

DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop Ste. 700
Denver, Co
80202

ATTN: Tom Fertal

3-16-11/Barton

T H Phillips 1-3

Start Date: 2010.07.11 @ 20:13:58

End Date: 2010.07.12 @ 03:04:22

Job Ticket #: 38965 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Sam Gary

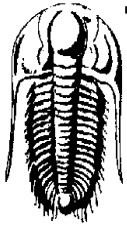
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DST # 3

Arbuckle

2010.07.11



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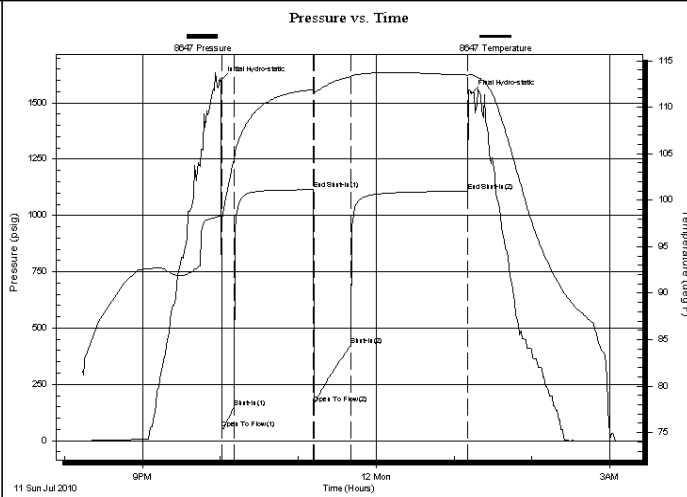
T H Phillips 1-3
3-16-11/Barton
 Job Ticket: 38965 **DST#: 3**
 Test Start: 2010.07.11 @ 20:13:58

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:01:23
 Time Test Ended: 03:04:22
 Test Type: Conventional Straddle
 Tester: Brian Fairbank
 Unit No: 41
 Interval: **3334.00 ft (KB) To 3342.00 ft (KB) (TVD)**
 Total Depth: 3420.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition:
 Reference Elevations: 1873.00 ft (KB)
 1863.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8647 Inside
 Press@RunDepth: 422.23 psig @ 3335.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2010.07.11 End Date: 2010.07.12 Last Calib.: 2010.07.12
 Start Time: 20:13:58 End Time: 03:04:22 Time On Btm: 2010.07.11 @ 22:00:23
 Time Off Btm: 2010.07.12 @ 01:13:22

TEST COMMENT: IFP - BOB 2 min.
 ISI - weak sur blow back - died 19 min.
 FFP - BOB 2 1/2 min.
 FSI - 1" blow back



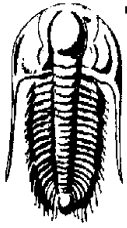
PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.36	98.37	Initial Hydro-static
1	54.86	97.91	Open To Flow (1)
10	147.86	104.38	Shut-In(1)
71	1114.30	111.88	End Shut-In(1)
72	165.63	111.66	Open To Flow (2)
100	422.23	113.25	Shut-In(2)
190	1108.33	113.45	End Shut-In(2)
193	1542.29	113.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
560.00	MW 95%W, 5%M	7.86
215.00	M & OCW 10%O, 85%W, 5%M	3.02
70.00	GMMCO 10%G, 40%O, 40%W, 10%M	0.98
90.00	FREE OIL 95%O, 5%M	1.26
0.00	60' GIP	0.00

Gas Rates

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



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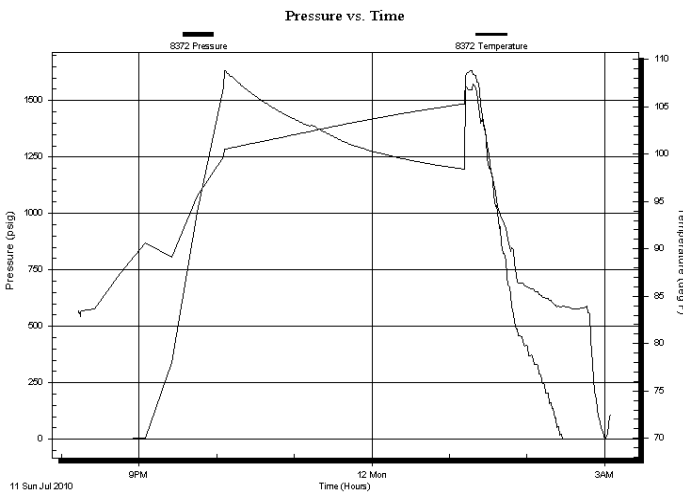
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 Test Type: Conventional Straddle
 Tester: Brian Fairbank
 Unit No: 41
 Reference Elevations: 1873.00 ft (KB)
 1863.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8372 Below (Straddle)
 Press@RunDepth: psig @ 3362.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2010.07.11 End Date: 2010.07.12 Last Calib.: 2010.07.12
 Start Time: 20:13:22 End Time: 03:05:46 Time On Btm:
 Time Off Btm:

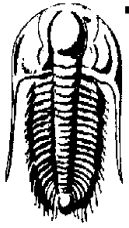
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PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
560.00	MW 95%W, 5%M	7.86
215.00	M & OCW 10%O, 85%W, 5%M	3.02
70.00	GMMCO 10%G, 40%O, 40%W, 10%M	0.98
90.00	FREE OIL 95%O, 5%M	1.26
0.00	60' GIP	0.00

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



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TOOL DIAGRAM

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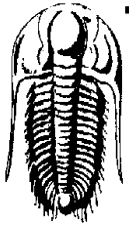
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Tool Information

Drill Pipe:	Length: 3321.00 ft	Diameter: 3.80 inches	Volume: 46.58 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 46.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3334.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	3342.00 ft			
Interval between Packers:	8.00 ft			
Tool Length:	117.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3312.00	
Hydraulic tool	5.00			3317.00	
Jars	5.00			3322.00	
Safety Joint	2.00			3324.00	
Packer	5.00			3329.00	27.00 Bottom Of Top Packer
Packer	5.00			3334.00	
Stubb	1.00			3335.00	
Recorder	0.00	8647	Inside	3335.00	
Safety Joint	2.00			3337.00	
Blank Off Sub	1.00			3338.00	
Blank Spacing	4.00			3342.00	8.00 Tool Interval
Packer	5.00			3347.00	
Stubb	1.00			3348.00	
Perforations	14.00			3362.00	
Recorder	0.00	8372	Below	3362.00	
Blank Spacing	62.00			3424.00	82.00 Bottom Packers & Anchor
Total Tool Length:	117.00				



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FLUID SUMMARY

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Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 37 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 15000 ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.15 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
560.00	MW 95%W, 5%M	7.855
215.00	M & OCW 10%O, 85%W, 5%M	3.016
70.00	GMWCO 10%G, 40%O, 40%W, 10%M	0.982
90.00	FREE OIL 95%O, 5%M	1.262
0.00	60' GIP	0.000

Total Length: 935.00 ft Total Volume: 13.115 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

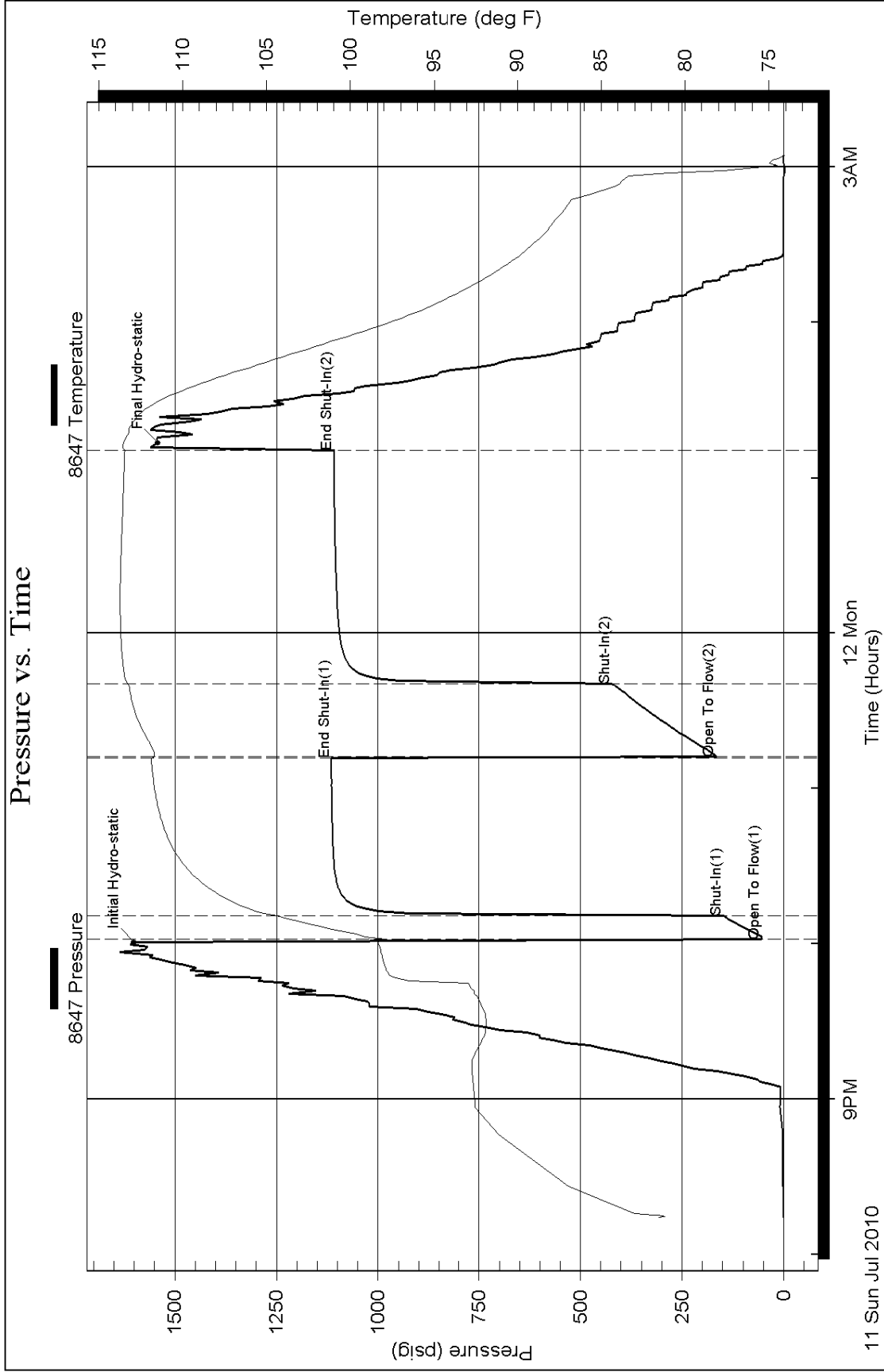
Serial #: 8647

Inside

Sam Gary

3-16-11/Barton

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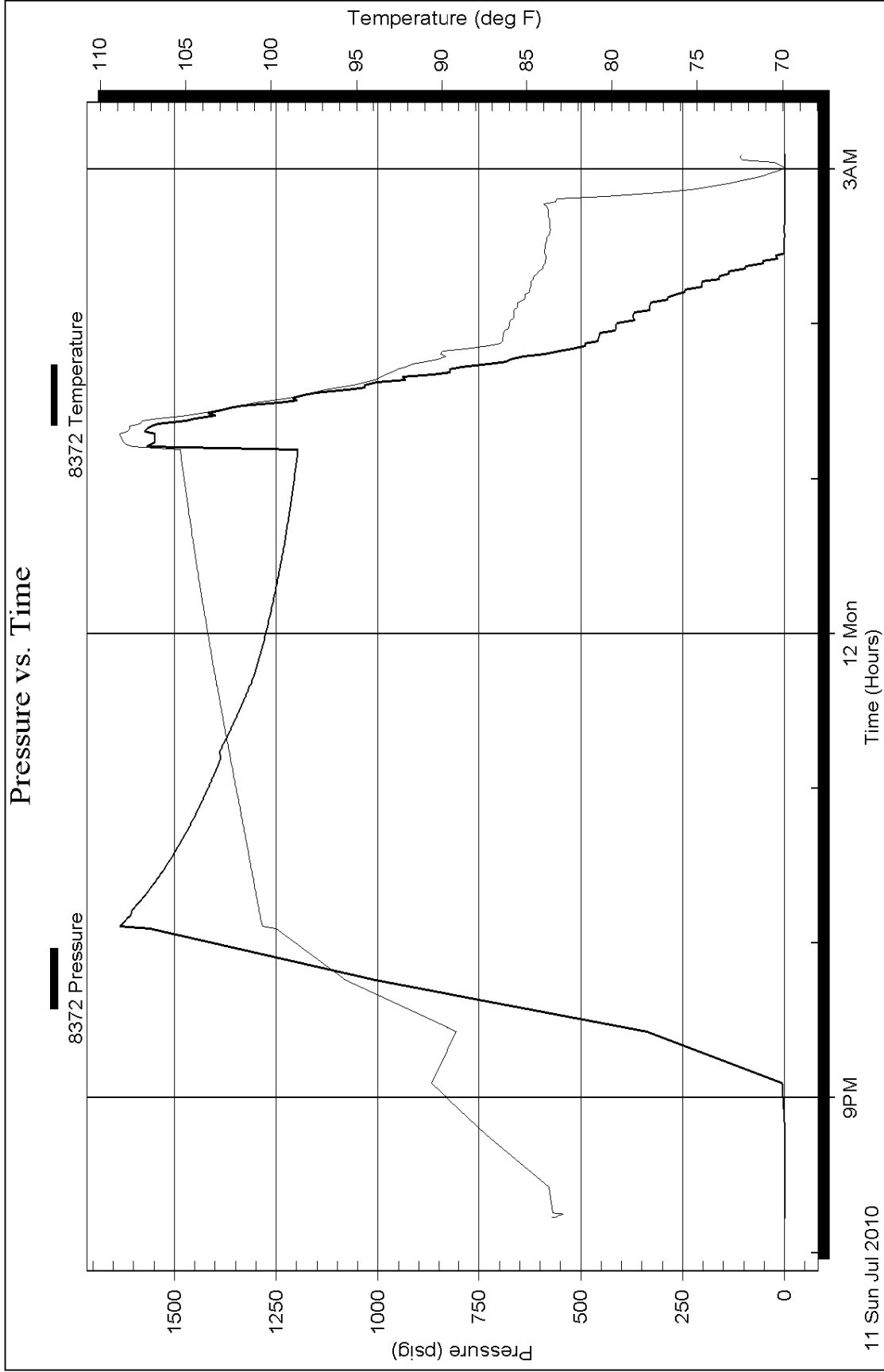


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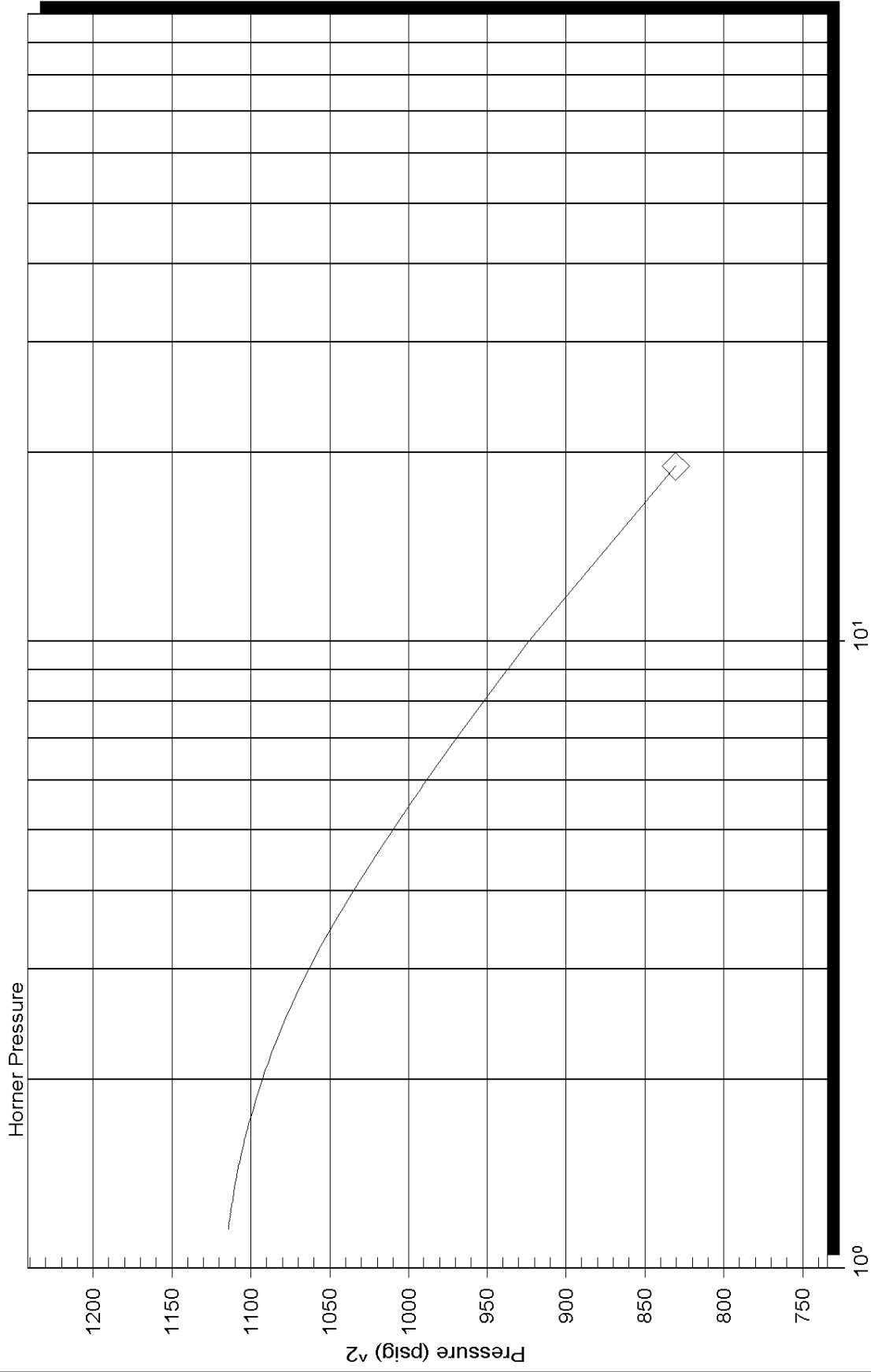
Below (Stratified)

3-16-11/Barton

DST Test Number: 3



Horner Plot



Serial Number: 8647 (Inside)

Slope (m) : kpa/log cycle

Flow Cycle: 1

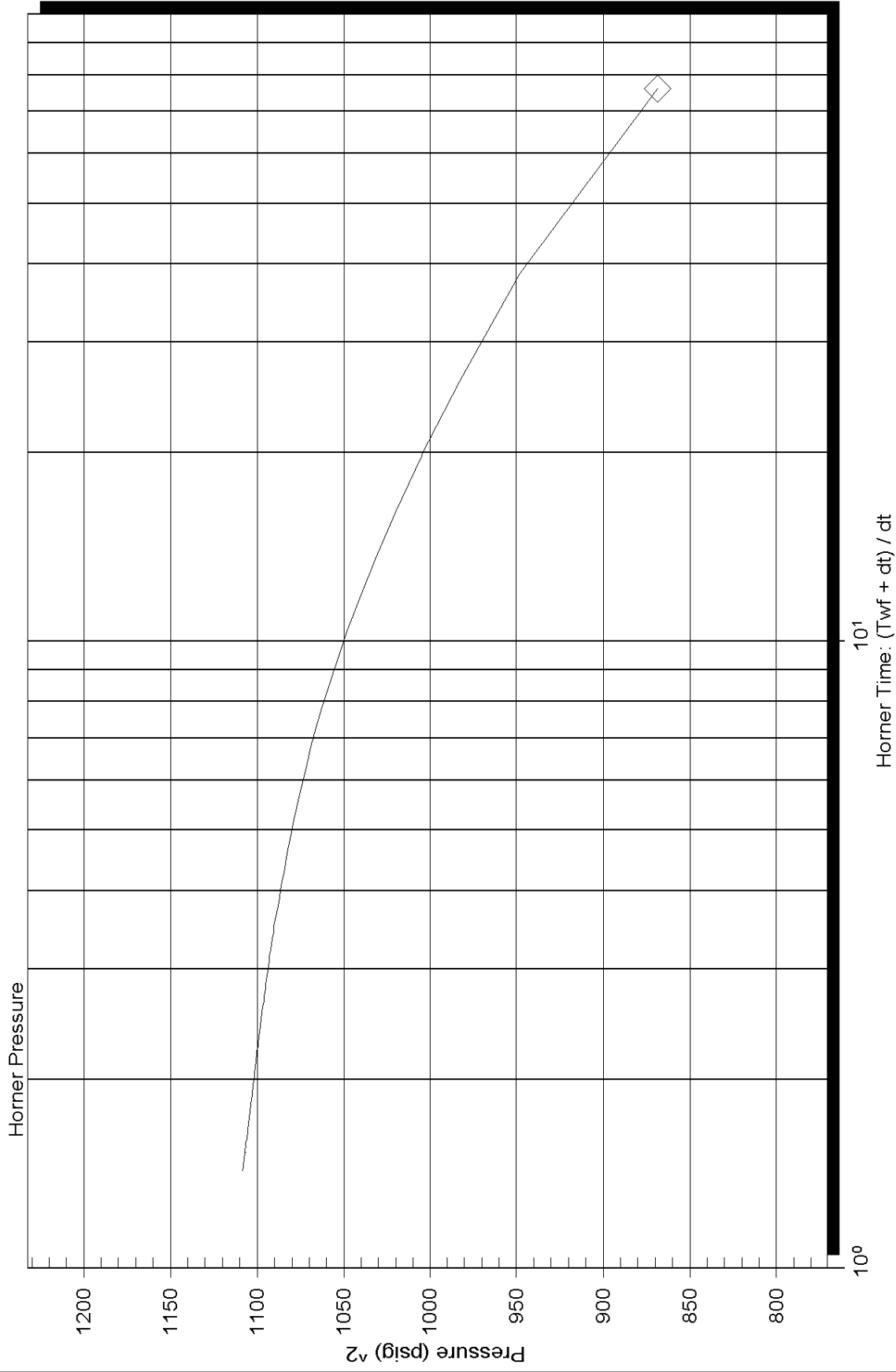
Horner Time: (Twf + dt) / dt

10¹

10⁰

Horner Pressure

Horner Plot



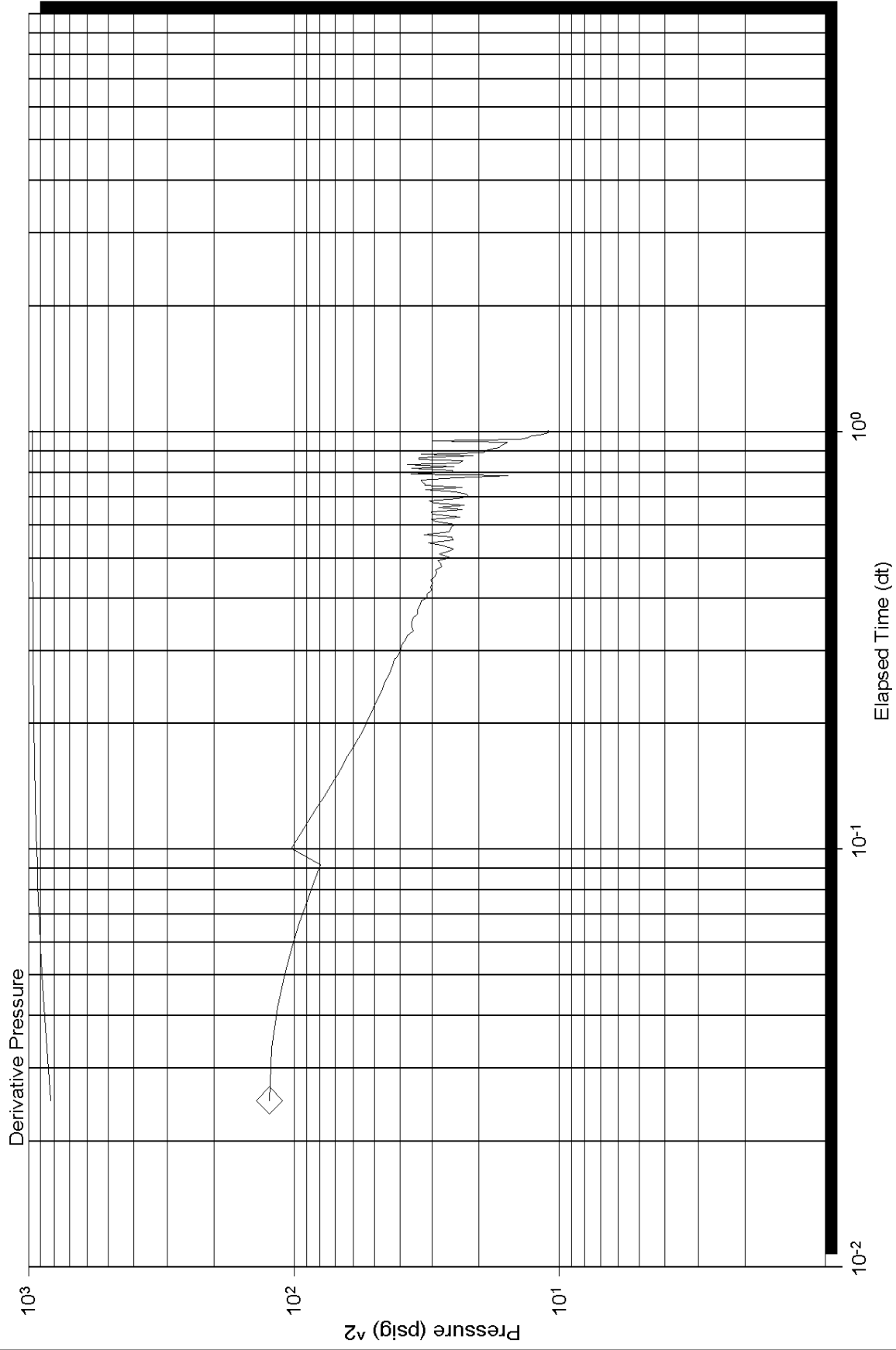
Serial Number: 8647 (Inside)

P* :

Slope (m) : kpa/log cycle

Flow Cycle: 2

Log-Log and Pseudo-Log-Derivative



Log-Log and Pseudo-Log-Log

