

## DRILL STEM TEST REPORT

Prepared For: **Sam Gary**

1515 Wynkoop Ste 700  
Denver Co 80202

ATTN: Tom Fertal

**10-17-16-Rush-Ks**

**Brack et al # 1-10**

Start Date: 2010.08.06 @ 03:50:42

End Date: 2010.08.06 @ 10:33:12

Job Ticket #: 039916          DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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Sam Gary

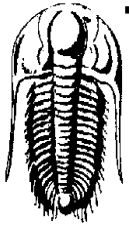
Brack et al # 1-10

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DST # 5

Arbuckle

2010.08.06



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# DRILL STEM TEST REPORT

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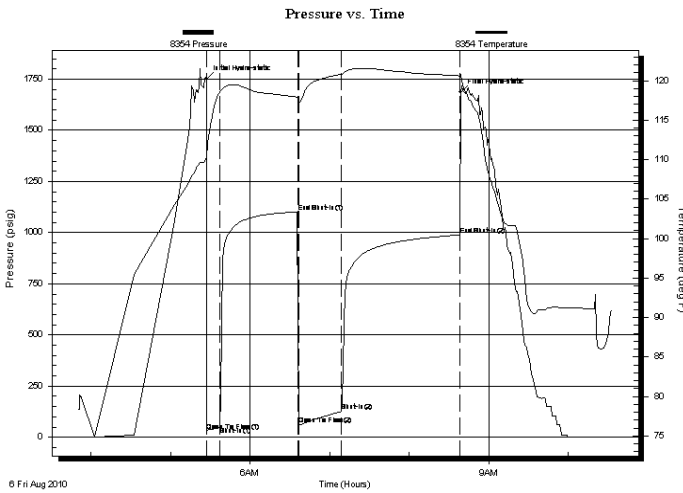
**Bracket # 1-10**  
**10-17-16-Rush-Ks**  
 Job Ticket: 039916 **DST#: 5**  
 Test Start: 2010.08.06 @ 03:50:42

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 05:27:27  
 Time Test Ended: 10:33:12  
 Interval: **3556.00 ft (KB) To 3567.00 ft (KB) (TVD)**  
 Total Depth: 3567.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole  
 Tester: Dan Bangle  
 Unit No: 38  
 Reference Elevations: 2007.00 ft (KB)  
 1919.00 ft (CF)  
 KB to GR/CF: 88.00 ft

**Serial #: 8354 Inside**  
 Press@RunDepth: 126.26 psig @ 3564.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2010.08.06 End Date: 2010.08.06 Last Calib.: 2010.08.06  
 Start Time: 03:50:43 End Time: 10:33:12 Time On Btm: 2010.08.06 @ 05:26:57  
 Time Off Btm: 2010.08.06 @ 08:38:42

**TEST COMMENT:** IF-Strong B-B in 4 min  
 IS-Weak building to 1/4" - died in 20 min  
 FF-Strong B-B in 3 min  
 FS-Weak building to 1/2" - died in 36 min



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1751.03	110.20	Initial Hydro-static
1	31.49	110.24	Open To Flow (1)
10	51.08	118.53	Shut-In(1)
69	1101.83	117.93	End Shut-In(1)
70	60.40	117.34	Open To Flow (2)
102	126.26	120.82	Shut-In(2)
192	988.99	120.61	End Shut-In(2)
192	1686.63	120.80	Final Hydro-static

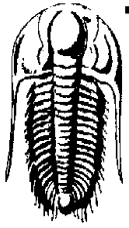
## Recovery

Length (ft)	Description	Volume (bbl)
80.00	MCGsyO 10%g 70%o 20%m	0.85
280.00	CGsyO 15%g 85%o	3.93
0.00	550 GIP	0.00

## Gas Rates

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





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**TOOL DIAGRAM**

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**10-17-16-Rush-Ks**  
Job Ticket: 039916      **DST#: 5**  
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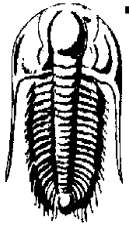
### Tool Information

Drill Pipe:	Length: 3519.00 ft	Diameter: 3.80 inches	Volume: 49.36 bbl	Tool Weight: 2800.00 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 49.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3556.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	11.00 ft			
Tool Length:	39.00 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			3529.00	
Shut In Tool	5.00			3534.00	
Hydraulic tool	5.00			3539.00	
Jars	5.00			3544.00	
Safety Joint	3.00			3547.00	
Packer	5.00			3552.00	28.00      Bottom Of Top Packer
Packer	4.00			3556.00	
Stubb	1.00			3557.00	
Perforations	7.00			3564.00	
Recorder	0.00	8354	Inside	3564.00	
Recorder	0.00	8520	Outside	3564.00	
Bullnose	3.00			3567.00	11.00      Bottom Packers & Anchor

**Total Tool Length: 39.00**



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**FLUID SUMMARY**

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**Brack et al # 1-10**  
**10-17-16-Rush-Ks**  
Job Ticket: 039916      **DST#: 5**  
Test Start: 2010.08.06 @ 03:50:42

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 32 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.59 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 7200.00 ppm		
Filter Cake: inches		

## Recovery Information

Recovery Table

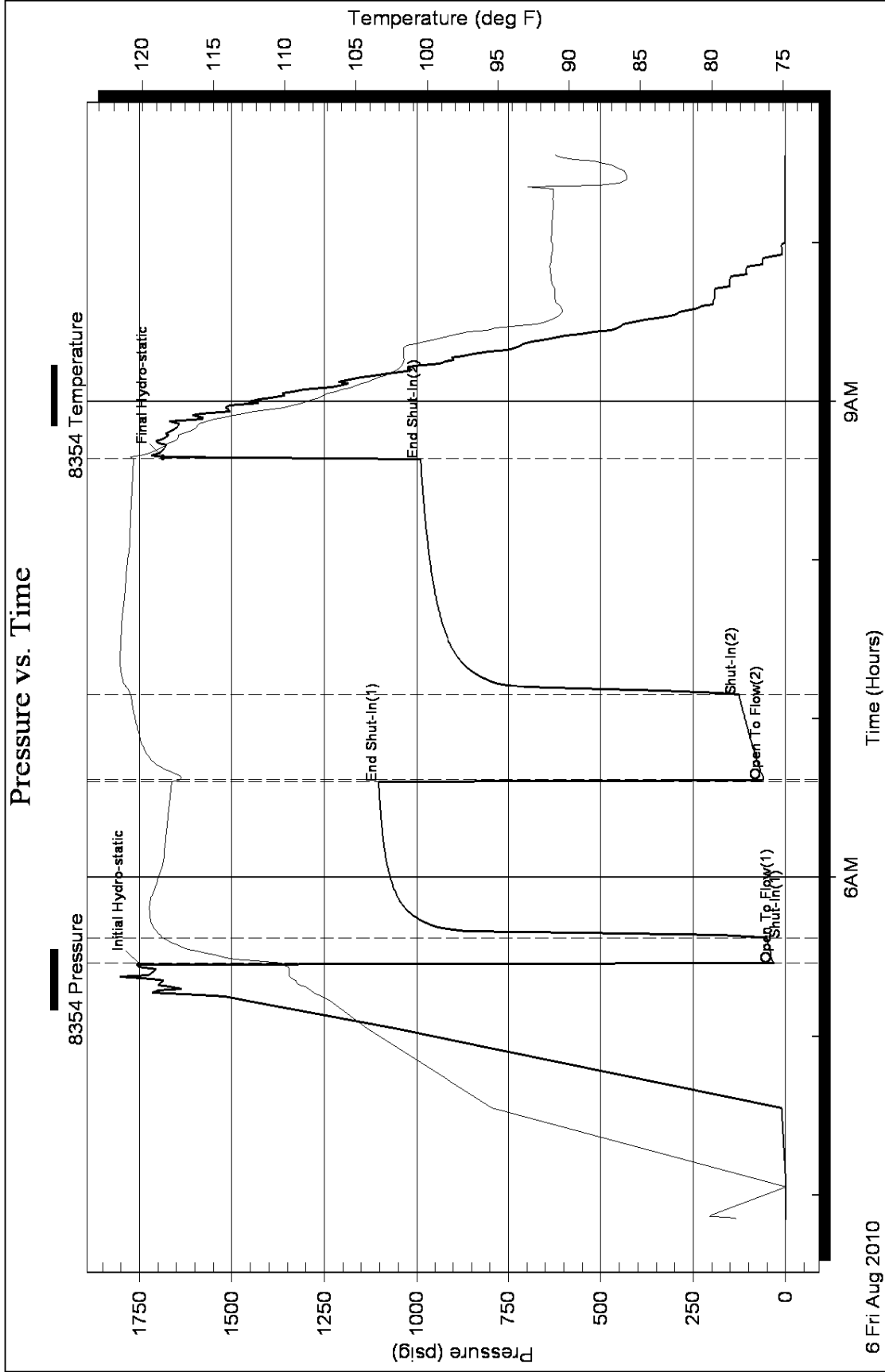
Length ft	Description	Volume bbl
80.00	MCGsyO 10%g 70%o 20%m	0.849
280.00	CGsyO 15%g 85%o	3.928
0.00	550 GIP	0.000

Total Length: 360.00 ft      Total Volume: 4.777 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments:

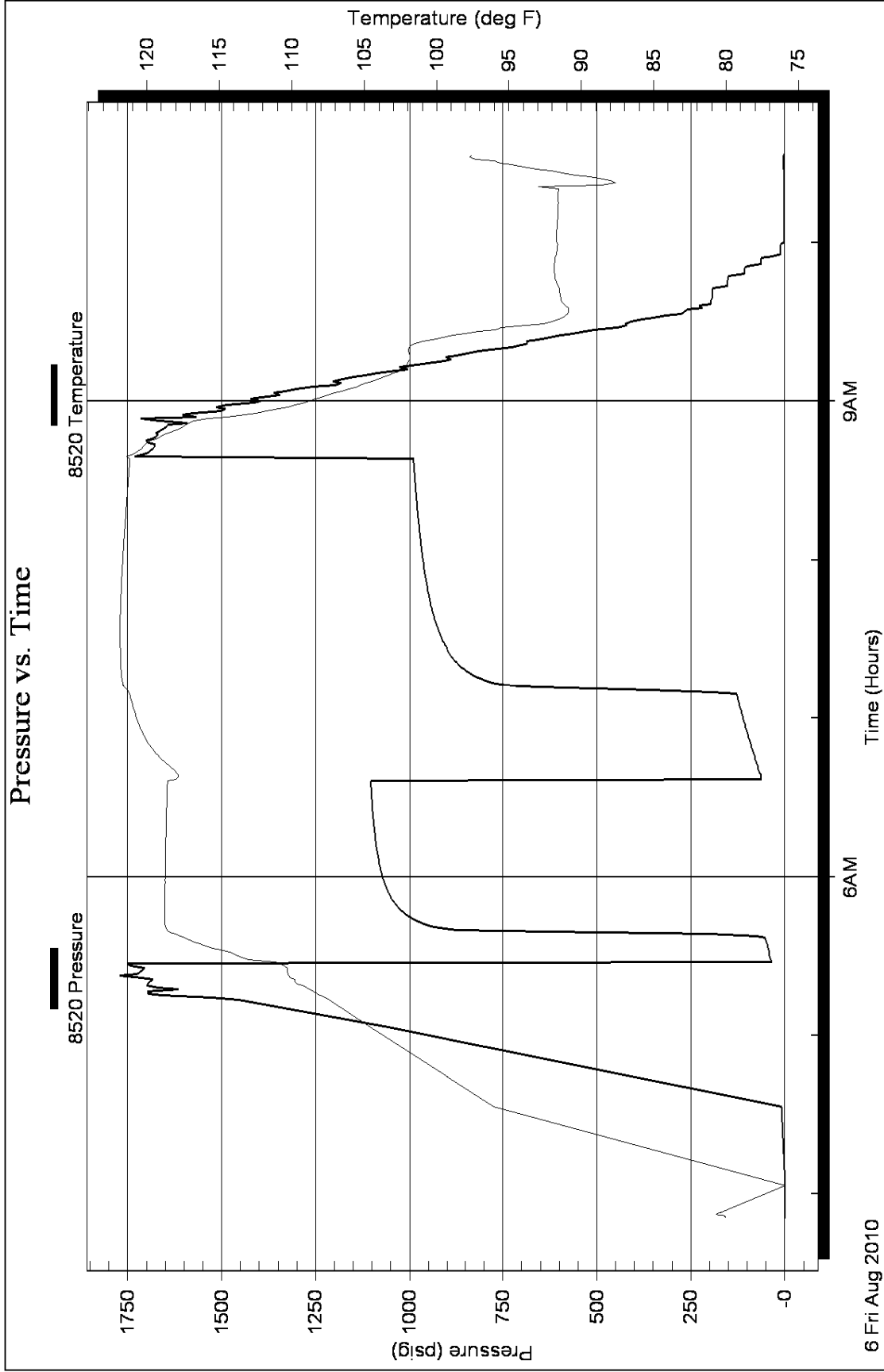


Serial #: 8520

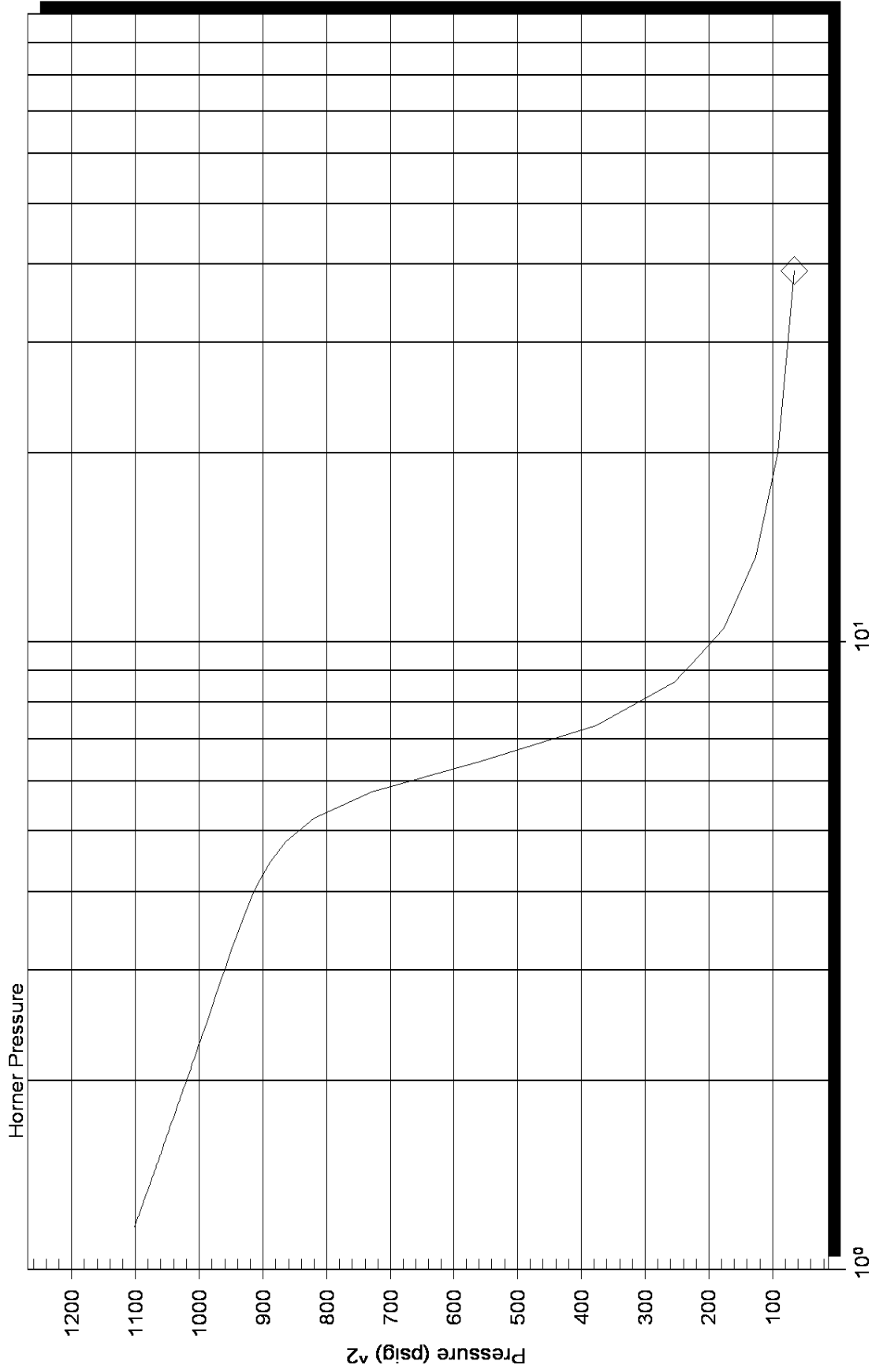
Outside Sam Gary

10-17-16-Rush-Ks

DST Test Number: 5



# Homer Plot



Serial Number: 8354 (Inside)

Slope (m) : kpa/log cycle

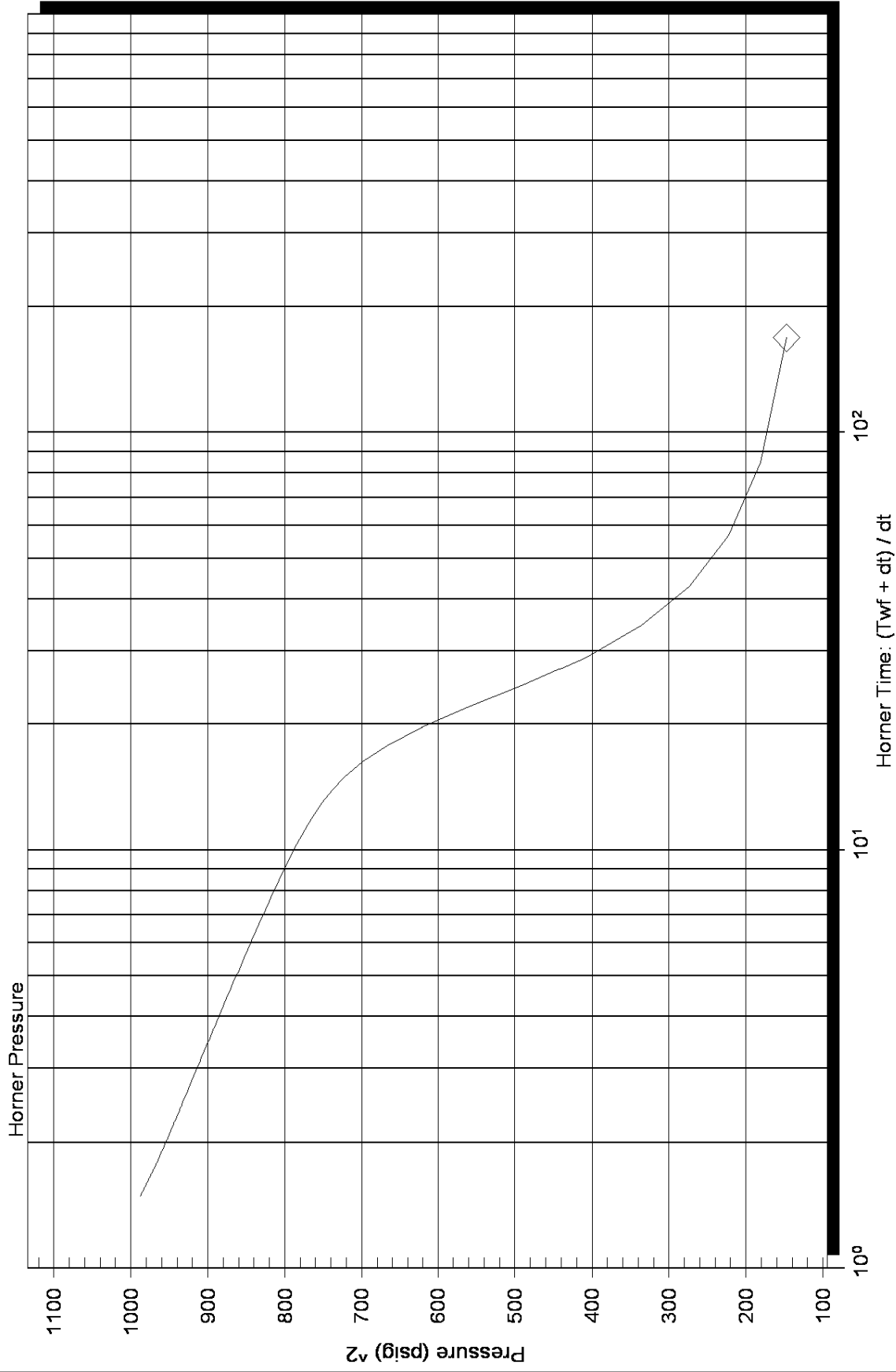
P\* :

Horner Time: (Twf + dt) / dt

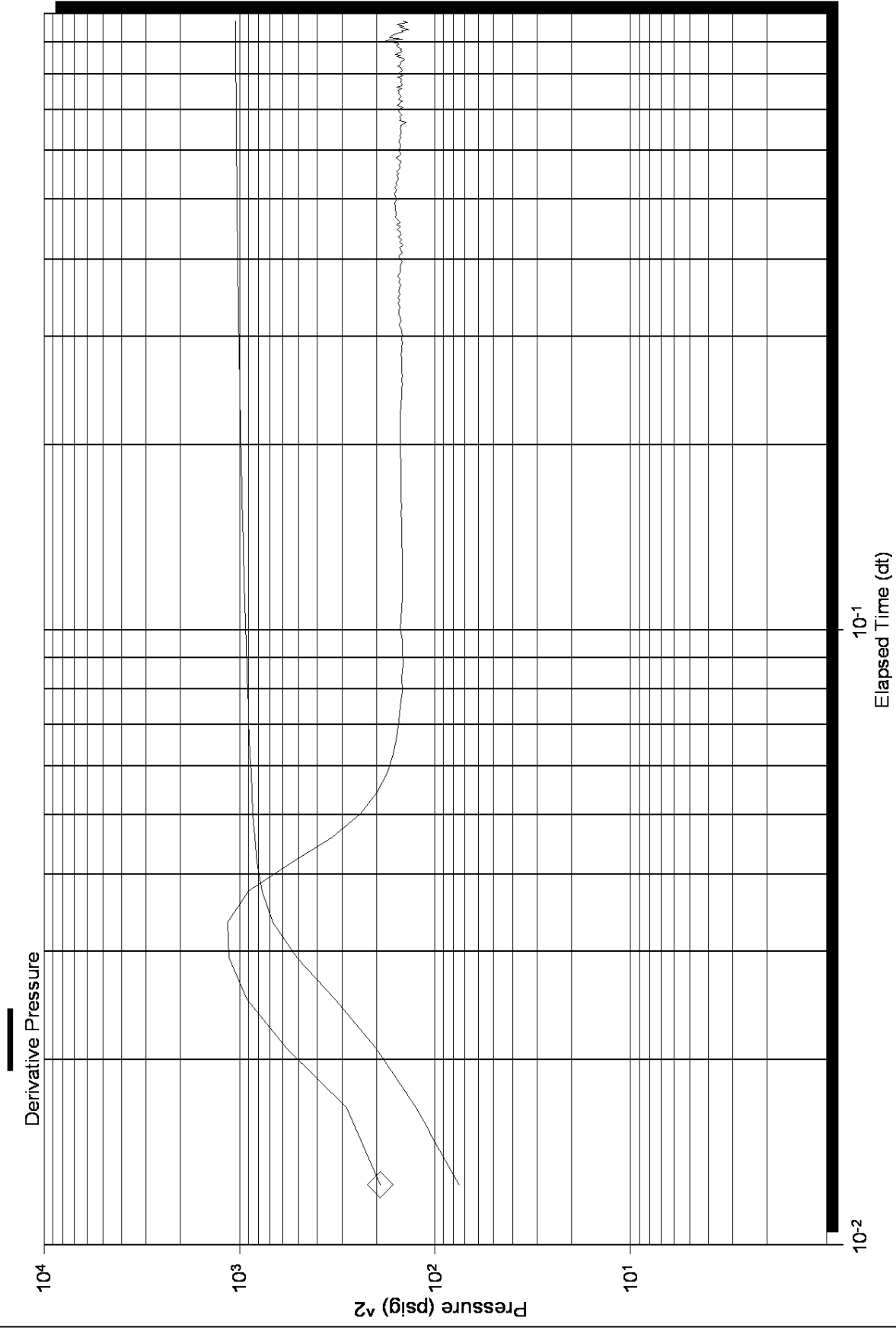
Flow Cycle: 1



### Homer Plot



# Log-Log and Pseudo-Log-Log



# Log-Log and Pseudo-Log-Log

