



## DRILL STEM TEST REPORT

Prepared For: **F G Holl Company**

9431 East Central Ste 100  
Wichita Kansas 67206

ATTN: Rene Husted

**Rudiger 1-7**

**7-20s-14w-Barton**

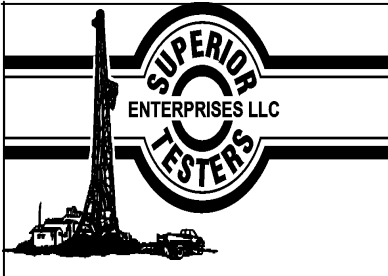
Start Date: 2014.03.09 @ 07:19:00

End Date: 2014.03.09 @ 13:50:30

Job Ticket #: 19272                      DST #: 7

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

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# DRILL STEM TEST REPORT

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 ATTN: Rene Hustead

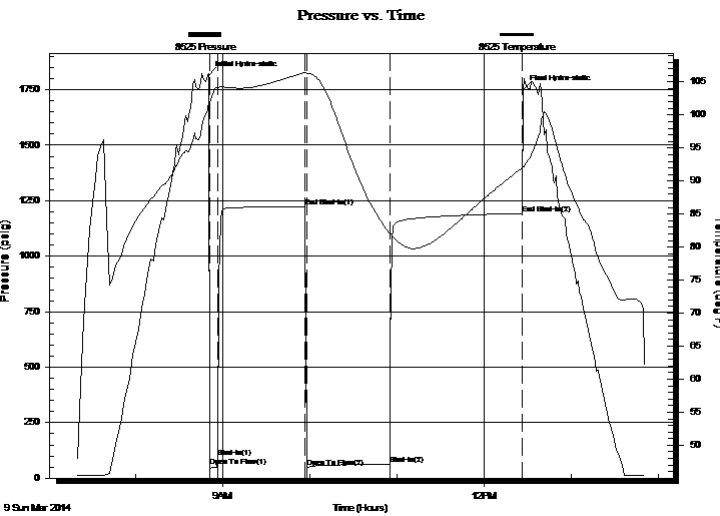
**7-20s-14w-Barton**  
**Rudiger 1-7**  
 Job Ticket: 19272 **DST#: 7**  
 Test Start: 2014.03.09 @ 07:19:00

### GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 08:51:00 Tester: Dustin Ellis  
 Time Test Ended: 13:50:30 Unit No: 3315-Great Bend-22  
**Interval: 3614.00 ft (KB) To 3625.00 ft (KB) (TVD)** Reference Elevations: 1919.00 ft (KB)  
 Total Depth: 3625.00 ft (KB) (TVD) 1911.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

**Serial #: 8525 Outside**  
 Press@RunDepth: 63.23 psig @ 3620.00 ft (KB) Capacity: 5000.00 psig  
 Start Date: 2014.03.09 End Date: 2014.03.09 Last Calib.: 2014.03.09  
 Start Time: 07:19:00 End Time: 13:50:30 Time On Btm: 2014.03.09 @ 08:50:30  
 Time Off Btm: 2014.03.09 @ 12:27:00

**TEST COMMENT:** 1st Open 5 minutes Strong building blow built to the bottom of a 5 gallon bucket of water in 25 seconds.  
 1st Shu in 60 minutes Yes blow back  
 2nd Open 60 minutes Strong building blow built to the bottom of a 5 gallon bucket of water instantly.  
 2nd Shut in 90 minutes Yes blow back



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1815.98	102.00	Initial Hydro-static
1	52.71	101.82	Open To Flow (1)
6	93.57	104.06	Shut-In(1)
66	1222.54	106.45	End Shut-In(1)
67	50.19	106.22	Open To Flow (2)
125	63.23	81.96	Shut-In(2)
216	1192.44	92.01	End Shut-In(2)
217	1750.30	92.23	Final Hydro-static

### Recovery

### Gas Rates

Length (ft)	Description	Volume (bbl)
30.00	Gassy mud 100%	0.42

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	9.00	37.12
Last Gas Rate	0.50	7.10	145.03
Max. Gas Rate	0.25	9.00	37.12



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 Job Ticket: 19272      **DST#: 7**  
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 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:51:00  
 Time Test Ended: 13:50:30

Test Type: Conventional Bottom Hole (Initial)  
 Tester: Dustin Ellis  
 Unit No: 3315-Great Bend-22

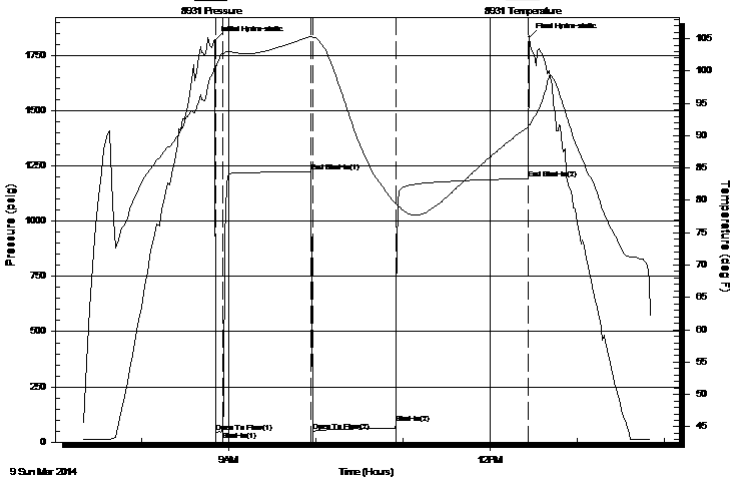
Interval: **3614.00 ft (KB) To 3625.00 ft (KB) (TVD)**  
 Total Depth: 3625.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1919.00 ft (KB)  
 1911.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8931      Inside**  
 Press@RunDepth: 1192.19 psig @ 3620.00 ft (KB)      Capacity: 5000.00 psig  
 Start Date: 2014.03.09      End Date: 2014.03.09      Last Calib.: 2014.03.09  
 Start Time: 07:19:00      End Time: 13:51:00      Time On Btm: 2014.03.09 @ 08:50:30  
    Time Off Btm: 2014.03.09 @ 12:27:00

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 1st Shu in 60 minutes Yes blow back  
 2nd Open 60 minutes Strong building blow built to the bottom of a 5 gallon bucket of water instantly.  
 2nd Shut in 90 minutes Yes blow back

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1815.54	100.81	Initial Hydro-static
1	43.58	100.57	Open To Flow (1)
6	49.06	102.66	Shut-In(1)
66	1222.21	105.34	End Shut-In(1)
67	48.47	105.13	Open To Flow (2)
125	85.90	79.40	Shut-In(2)
216	1192.19	91.42	End Shut-In(2)
217	1832.54	91.63	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Gassy mud 100%	0.42

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	9.00	37.12
Last Gas Rate	0.50	7.10	145.03
Max. Gas Rate	0.25	9.00	37.12



# DRILL STEM TEST REPORT

TOOL DIAGRAM

F G Holl Company  
 9431 East Central Ste 100  
 Wichita Kansas 67206  
 ATTN: Rene Husted

**7-20s-14w-Barton**  
**Rudiger 1-7**  
 Job Ticket: 19272      **DST#: 7**  
 Test Start: 2014.03.09 @ 07:19:00

## Tool Information

Drill Pipe:	Length: 3616.00 ft	Diameter: 3.80 inches	Volume: 50.72 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 50.72 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3614.00 ft			Final 49000.00 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
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Shut In Tool	5.00			3591.00	
Hydraulic tool	5.00			3596.00	
Jars	6.00			3602.00	
Safety Joint	2.00			3604.00	
Top Packer	5.00			3609.00	
Packer	5.00			3614.00	28.00      Bottom Of Top Packer
Perforations	6.00			3620.00	
Recorder	0.00	8931	Inside	3620.00	
Recorder	0.00	8525	Outside	3620.00	
Bull Plug	5.00			3625.00	11.00      Anchor Tool
<b>Total Tool Length:</b>	<b>39.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

F G Holl Company

**7-20s-14w-Barton**

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**Rudiger 1-7**

Job Ticket: 19272

**DST#: 7**

ATTN: Rene Husted

Test Start: 2014.03.09 @ 07:19:00

### 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: 50.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.60 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 5600.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Gassy mud 100%	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



# DRILL STEM TEST REPORT

**GAS RATES**

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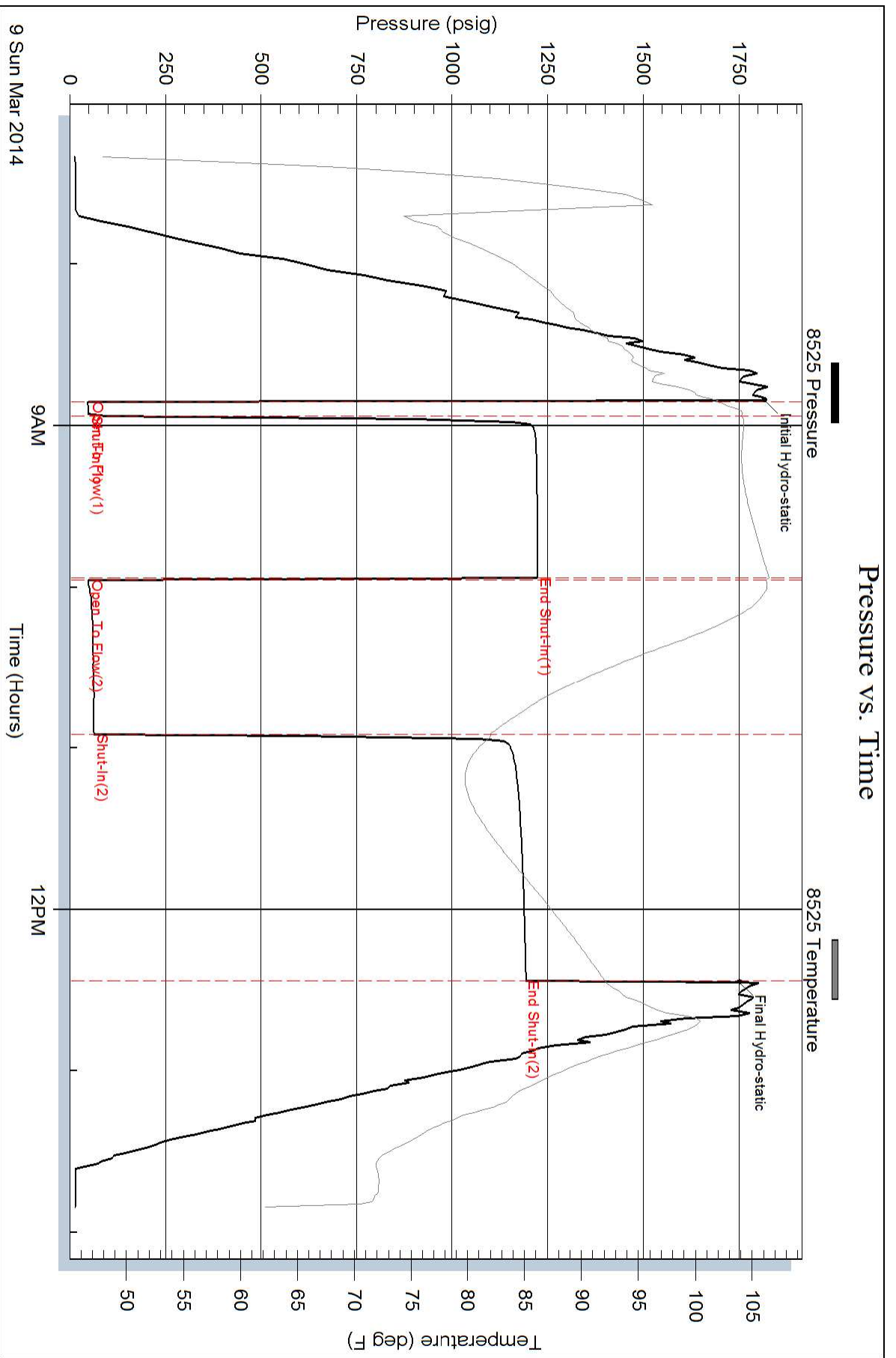
## Gas Rates Information

Temperature: 59 (deg F)  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	0.25	9.00	37.12
2	5	0.25	9.00	37.12
2	10	0.38	8.00	82.06
2	20	0.50	0.50	100.51
2	30	0.50	4.00	124.12
2	40	0.50	5.00	130.87
2	50	0.50	7.10	145.03

### Pressure vs. Time



### Pressure vs. Time

