



## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**33-13S-31W GOVE**

**KLAUS 1-33**

Start Date: 2011.04.16 @ 09:00:00

End Date: 2011.04.16 @ 17:03:00

Job Ticket #: 1018                      DST #: 3

Eagle Testers LLC.

P.O.Box 1011, Great Bend, KS 67530

620-617-7548

Printed: 2011.04.16 @ 09:38:04

GRAND MESA OPERATING  
KLAUS 1-33  
33-13S-31W GOVE  
DST # 3  
JOHNSON  
2011.04.16



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

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1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**33-13S-31W GOVE**

Job Ticket: 1018

**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.04.16 @ 09:00:00

## GENERAL INFORMATION:

Formation: **JOHSON**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:28:00

Time Test Ended: 17:03:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 49 MRT OAKLEY

**Interval: 4468.00 ft (KB) To 4510.00 ft (KB) (TVD)**

Reference Elevations: 2859.00 ft (KB)

Total Depth: 4510.00 ft (KB) (TVD)

2854.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6666**

**Inside**

Press @ RunDepth: 121.33 psig @ 4506.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.16

End Date:

2011.04.16

Last Calib.:

2011.04.16

Start Time: 09:00:00

End Time:

17:03:00

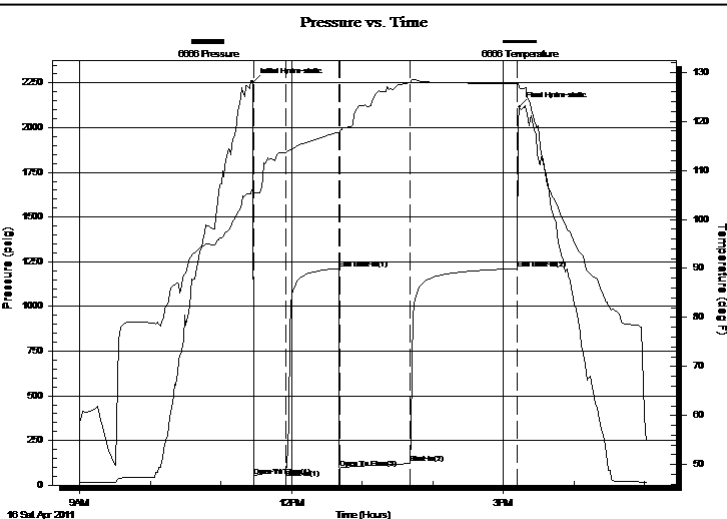
Time On Btm:

2011.04.16 @ 11:27:30

Time Off Btm:

2011.04.16 @ 15:13:30

**TEST COMMENT:** 30-INITIAL OPENING WEAK BLOW BUILT TO 3 INCHES INTO WATER  
45-INITIAL SHUT IN NO BLOW BACK  
60-FINAL OPENING WEAK BLOW BUILT TO 4 INCHES INTO WATER  
90-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2253.22	105.98	Initial Hydro-static
1	51.66	105.53	Open To Flow (1)
28	87.37	113.64	Shut-In(1)
73	1212.30	117.76	End Shut-In(1)
74	96.00	117.94	Open To Flow (2)
134	121.33	127.98	Shut-In(2)
225	1211.30	127.71	End Shut-In(2)
226	2118.09	126.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
160.00	MUD 100%MUD SPOT OF OIL	1.18

## Gas Rates

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



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Job Ticket: 1018

**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.04.16 @ 09:00:00

## GENERAL INFORMATION:

Formation: **JOHSON**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:28:00

Time Test Ended: 17:03:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 49 MRT OAKLEY

**Interval: 4468.00 ft (KB) To 4510.00 ft (KB) (TVD)**

Reference Elevations: 2859.00 ft (KB)

Total Depth: 4510.00 ft (KB) (TVD)

2854.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6663 Outside**

Press @ RunDepth: 1213.02 psig @ 4507.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.16

End Date: 2011.04.16

Last Calib.: 2011.04.16

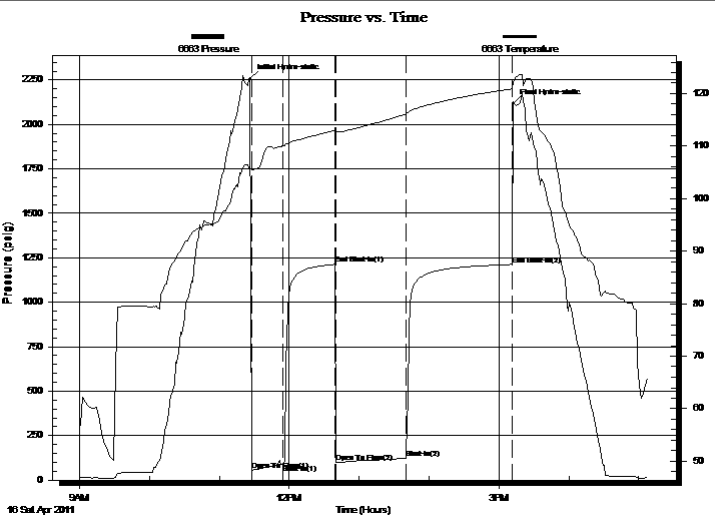
Start Time: 09:00:00

End Time: 17:07:30

Time On Btm: 2011.04.16 @ 11:26:30

Time Off Btm: 2011.04.16 @ 15:12:30

**TEST COMMENT:** 30-INITIAL OPENING WEAK BLOW BUILT TO 3 INCHES INTO WATER  
45-INITIAL SHUT IN NO BLOW BACK  
60-FINAL OPENING WEAK BLOW BUILT TO 4 INCHES INTO WATER  
90-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2255.56	105.95	Initial Hydro-static
1	52.92	105.47	Open To Flow (1)
28	88.86	109.97	Shut-In(1)
73	1213.42	113.02	End Shut-In(1)
74	97.71	112.63	Open To Flow (2)
134	122.64	116.11	Shut-In(2)
226	1213.02	120.90	End Shut-In(2)
226	2117.89	122.25	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
160.00	MUD 100%MUD SPOT OF OIL	1.18

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**KLAUS 1-33**

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**33-13S-31W GOVE**

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**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.04.16 @ 09:00:00

## Tool Information

Drill Pipe:	Length: 4322.00 ft	Diameter: 3.88 inches	Volume: 63.21 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 63.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4468.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	71.00 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			4444.00	
Hydraulic tool	5.00			4449.00	
Change over sub	1.00			4450.00	
Jars	6.00			4456.00	
Safety Joint	2.00			4458.00	
Packer	5.00			4463.00	29.00 Bottom Of Top Packer
Packer	5.00			4468.00	
Anchor	37.00			4505.00	
Recorder	1.00	6666	Inside	4506.00	
Recorder	1.00	6663	Outside	4507.00	
Bullnose	3.00			4510.00	42.00 Bottom Packers & Anchor

**Total Tool Length: 71.00**



# DRILL STEM TEST REPORT

FLUID SUMMARY

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Job Ticket: 1018

**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.04.16 @ 09:00:00

## 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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
160.00	MUD 100%MUD SPOT OF OIL	1.175

Total Length: 160.00 ft      Total Volume: 1.175 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

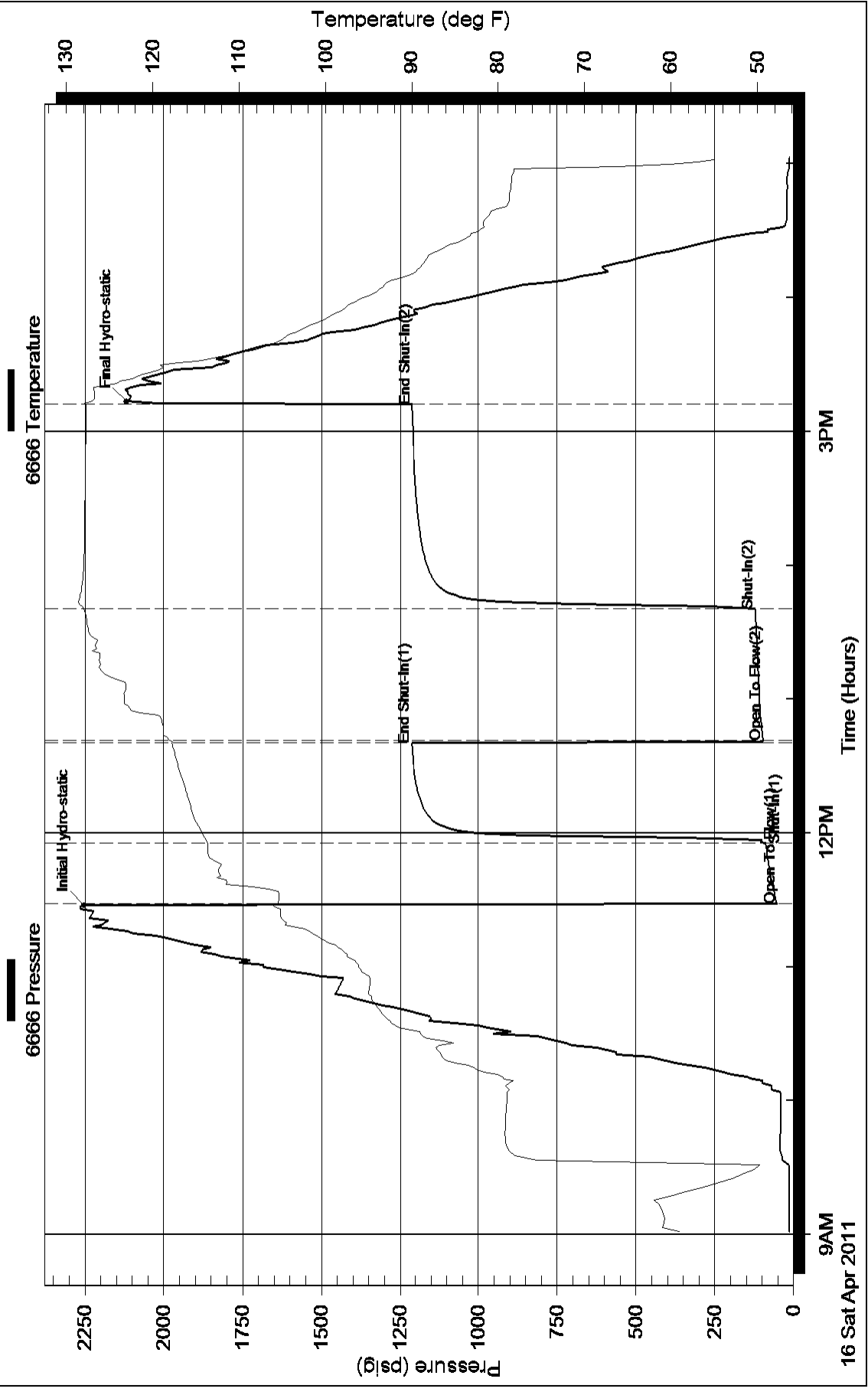
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



### Pressure vs. Time

