



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: 2011.04.13 @ 01:00:00

End Date: 2011.04.13 @ 08:21:30

Job Ticket #: 1017 DST #: 2

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.04.13 @ 02:46:23

GRAND MESA OPERATING
KLAUS 1-33
33-13S-31W GOVE
DST # 2
LKC-D-
2011.04.13



DRILL STEM TEST REPORT

GRAND MESA OPERATING

KLAUS 1-33

1700 N WATERFRONT PKWY BLDG 600
WICHITA KS 67206

33-13S-31W GOVE

Job Ticket: 1017

DST#: 2

ATTN: MAC ARMSTRONG

Test Start: 2011.04.13 @ 01:00:00

GENERAL INFORMATION:

Formation: **LKC -D-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:46:30

Time Test Ended: 08:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 49 MRT OAKLEY

Interval: 3967.00 ft (KB) To 3975.00 ft (KB) (TVD)

Reference Elevations: 2859.00 ft (KB)

Total Depth: 3975.00 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 @ Run Depth: 150.38 psig @ 3971.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.13

End Date:

2011.04.13

Last Calib.:

2011.04.13

Start Time: 01:01:00

End Time:

08:21:30

Time On Btm:

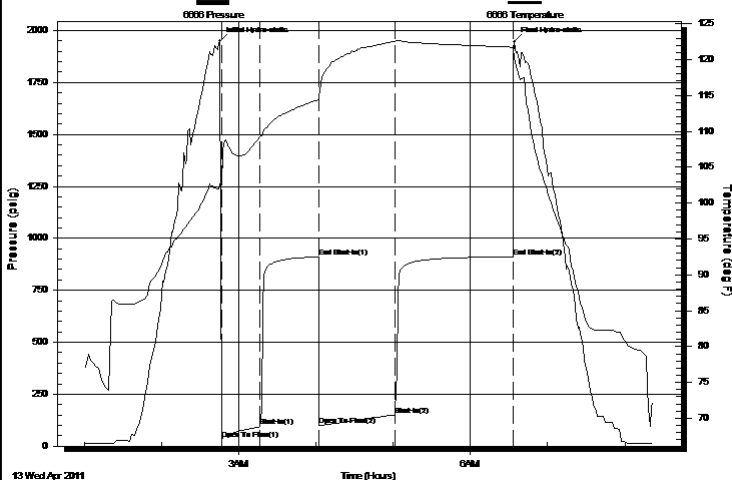
2011.04.13 @ 02:45:30

Time Off Btm:

2011.04.13 @ 06:34:00

TEST COMMENT: 30-INITIAL OPENING WEAK BLOW BUILT TO 8 INCHES INTO WATER
45-INITIAL SHUT IN WEAK SURFACE BLOW
60-FINAL OPENING WEAK BLOW BOTTOM BUCKET IN 31 MINS
90-FINAL SHUT IN NO BLOW BACK

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1949.00	102.64	Initial Hydro-static
1	33.74	102.58	Open To Flow (1)
31	93.50	109.21	Shut-In(1)
77	91.46	114.41	End Shut-In(1)
77	98.82	115.02	Open To Flow (2)
136	150.38	122.45	Shut-In(2)
228	912.22	121.73	End Shut-In(2)
229	1945.94	120.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	GAS IN PIPE 100%GAS	1.75
155.00	GASSY OIL 20%GAS80%OIL	2.27
180.00	MUDDY WATER GOOD SHOW OF OIL	2.63
0.00	10%OIL20%MUD70%WATER	0.00

Gas Rates

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



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Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 49 MRT OAKLEY

Interval: 3967.00 ft (KB) To 3975.00 ft (KB) (TVD)

Total Depth: 3975.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2859.00 ft (KB)

2854.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6663

Outside

Press @ Run Depth: 913.98 psig @ 3972.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.04.13

End Date:

2011.04.13

Last Calib.:

2011.04.13

Start Time: 01:01:00

End Time:

08:21:30

Time On Btm:

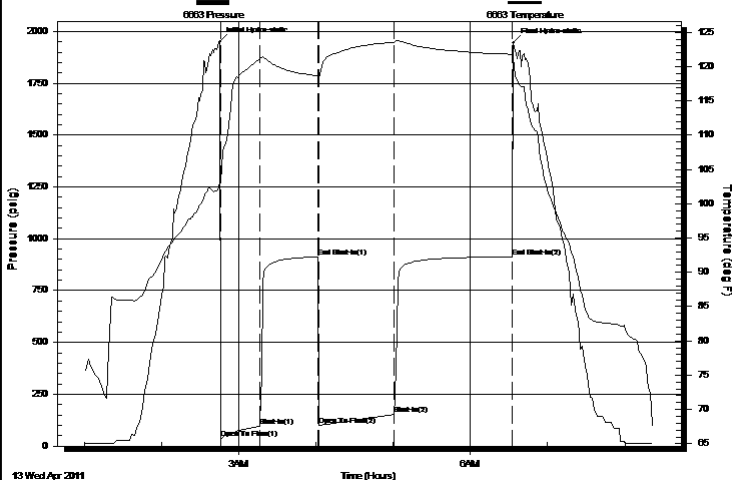
2011.04.13 @ 02:45:30

Time Off Btm:

2011.04.13 @ 06:33:30

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60-FINAL OPENING WEAK BLOW BOTTOM BUCKET IN 31 MINS
90-FINAL SHUT IN NO BLOW BACK

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1949.65	103.25	Initial Hydro-static
1	35.49	103.13	Open To Flow (1)
31	94.89	121.03	Shut-In(1)
76	912.94	118.65	End Shut-In(1)
77	100.53	118.35	Open To Flow (2)
135	151.89	123.59	Shut-In(2)
227	913.98	121.81	End Shut-In(2)
228	1943.46	121.29	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	GAS IN PIPE 100%GAS	1.75
155.00	GASSY OIL 20%GAS80%OIL	2.27
180.00	MUDDY WATER GOOD SHOW OF OIL	2.63
0.00	10%OIL20%MUD70%WATER	0.00

Gas Rates

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



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TOOL DIAGRAM

GRAND MESA OPERATING

KLAUS 1-33

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WICHITA KS 67206

33-13S-31W GOVE

Job Ticket: 1017

DST#: 2

ATTN: MAC ARMSTRONG

Test Start: 2011.04.13 @ 01:00:00

Tool Information

Drill Pipe:	Length: 3821.00 ft	Diameter: 3.88 inches	Volume: 55.88 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: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 55.88 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial	36000.00 lb
Depth to Top Packer:	3967.00 ft			Final	38000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	8.00 ft				
Tool Length:	37.00 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			3943.00	
Hydraulic tool	5.00			3948.00	
Change over sub	1.00			3949.00	
Jars	6.00			3955.00	
Safety Joint	2.00			3957.00	
Packer	5.00			3962.00	29.00 Bottom Of Top Packer
Packer	5.00			3967.00	
Anchor	3.00			3970.00	
Recorder	1.00	6666	Inside	3971.00	
Recorder	1.00	6663	Outside	3972.00	
Bullnose	3.00			3975.00	8.00 Bottom Packers & Anchor

Total Tool Length: 37.00



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FLUID SUMMARY

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Test Start: 2011.04.13 @ 01:00:00

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: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
240.00	GAS IN PIPE 100%GAS	1.755
155.00	GASSY OIL 20%GAS80%OIL	2.267
180.00	MUDDY WATER GOOD SHOW OF OIL	2.632
0.00	10%OIL20%MUD70%WATER	0.000

Total Length: 575.00 ft Total Volume: 6.654 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

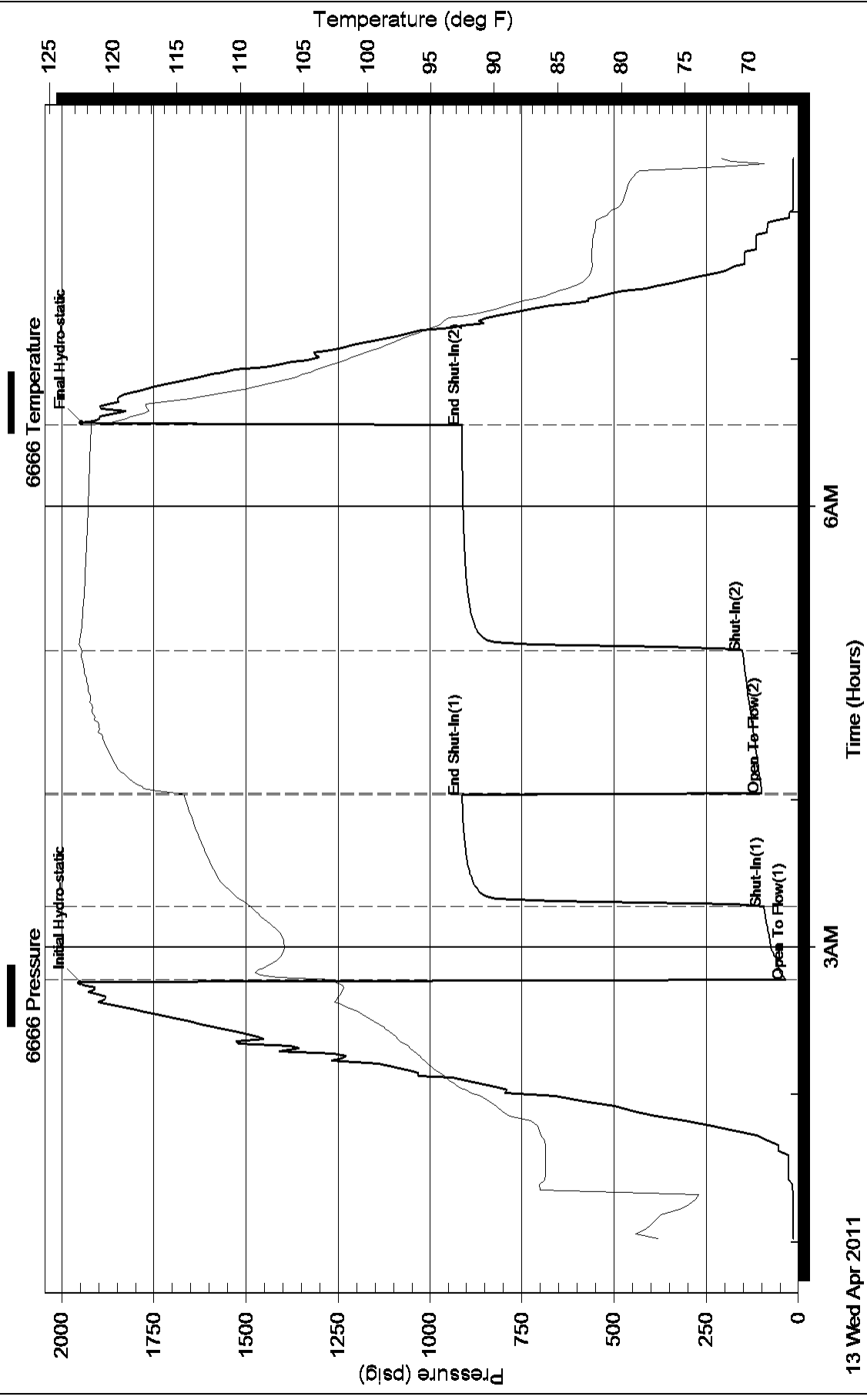
Serial #:

Laboratory Name:

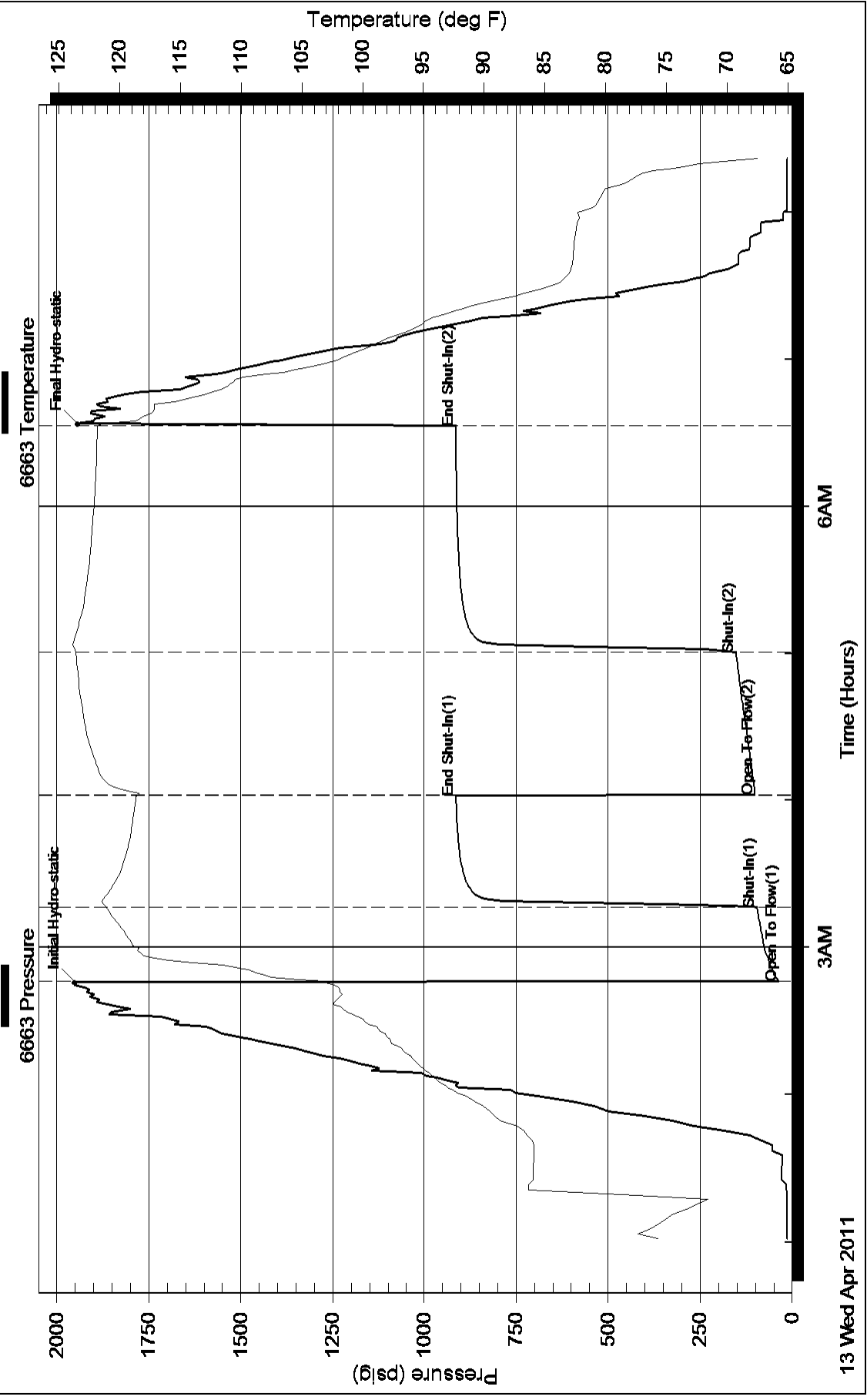
Laboratory Location:

Recovery Comments: RECOVERY CHLORIDES 41,000PPM
GRAVITY OF OIL 34

Pressure vs. Time



Pressure vs. Time



13 Wed Apr 2011

6AM

Time (Hours)

3AM