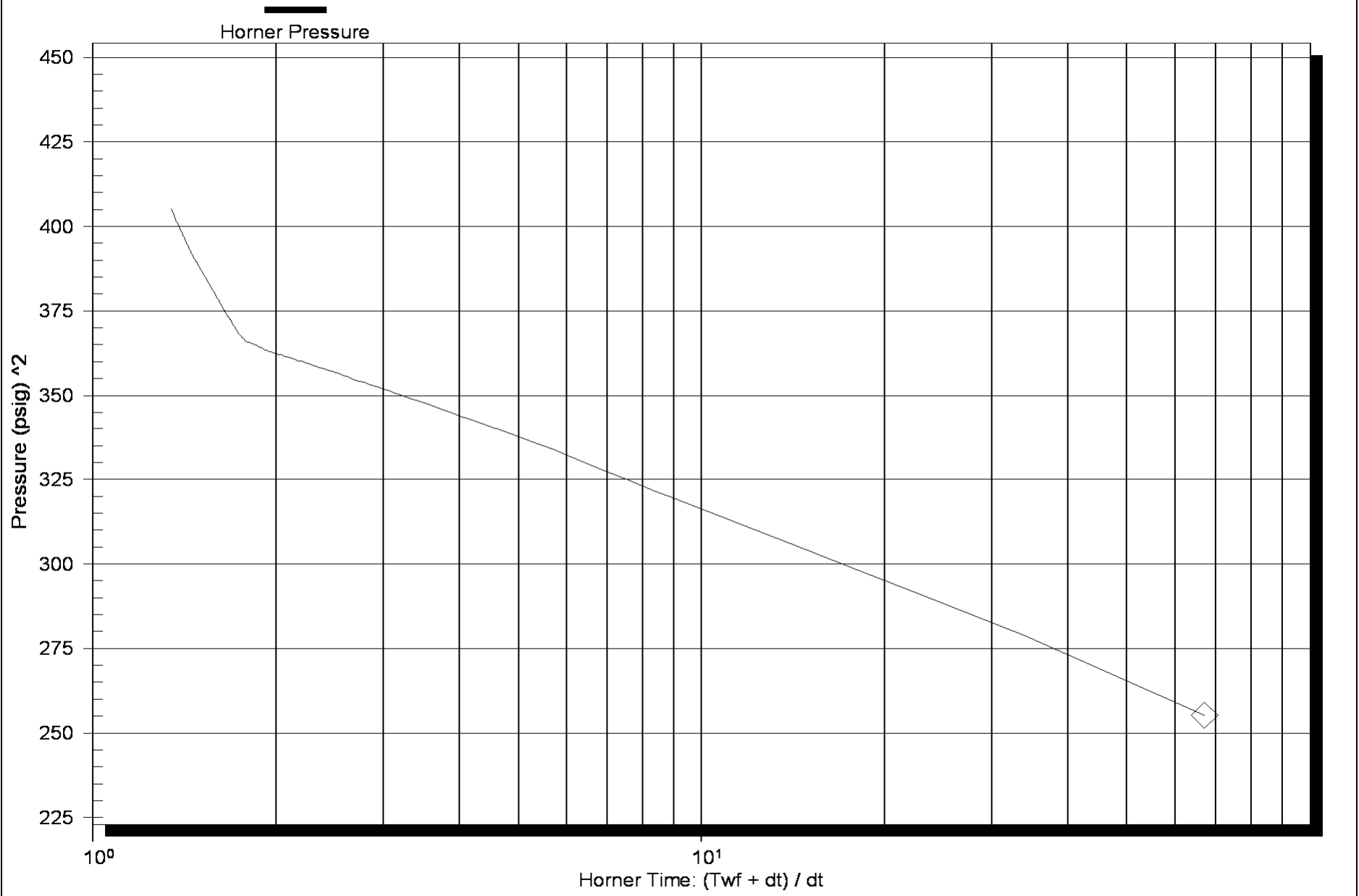




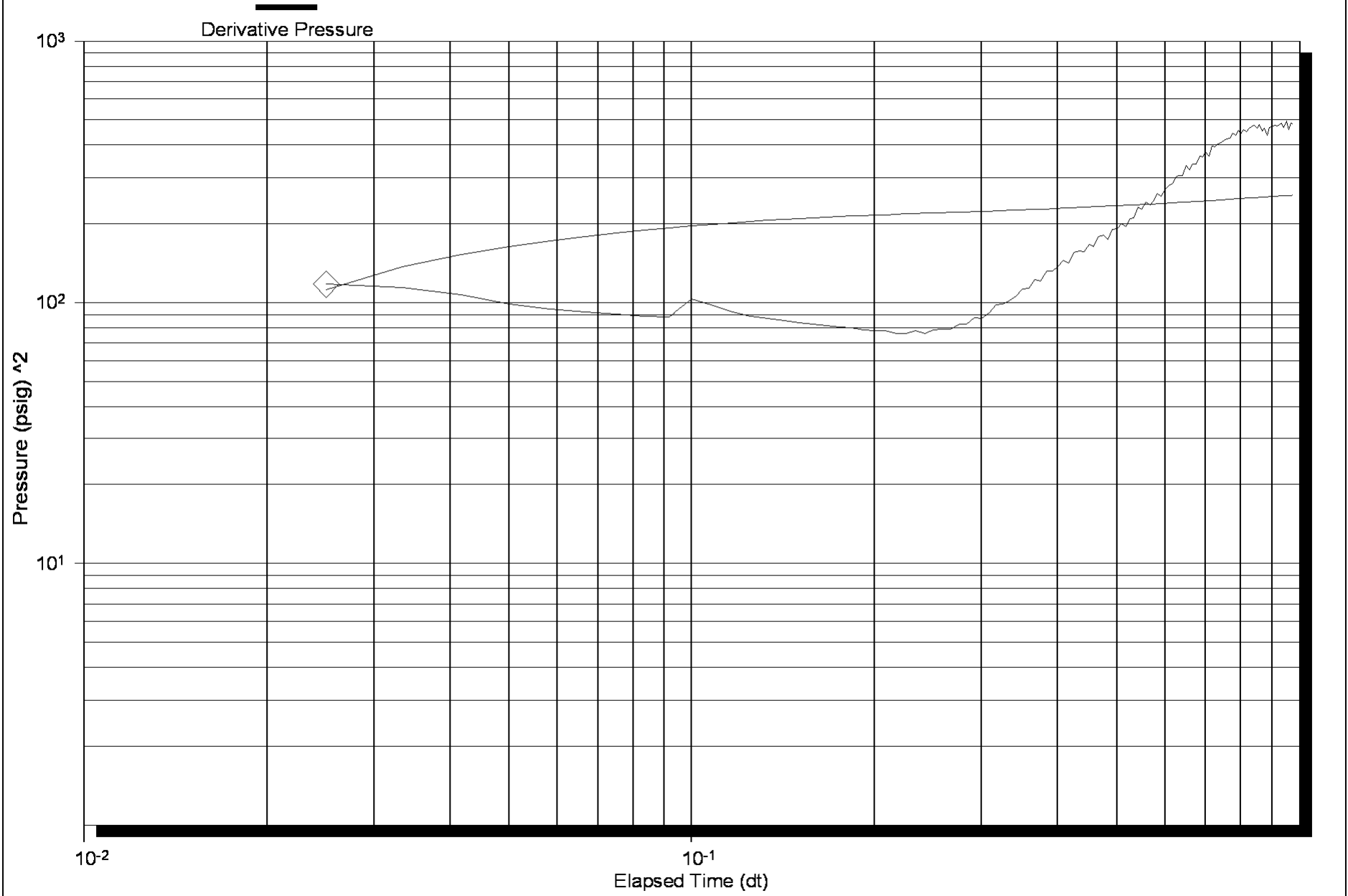
### Horner Plot



# Horner Plot



### Log-Log and Pseudo-Derivative



### Log-Log and Pseudo-Derivative

