



DRILL STEM TEST REPORT

Prepared For: **Mull Drilling Company**

1700 North Waterfront Parkway Wichita
Kansas
67206

ATTN: Kevin Kessler

Patricia 1-31

31-16s-22w-Ness

Start Date: 2011.12.06 @ 04:00:00

End Date: 2011.12.06 @ 13:14:30

Job Ticket #: 17244 DST #: 3

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

Printed: 2011.12.07 @ 16:12:03



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67206

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DST#: 3

ATTN: Kevin Kessler

Test Start: 2011.12.06 @ 04:00:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:24:00

Time Test Ended: 13:14:30

Test Type: Conventional Straddle (Initial)

Tester: Dustin Ellis

Unit No: 3315-GB-150

Interval: 4395.00 ft (KB) To 4410.00 ft (KB) (TVD)

Reference Elevations: 2380.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2371.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 6806

Outside

Press @ RunDepth: 165.39 psia @ 4409.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2011.12.06

End Date: 2011.12.06

Last Calib.: 2011.12.07

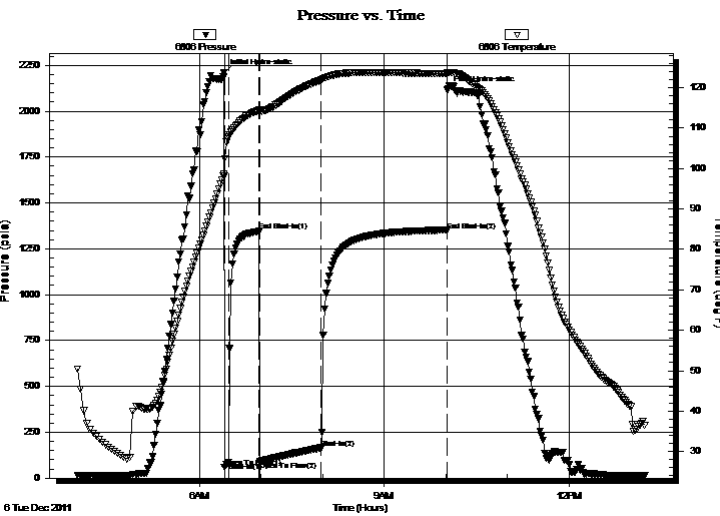
Start Time: 04:01:00

End Time: 13:14:30

Time On Btm: 2011.12.06 @ 06:23:30

Time Off Btm: 2011.12.06 @ 10:01:30

TEST COMMENT: 1st Open 5 minutes Fair building blow built to 2.5 into the bucket
1st Shut in 30 minutes No blow back
2nd Open 60 minutes Fair building blow blew bottom of bucket in 34 minutes.
2nd Shut in 120 minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2206.71	98.61	Initial Hydro-static
1	59.85	98.26	Open To Flow (1)
5	87.54	107.87	Shut-In(1)
35	1345.07	114.42	End Shut-In(1)
35	92.89	114.13	Open To Flow (2)
95	165.39	121.89	Shut-In(2)
218	1349.70	123.45	End Shut-In(2)
218	2114.53	123.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Water cut mud 90% water 10% mud	0.59
120.00	Muddy water 50% water 50% mud	1.29
60.00	Slighty oil cut mud 90% mud 10% oil	0.84
0.00	Chlorides 46000	0.00

Gas Rates

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



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GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Straddle (Initial)

Time Tool Opened: 06:24:00

Tester: Dustin Ellis

Time Test Ended: 13:14:30

Unit No: 3315-GB-150

Interval: 4395.00 ft (KB) To 4410.00 ft (KB) (TVD)

Reference Elevations: 2380.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

2371.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 6663

Inside

Press @ RunDepth: 1352.79 psia @ 4408.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2011.12.06

End Date: 2011.12.06

Last Calib.: 2011.12.07

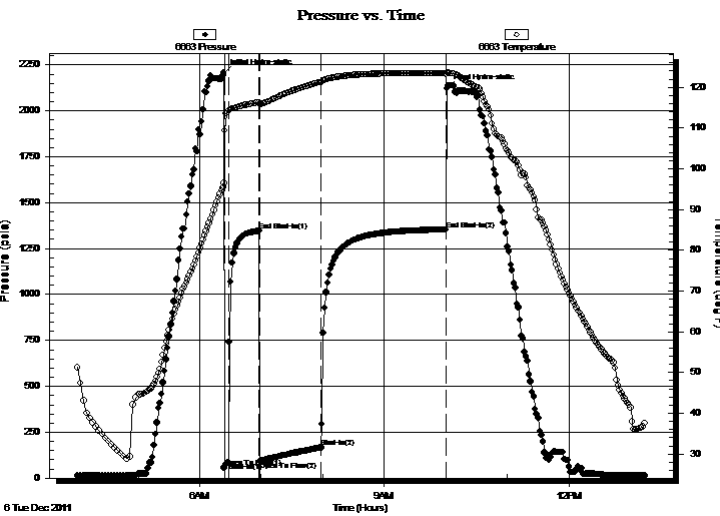
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TEST COMMENT: 1st Open 5 minutes Fair building blow built to 2.5 into the bucket
1st Shut in 30 minutes No blow back
2nd Open 60 minutes Fair building blow blew bottom of bucket in 34 minutes.
2nd Shut in 120 minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2204.76	95.56	Initial Hydro-static
1	56.57	96.43	Open To Flow (1)
5	86.20	113.98	Shut-In(1)
35	1345.15	116.25	End Shut-In(1)
35	93.09	115.89	Open To Flow (2)
95	165.98	121.25	Shut-In(2)
217	1352.79	123.29	End Shut-In(2)
218	2119.99	123.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Water cut mud 90% water 10% mud	0.59
120.00	Muddy water 50% water 50% mud	1.29
60.00	Slighty oil cut mud 90% mud 10% oil	0.84
0.00	Chlorides 46000	0.00

Gas Rates

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



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TOOL DIAGRAM

Mull Drilling Company

31-16s-22w-Ness

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Patricia 1-31

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Test Start: 2011.12.06 @ 04:00:00

Tool Information

Drill Pipe:	Length: 4214.00 ft	Diameter: 3.80 inches	Volume: 59.11 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: 163.25 ft	Diameter: 2.25 inches	Volume: 0.80 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 59.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.25 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4395.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	4410.00 ft			
Interval between Packers:	15.00 ft			
Tool Length:	137.00 ft			
Number of Packers:	2	Diameter: 6.25 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-In Tool	5.00			4377.00		
Hydraulic Tool	5.00			4382.00		
Safety Joint	2.00			4384.00		
Jars	6.00			4390.00		
Packer	5.00			4395.00	23.00	Bottom Of Top Packer
Perforations	12.00			4407.00		
Recorder	1.00	6663	Inside	4408.00		
Recorder	1.00	6806	Outside	4409.00		
Blank Off Sub	1.00			4410.00	15.00	Tool Interval
Packer	5.00			4415.00		
C.O. Sub	0.75			4415.75		
Drill Pipe	63.50			4479.25		
C.O. Sub	0.75			4480.00		
Anchor	25.00		Outside	4505.00		
Recorder	1.00	6999	Outside	4506.00		
Bullnose	3.00			4509.00	99.00	Bottom Packers & Anchor
Total Tool Length:	137.00					



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FLUID SUMMARY

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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:

bbbl

Water Loss: 7.60 in³

Gas Cushion Type:

Resistivity: 0.40 ohm.m

Gas Cushion Pressure:

psia

Salinity: 7500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	Water cut mud 90% water 10% mud	0.590
120.00	Muddy water 50%water 50% mud	1.289
60.00	Slighty oil cut mud 90%mud 10%oil	0.842
0.00	Chlorides 46000	0.000

Total Length: 300.00 ft

Total Volume: 2.721 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

