

## DRILL STEM TEST REPORT

Prepared For: **Sam Gary Jr. & assoc. inc.**

1515 Wynkoop, Ste 700  
Denver Co. 80202

ATTN: Tom Fertal

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

**Boxberger #2-36**

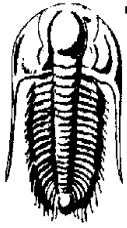
Start Date: 2010.07.21 @ 05:25:01

End Date: 2010.07.21 @ 13:16:30

Job Ticket #: 039888      DST #: 1

Trilobite Testing, Inc

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



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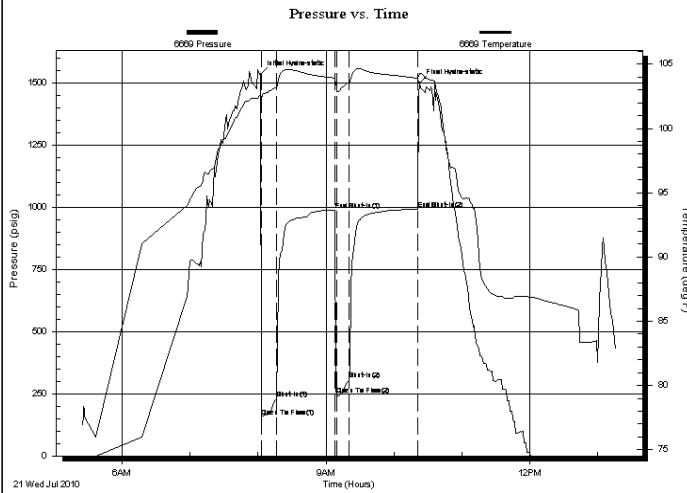
**Boxberger #2-36**  
**36-15s-16w Ellis**  
 Job Ticket: 039888 **DST#: 1**  
 Test Start: 2010.07.21 @ 05:25:01

## GENERAL INFORMATION:

Formation: **LKC**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:03:15  
 Time Test Ended: 13:16:30  
 Test Type: Conventional Bottom Hole  
 Tester: Andy Carreira  
 Unit No: 53  
 Interval: **3173.00 ft (KB) To 3233.00 ft (KB) (TVD)**  
 Total Depth: 3233.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Reference Elevations: 1930.00 ft (KB)  
 1922.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 6669 Outside**  
 Press@RunDepth: 308.17 psig @ 3174.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2010.07.21 End Date: 2010.07.21 Last Calib.: 2010.07.21  
 Start Time: 05:25:01 End Time: 13:16:30 Time On Btm: 2010.07.21 @ 08:02:15  
 Time Off Btm: 2010.07.21 @ 10:22:30

TEST COMMENT: IF: BOB, 1 min.  
 IS: Gas to surface while bleeding thru 2 inch  
 FF: BOB, 20 sec, Gas to surface, TSTM.  
 FS: BOB, 20 sec. decreasing to 10 inch in bucket, gas



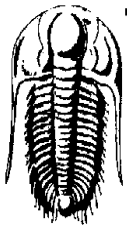
PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1533.63	102.57	Initial Hydro-static
1	156.18	102.30	Open To Flow (1)
14	228.87	103.20	Shut-In(1)
66	989.43	103.91	End Shut-In(1)
67	247.54	103.21	Open To Flow (2)
79	308.17	103.60	Shut-In(2)
139	992.93	103.92	End Shut-In(2)
141	1500.48	104.22	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	MO 20%=m 80%=o	0.84
652.00	GO 10%=g 90%=o	9.15

## Gas Rates

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



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Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:03:15

Time Test Ended: 13:16:30

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 53

**Interval: 3173.00 ft (KB) To 3233.00 ft (KB) (TVD)**

Reference Elevations: 1930.00 ft (KB)

Total Depth: 3233.00 ft (KB) (TVD)

1922.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 6668 Inside**

Press@RunDepth: psig @ 3174.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.07.21

End Date:

2010.07.21

Last Calib.:

2010.07.21

Start Time: 05:25:01

End Time:

13:16:15

Time On Btm:

Time Off Btm:

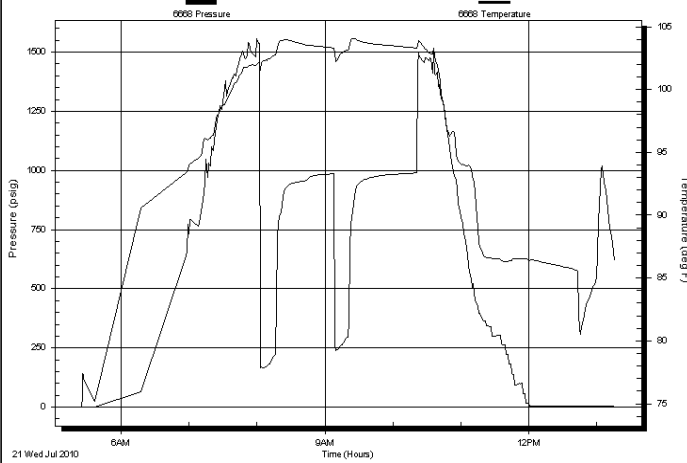
TEST COMMENT: IF: BOB, 1 min.

IS: Gas to surface while bleeding thru 2 inch

FF: BOB, 20 sec, Gas to surface, TSTM.

FS: BOB, 20 sec. decreasing to 10 inch in bucket, gas

Pressure vs. Time



## PRESSURE SUMMARY

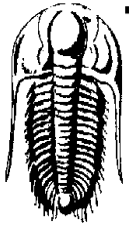
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	MO 20%=m 80%=o	0.84
652.00	GO 10%=g 90%=o	9.15

## Gas Rates

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



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## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Sam Gary Jr. & assoc. inc.

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

Job Ticket: 039888

**DST#: 1**

ATTN: Tom Fertal

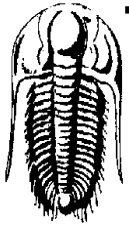
Test Start: 2010.07.21 @ 05:25:01

### Tool Information

Drill Pipe:	Length: 3165.00 ft	Diameter: 3.80 inches	Volume: 44.40 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 59000.00 lb
			<u>Total Volume: 44.40 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3173.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	88.00 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			3146.00	
Shut In Tool	5.00			3151.00	
Hydraulic tool	5.00			3156.00	
Jars	5.00			3161.00	
Safety Joint	3.00			3164.00	
Packer	5.00			3169.00	28.00 Bottom Of Top Packer
Packer	4.00			3173.00	
Stubb	1.00			3174.00	
Recorder	0.00	6668	Inside	3174.00	
Recorder	0.00	6669	Outside	3174.00	
Perforations	3.00			3177.00	
Change Over Sub	1.00			3178.00	
Drill Pipe	31.00			3209.00	
Change Over Sub	1.00			3210.00	
Perforations	20.00			3230.00	
Bullnose	3.00			3233.00	60.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>88.00</b>				



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

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Job Ticket: 039888

**DST#: 1**

ATTN: Tom Fertal

Test Start: 2010.07.21 @ 05:25:01

## 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: 9.18 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3700.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	MO 20%=m 80%=o	0.842
652.00	GO 10%=g 90%=o	9.146

Total Length: 712.00 ft      Total Volume: 9.988 bbl

Num Fluid Samples: 0

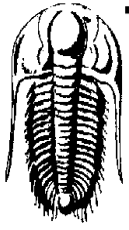
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



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**GAS RATES**

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Test Start: 2010.07.21 @ 05:25:01

## Gas Rates Information

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

Gas Rates Table

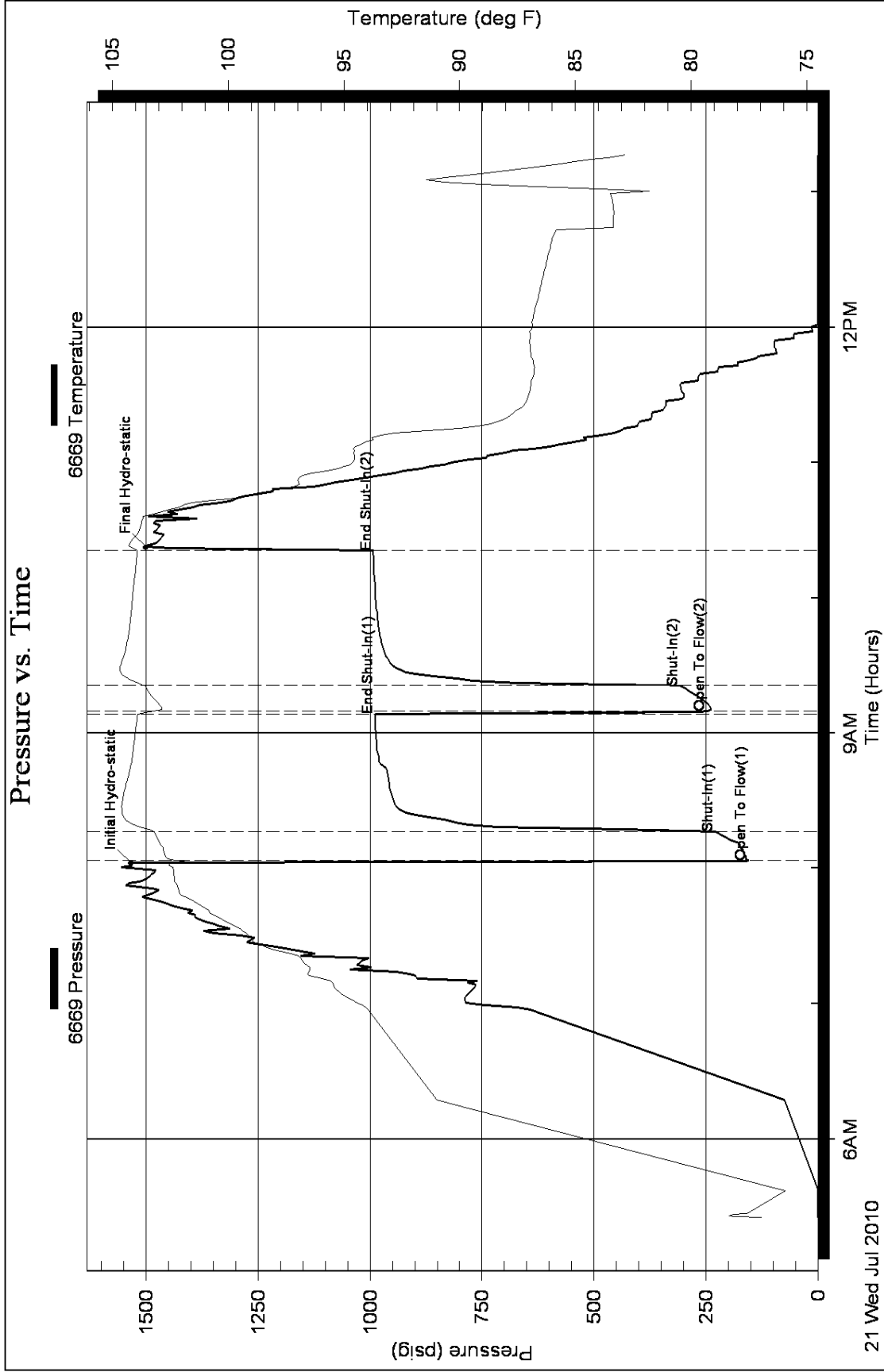
Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m <sup>3</sup> /d)
		0.00	0.00	0.00

Serial #: 6669

Outside Sam Gary Jr. & assoc. inc.

36-15s-16w Ellis

DST Test Number: 1



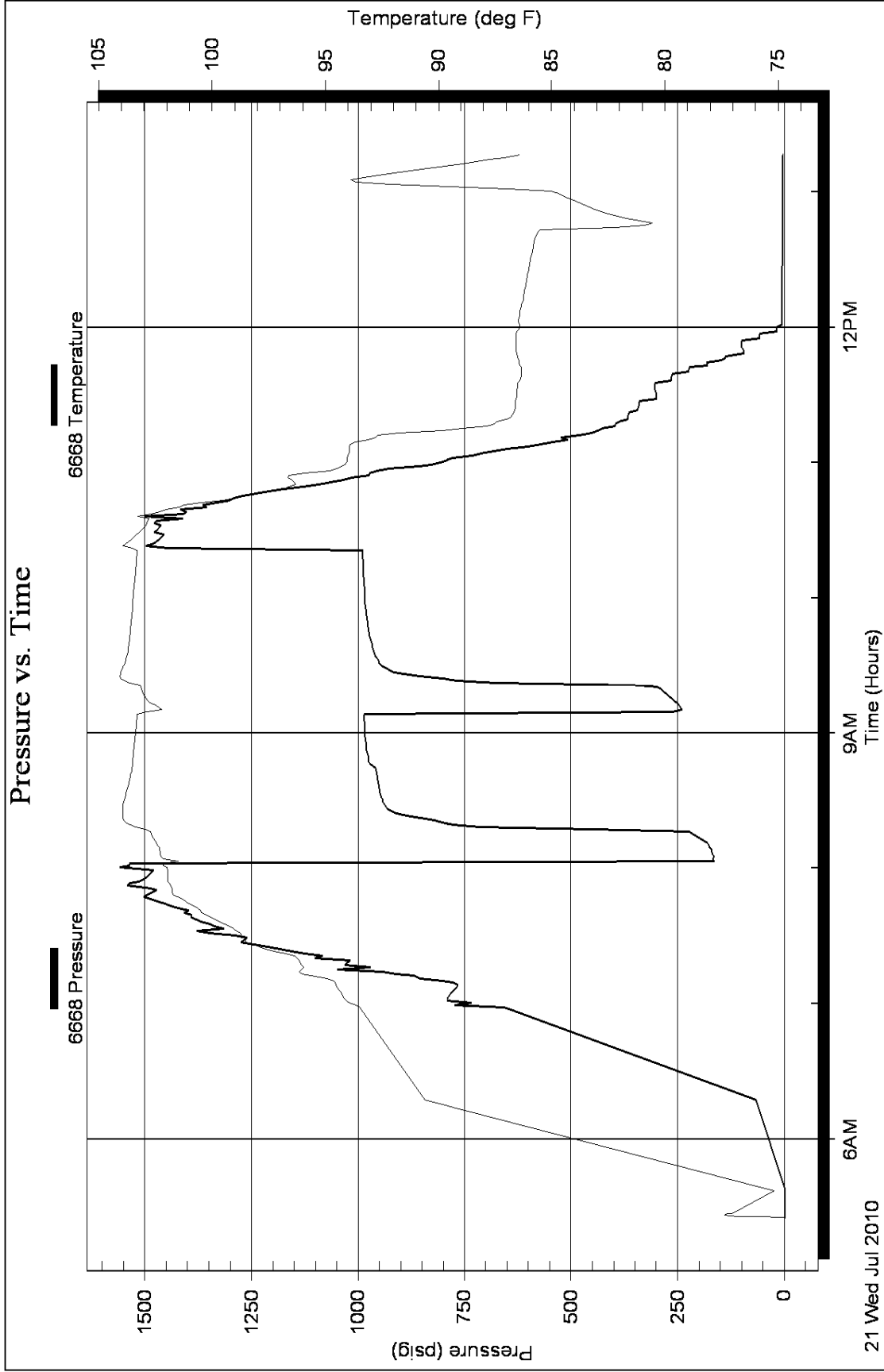
Serial #: 6668

Inside

Sam Gary Jr. & assoc. inc.

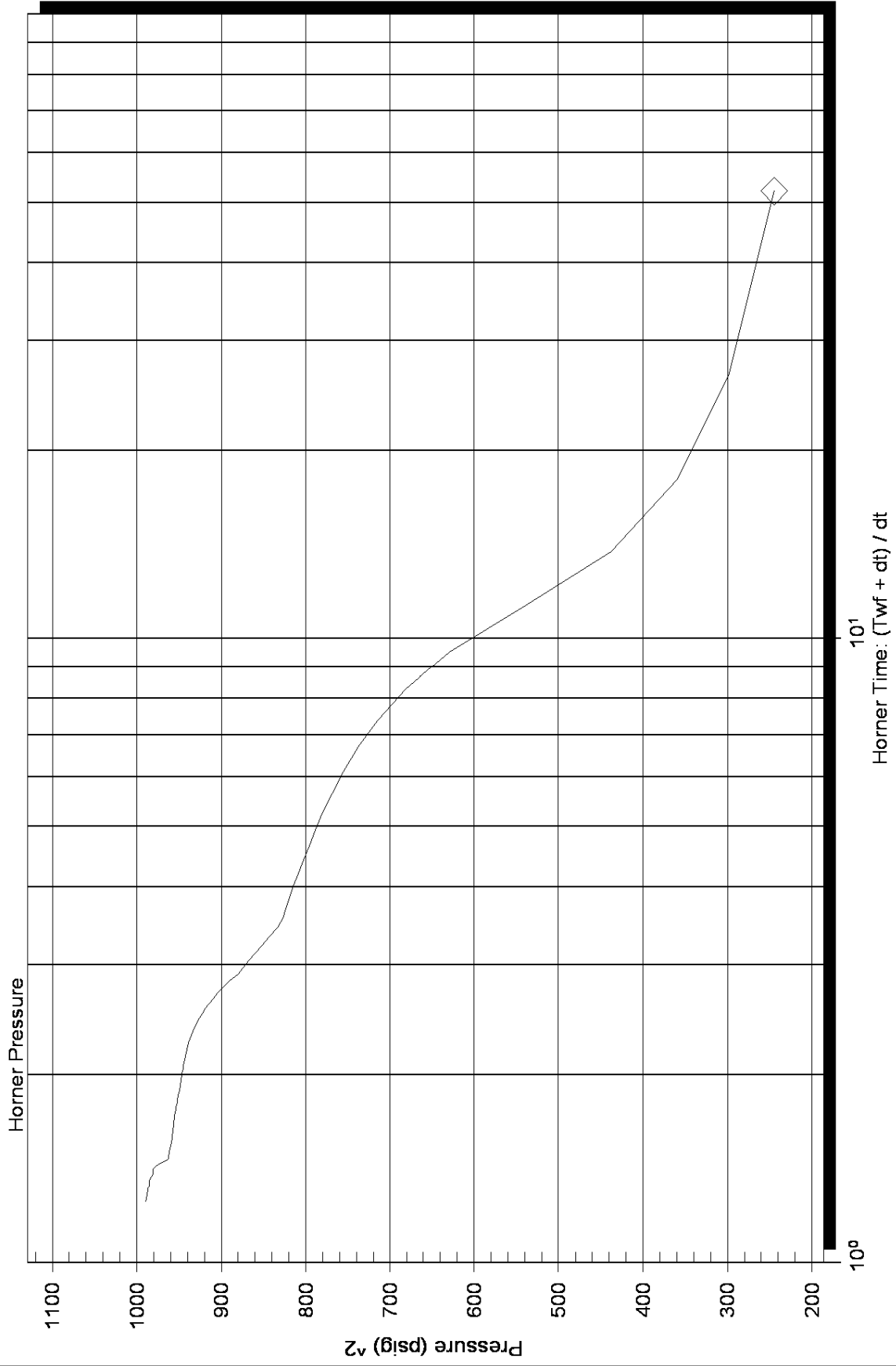
36-15s-16w Ellis

DST Test Number: 1





### Homer Plot



Serial Number: 6669 (Outside)

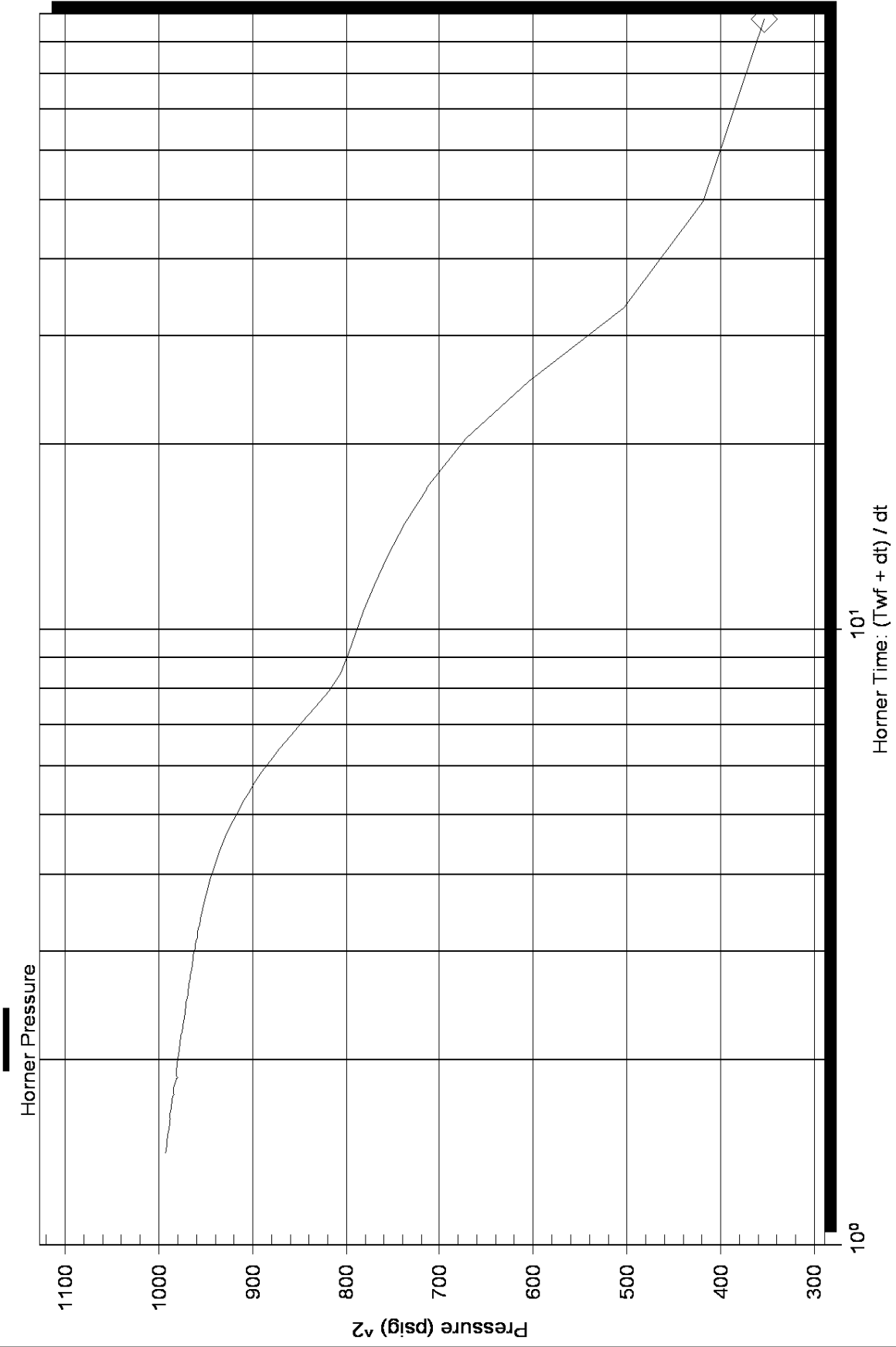
P\* :

Slope (m) : kpa/log cycle

Horner Time: (Twf + dt) / dt

Flow Cycle: 1

### Homer Plot



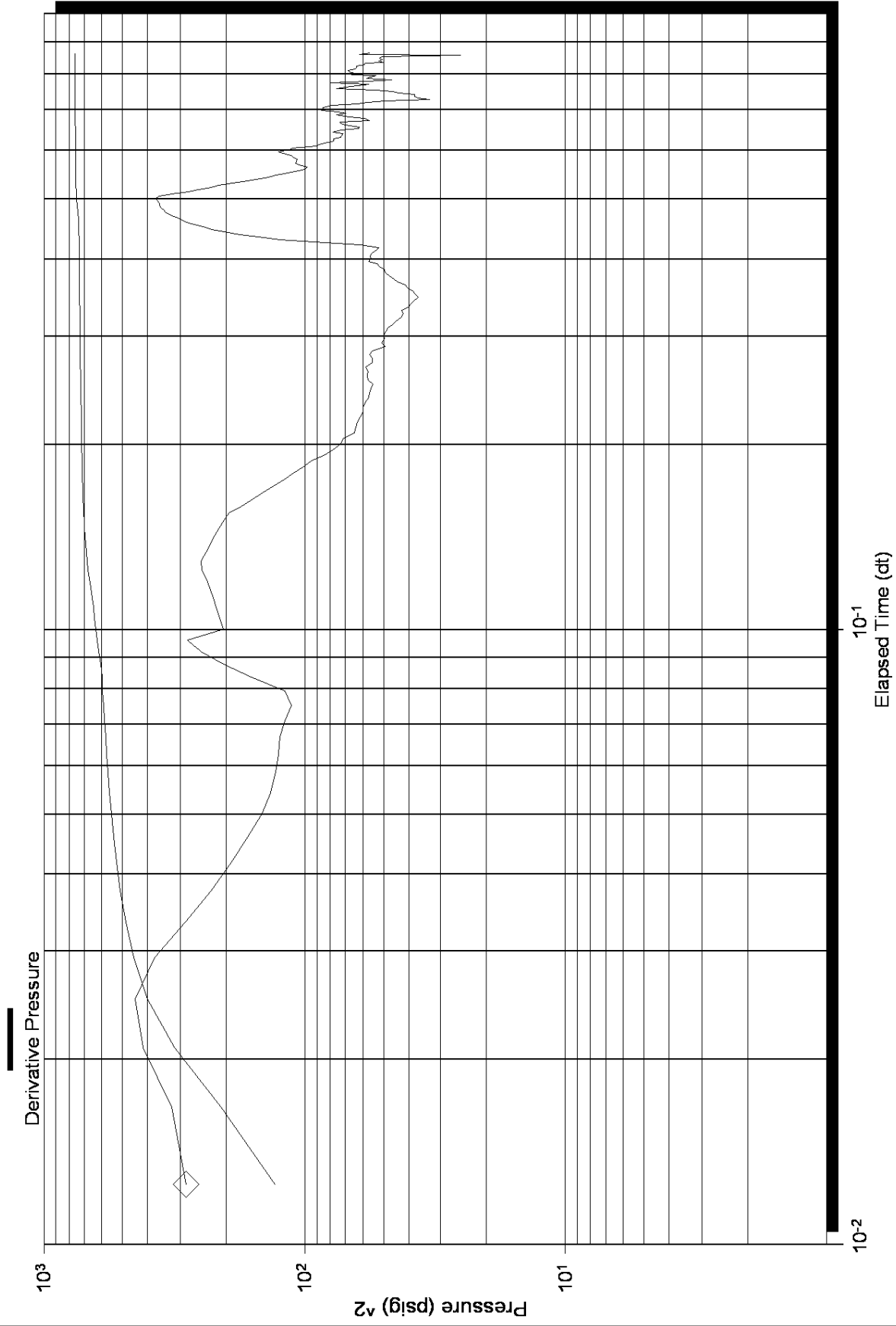
Serial Number: 6669 (Outside)

P\* :

Slope (m) : kpa/log cycle

Flow Cycle: 2

# Log-Log and Pseudo-Derivative



# Log-Log and Pseudo-Derivative

