



## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**9-14S-31W GOVE**

**HUND 1-9**

Start Date: 2011.02.21 @ 17:00:00

End Date: 2011.02.21 @ 22:57:00

Job Ticket #: 1069                      DST #: 1

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.02.21 @ 18:02:34

GRAND MESA OPERATING  
HUND 1-9  
9-14S-31W GOVE  
DST # 1  
LKC-A-  
2011.02.21



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1069

DST#: 1

ATTN: MAC ARMSTRONG

Test Start: 2011.02.21 @ 17:00:00

## GENERAL INFORMATION:

Formation: **LKC -A-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:20:00

Time Test Ended: 22:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15

Interval: **3998.00 ft (KB) To 4020.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4020.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6666** Outside

Press @ Run Depth: 80.41 psig @ 4017.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.21

End Date:

2011.02.21

Last Calib.:

2011.02.21

Start Time: 17:00:00

End Time:

22:57:00

Time On Btm:

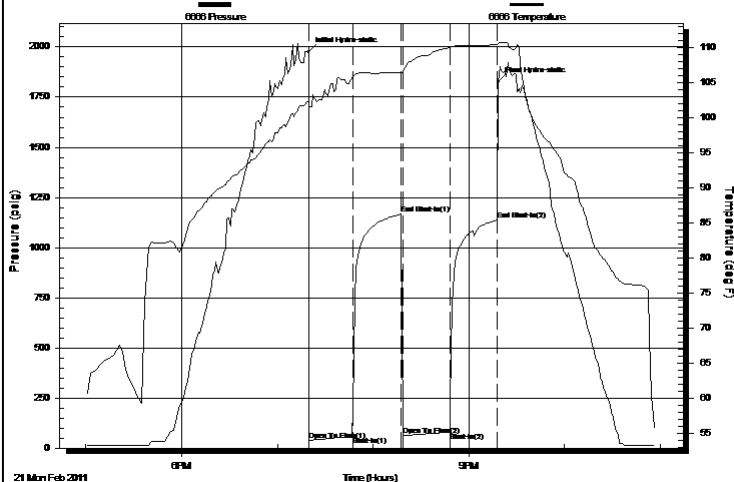
2011.02.21 @ 19:19:30

Time Off Btm:

2011.02.21 @ 21:18:30

TEST COMMENT: 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1975.36         | 102.25       | Initial Hydro-static |
| 1           | 39.01           | 101.86       | Open To Flow (1)     |
| 28          | 60.40           | 105.69       | Shut-In(1)           |
| 58          | 1165.79         | 106.52       | End Shut-In(1)       |
| 59          | 62.19           | 106.55       | Open To Flow (2)     |
| 89          | 80.41           | 110.08       | Shut-In(2)           |
| 118         | 1136.06         | 110.45       | End Shut-In(2)       |
| 119         | 1826.41         | 110.67       | Final Hydro-static   |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 60.00       | MUD 100%MUD | 0.30         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

Gas Rates

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



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

ATTN: MAC ARMSTRONG

Job Ticket: 1069

DST#: 1

Test Start: 2011.02.21 @ 17:00:00

## GENERAL INFORMATION:

Formation: **LKC -A-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:20:00

Time Test Ended: 22:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15

Interval: **3998.00 ft (KB) To 4020.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4020.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6651**

Inside

Press @ Run Depth: 1137.54 psig @ 4016.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.21

End Date:

2011.02.21

Last Calib.:

2011.02.21

Start Time: 17:00:00

End Time:

23:01:30

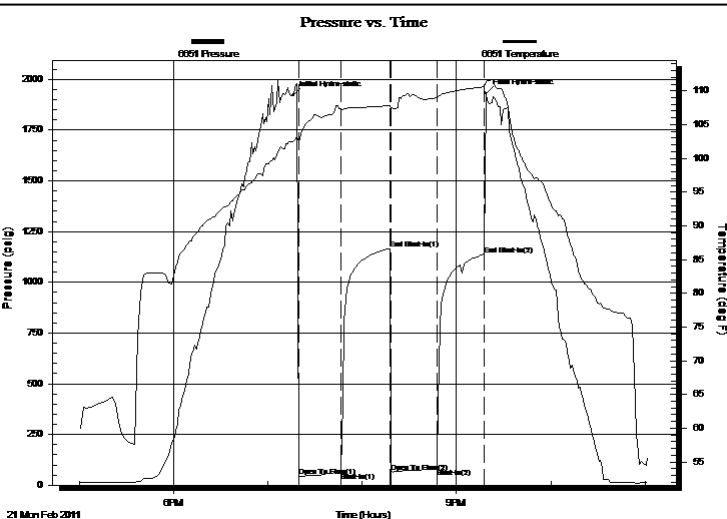
Time On Btm:

2011.02.21 @ 19:16:00

Time Off Btm:

2011.02.21 @ 21:18:30

TEST COMMENT: 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1922.14         | 102.52       | Initial Hydro-static |
| 4           | 43.41           | 102.49       | Open To Flow (1)     |
| 31          | 62.32           | 107.28       | Shut-In(1)           |
| 62          | 1166.60         | 107.79       | End Shut-In(1)       |
| 63          | 65.95           | 107.46       | Open To Flow (2)     |
| 92          | 82.79           | 108.97       | Shut-In(2)           |
| 122         | 1137.54         | 110.60       | End Shut-In(2)       |
| 123         | 1932.63         | 111.39       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 60.00       | MUD 100%MUD | 0.30         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1069

**DST#: 1**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.21 @ 17:00:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3852.00 ft | Diameter: 3.88 inches | Volume: 56.33 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:  | 50000.00 lb |
|                           |                    |                       | <u>Total Volume: 56.92 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 2.75 ft            |                       |                                | String Weight: Initial | 48000.00 lb |
| Depth to Top Packer:      | 3998.00 ft         |                       |                                | Final                  | 48000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 22.00 ft           |                       |                                |                        |             |
| Tool Length:              | 50.75 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                 |       |      |         |         |                               |
|-----------------|-------|------|---------|---------|-------------------------------|
| Shut-in tool    | 5.00  |      |         | 3974.25 |                               |
| Hydraulic tool  | 5.00  |      |         | 3979.25 |                               |
| Change over sub | 0.75  |      |         | 3980.00 |                               |
| Jars            | 6.00  |      |         | 3986.00 |                               |
| Safety Joint    | 2.00  |      |         | 3988.00 |                               |
| Packer          | 5.00  |      |         | 3993.00 | 28.75 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3998.00 |                               |
| Anchor          | 17.00 |      |         | 4015.00 |                               |
| Recorder        | 1.00  | 6651 | Inside  | 4016.00 |                               |
| Recorder        | 1.00  | 6666 | Outside | 4017.00 |                               |
| Bull plug       | 3.00  |      |         | 4020.00 | 22.00 Bottom Packers & Anchor |

**Total Tool Length: 50.75**



# DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1069

DST#: 1

ATTN: MAC ARMSTRONG

Test Start: 2011.02.21 @ 17:00:00

## 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: 67.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 60.00        | MUD 100%MUD | 0.295         |

Total Length: 60.00 ft      Total Volume: 0.295 bbl

Num Fluid Samples: 0

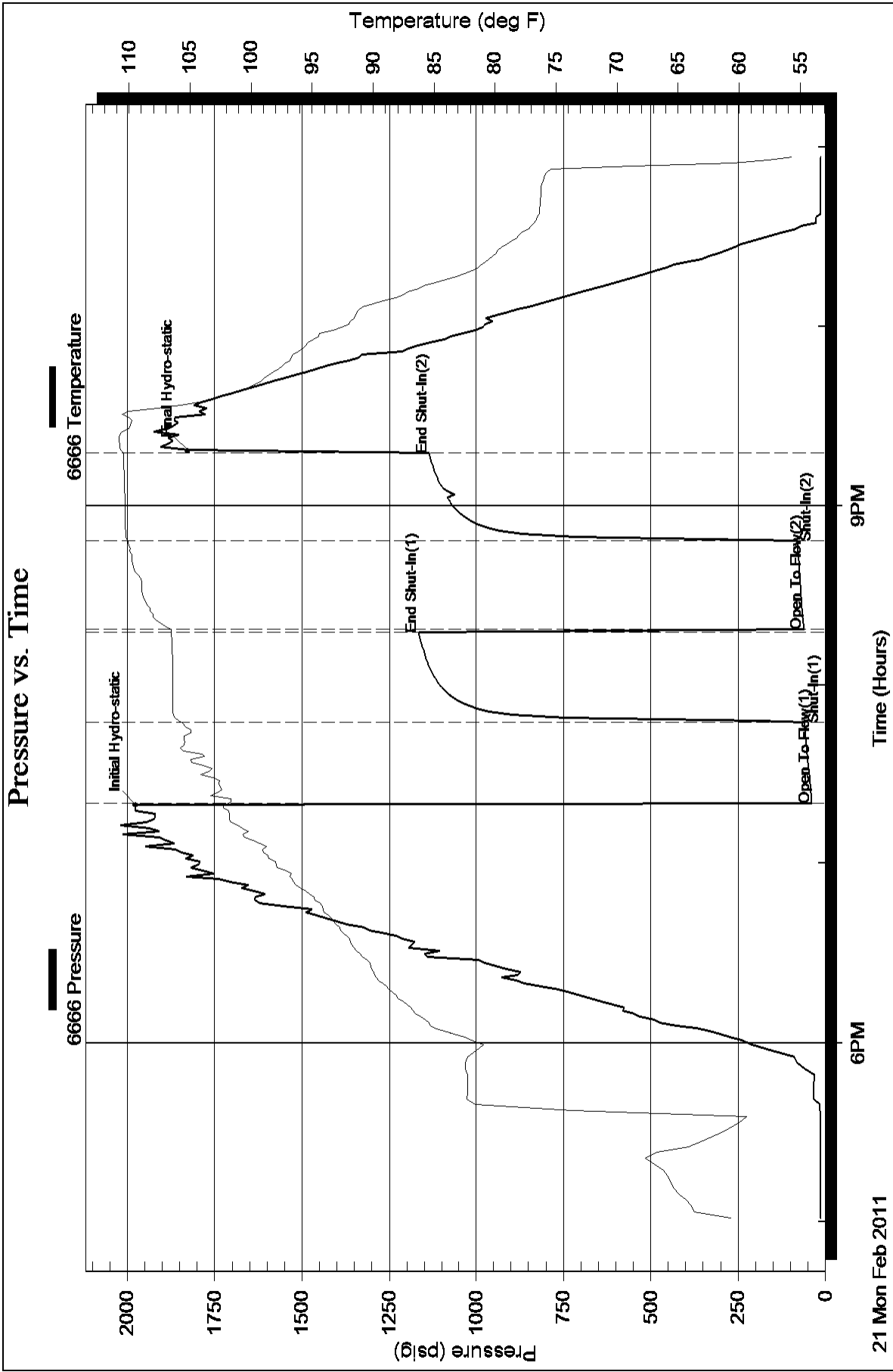
Num Gas Bombs: 0

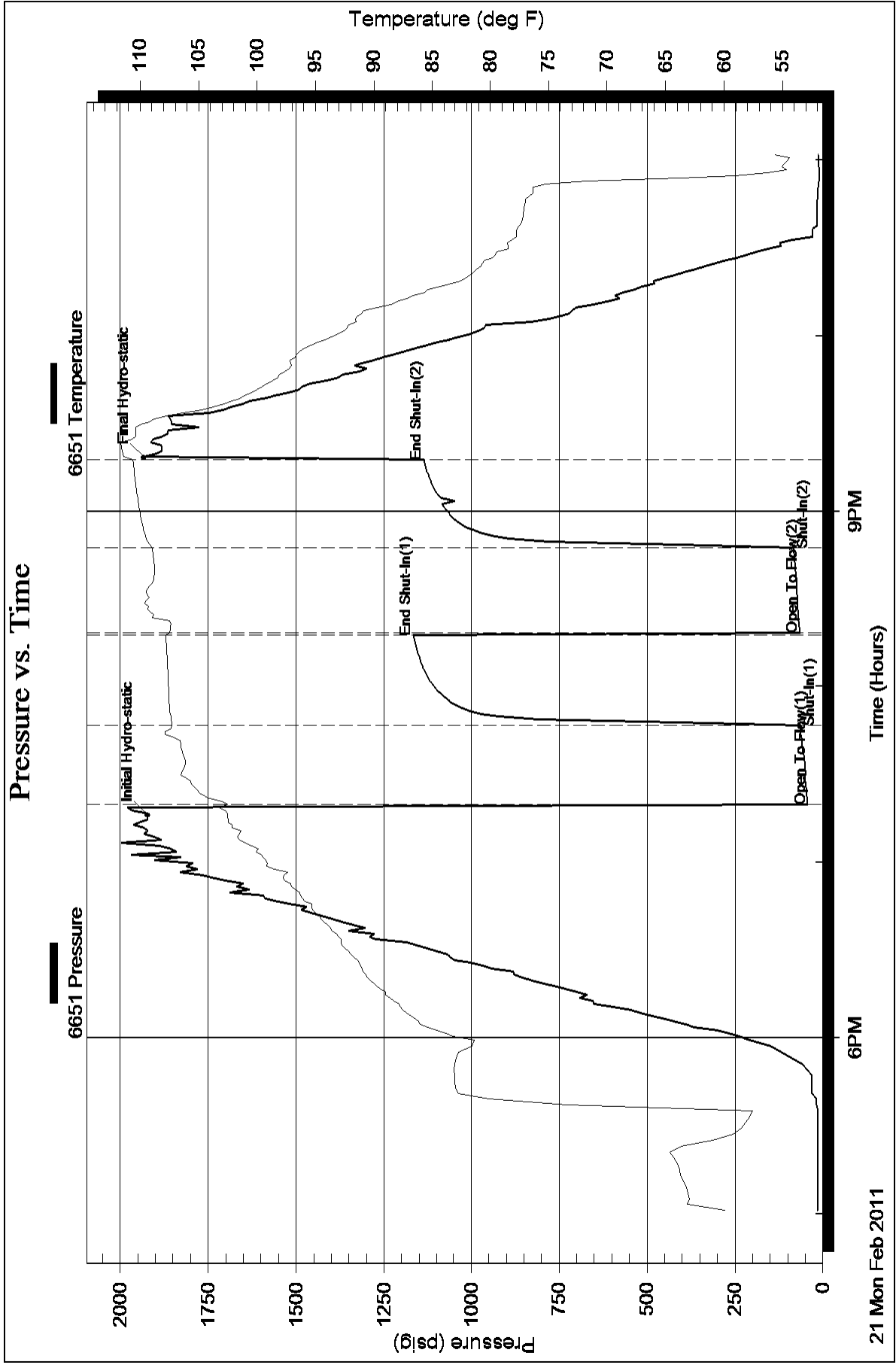
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**9-14S-31W GOVE**

**HUND 1-9**

Start Date: 2011.02.22 @ 10:00:00

End Date: 2011.02.22 @ 16:54:00

Job Ticket #: 1070                      DST #: 2

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.02.22 @ 10:27:59

GRAND MESA OPERATING  
HUND 1-9  
9-14S-31W GOVE  
DST # 2  
LKC-E-  
2011.02.22



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1070

DST#: 2

ATTN: MAC ARMSTRONG

Test Start: 2011.02.22 @ 10:00:00

## GENERAL INFORMATION:

Formation: **LKC-E-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:28:00

Time Test Ended: 16:54:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MILES RT OAKLE

Interval: **4068.00 ft (KB) To 4100.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4100.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6666**

Inside

Press @ RunDepth: 55.26 psig @ 4096.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.22

End Date:

2011.02.22

Last Calib.:

2011.02.22

Start Time: 10:00:00

End Time:

16:54:00

Time On Btm:

2011.02.22 @ 12:26:30

Time Off Btm:

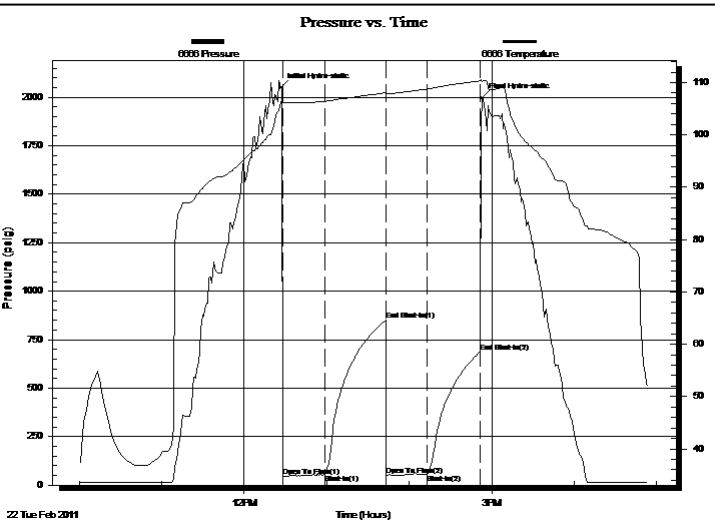
2011.02.22 @ 14:53:00

TEST COMMENT: 30-INITIAL OPENING WEAK BLOW BUILT TO 2 INCHES INTO WATER

45-INITIAL SHUT IN NO BLOW BACK

30-FINAL OPENING SURFACE BLOW

30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2048.15         | 106.19       | Initial Hydro-static |
| 2           | 44.77           | 106.16       | Open To Flow (1)     |
| 32          | 53.56           | 106.40       | Shut-In(1)           |
| 77          | 849.58          | 108.06       | End Shut-In(1)       |
| 77          | 51.55           | 107.85       | Open To Flow (2)     |
| 107         | 55.26           | 108.77       | Shut-In(2)           |
| 145         | 685.88          | 110.31       | End Shut-In(2)       |
| 147         | 1996.18         | 110.26       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 20.00       | MUD 100#MUD | 0.10         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1070

**DST#: 2**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.22 @ 10:00:00

## GENERAL INFORMATION:

Formation: **LKC-E-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:28:00

Time Test Ended: 16:54:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MILES RT OAKLE

**Interval: 4068.00 ft (KB) To 4100.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4100.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 6651**

**Outside**

Press @ RunDepth: 684.85 psig @ 4097.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.22

End Date:

2011.02.22

Last Calib.:

2011.02.22

Start Time: 10:00:00

End Time:

17:01:00

Time On Btm:

2011.02.22 @ 12:24:30

Time Off Btm:

2011.02.22 @ 14:52:30

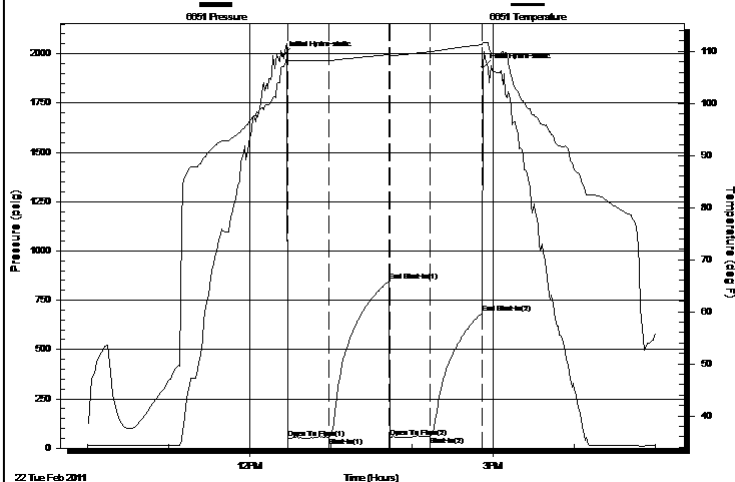
**TEST COMMENT:** 30-INITIAL OPENING WEAK BLOW BUILT TO 2 INCHES INTO WATER

45-INITIAL SHUT IN NO BLOW BACK

30-FINAL OPENING SURFACE BLOW

30-FINAL SHUT IN NO BLOW BACK

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1989.77         | 107.08       | Initial Hydro-static |
| 4           | 49.02           | 108.35       | Open To Flow (1)     |
| 34          | 52.64           | 108.25       | Shut-In(1)           |
| 79          | 848.63          | 109.42       | End Shut-In(1)       |
| 80          | 55.57           | 109.20       | Open To Flow (2)     |
| 109         | 57.82           | 109.93       | Shut-In(2)           |
| 148         | 684.85          | 111.29       | End Shut-In(2)       |
| 148         | 1931.10         | 111.68       | Final Hydro-static   |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 20.00       | MUD 100#MUD | 0.10         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1070

**DST#: 2**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.22 @ 10:00:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3922.00 ft | Diameter: 3.88 inches | Volume: 57.36 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:  | 55000.00 lb |
|                           |                    |                       | <u>Total Volume: 57.95 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 2.75 ft            |                       |                                | String Weight: Initial | 48000.00 lb |
| Depth to Top Packer:      | 4068.00 ft         |                       |                                | Final                  | 48000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 32.00 ft           |                       |                                |                        |             |
| Tool Length:              | 60.75 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                 |       |      |         |         |                               |
|-----------------|-------|------|---------|---------|-------------------------------|
| Shut-in tool    | 5.00  |      |         | 4044.25 |                               |
| Hydraulic tool  | 5.00  |      |         | 4049.25 |                               |
| Change over sub | 0.75  |      |         | 4050.00 |                               |
| Jars            | 6.00  |      |         | 4056.00 |                               |
| Safety Joint    | 2.00  |      |         | 4058.00 |                               |
| Packer          | 5.00  |      |         | 4063.00 | 28.75 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 4068.00 |                               |
| Anchor          | 27.00 |      |         | 4095.00 |                               |
| Recorder        | 1.00  | 6666 | Inside  | 4096.00 |                               |
| Recorder        | 1.00  | 6651 | Outside | 4097.00 |                               |
| Bull plug       | 3.00  |      |         | 4100.00 | 32.00 Bottom Packers & Anchor |

**Total Tool Length: 60.75**



# DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1070

DST#: 2

ATTN: MAC ARMSTRONG

Test Start: 2011.02.22 @ 10:00:00

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1900.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbbl |
|--------------|-------------|----------------|
| 20.00        | MUD 100#MUD | 0.098          |

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

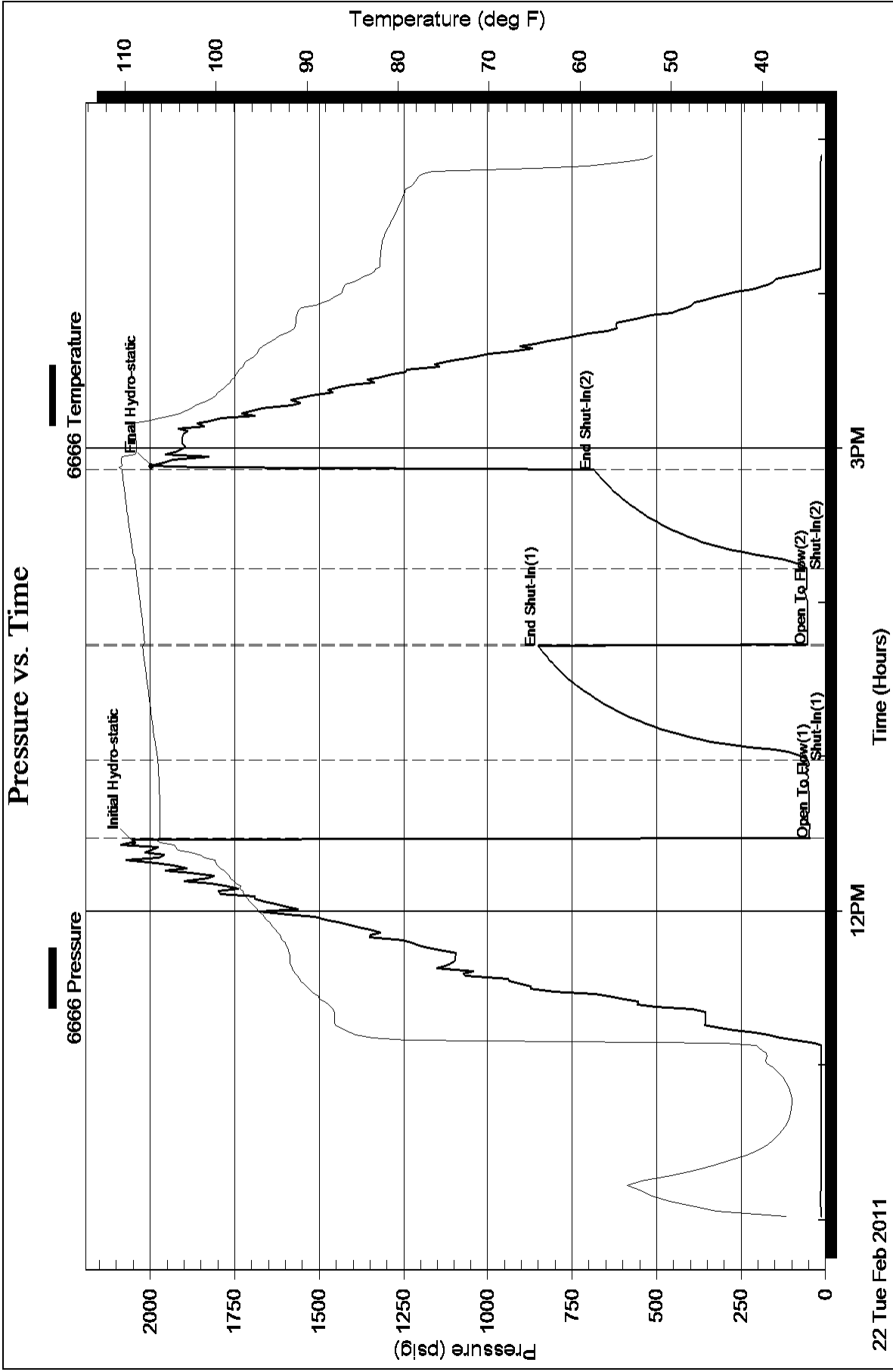
Num Gas Bombs: 0

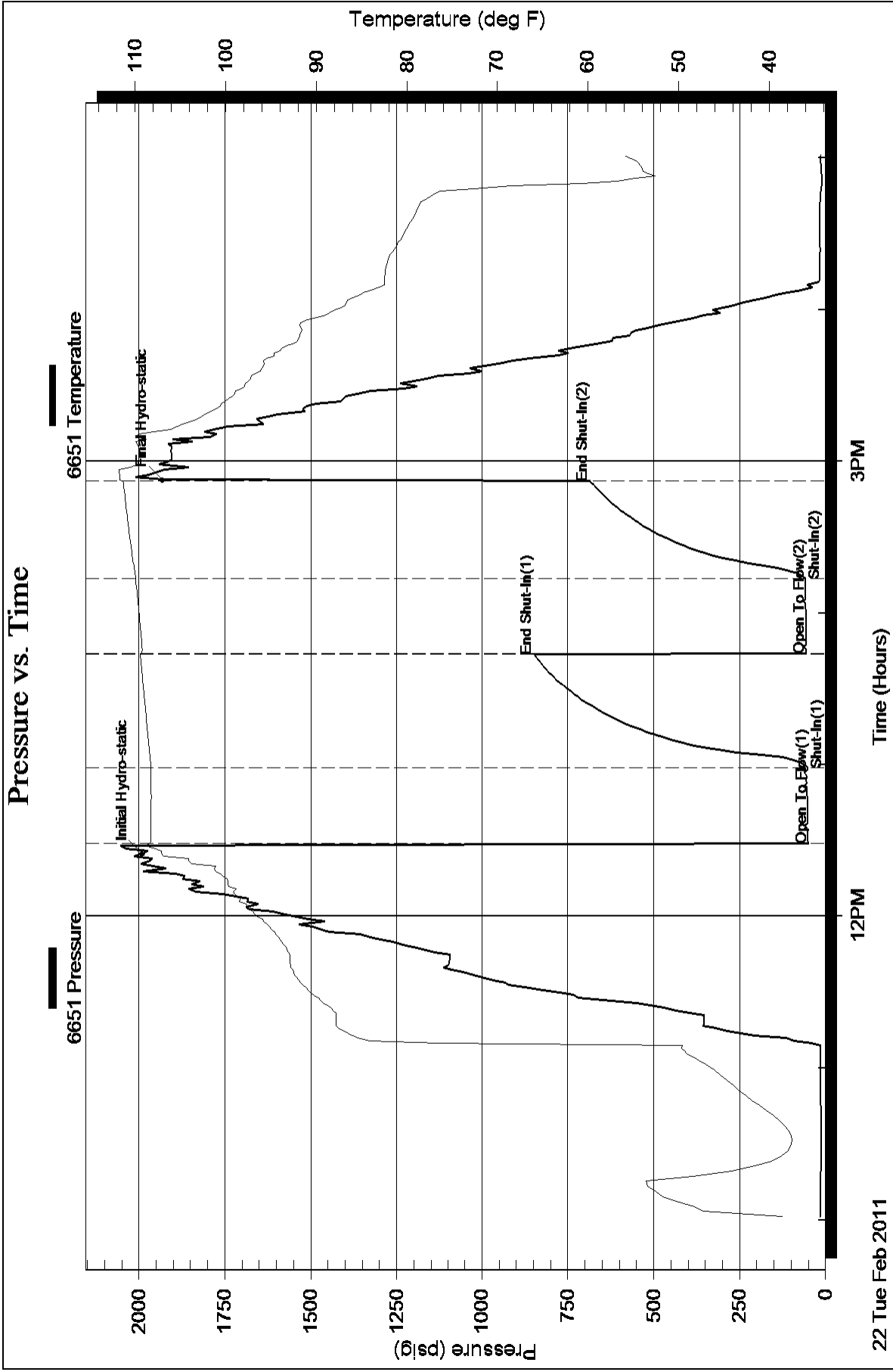
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**9-14S-31W GOVE**

**HUND 1-9**

Start Date: 2011.02.23 @ 05:00:00

End Date: 2011.02.23 @ 11:20:30

Job Ticket #: 1071                      DST #: 3

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.02.23 @ 05:25:48

GRAND MESA OPERATING  
HUND 1-9  
9-14S-31W GOVE  
DST # 3  
LKC-H-  
2011.02.23



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1071

**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.23 @ 05:00:00

## GENERAL INFORMATION:

Formation: **LKC -H-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:01:30

Time Test Ended: 11:20:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MILES RT OAKLE

**Interval: 4156.00 ft (KB) To 4194.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4194.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 6651**

**Inside**

Press @ Run Depth: 82.53 psig @ 4190.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.23

End Date:

2011.02.23

Last Calib.:

2011.02.23

Start Time: 05:00:00

End Time:

11:20:30

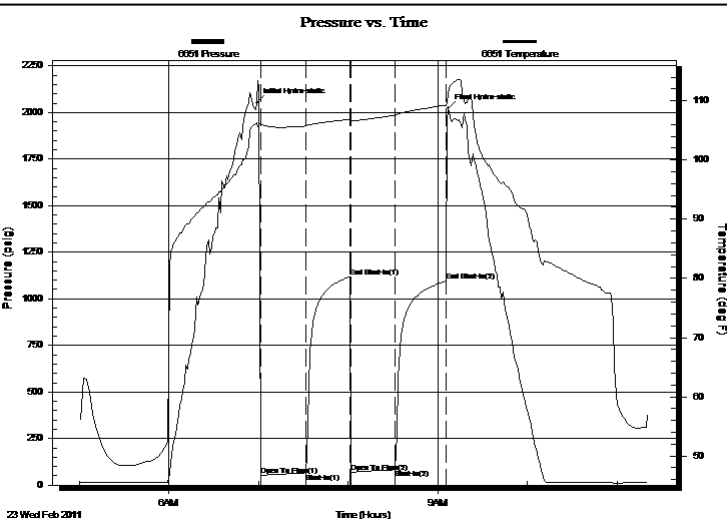
Time On Btm:

2011.02.23 @ 06:59:00

Time Off Btm:

2011.02.23 @ 09:07:00

**TEST COMMENT:** 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2052.42         | 106.25       | Initial Hydro-static |
| 3           | 52.73           | 105.92       | Open To Flow (1)     |
| 33          | 66.02           | 105.71       | Shut-In(1)           |
| 63          | 1118.94         | 106.91       | End Shut-In(1)       |
| 63          | 71.09           | 106.52       | Open To Flow (2)     |
| 93          | 82.53           | 107.56       | Shut-In(2)           |
| 127         | 1094.46         | 109.25       | End Shut-In(2)       |
| 128         | 2022.63         | 111.17       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 65.00       | MUD 100%MUD | 0.32         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1071

DST#: 3

ATTN: MAC ARMSTRONG

Test Start: 2011.02.23 @ 05:00:00

## GENERAL INFORMATION:

Formation: **LKC -H-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:01:30

Time Test Ended: 11:20:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MILES RT OAKLE

Interval: **4156.00 ft (KB) To 4194.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4194.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6666**

Outside

Press @ Run Depth: 1093.31 psig @ 4191.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.23

End Date:

2011.02.23

Last Calib.:

2011.02.23

Start Time: 05:00:00

End Time:

11:28:00

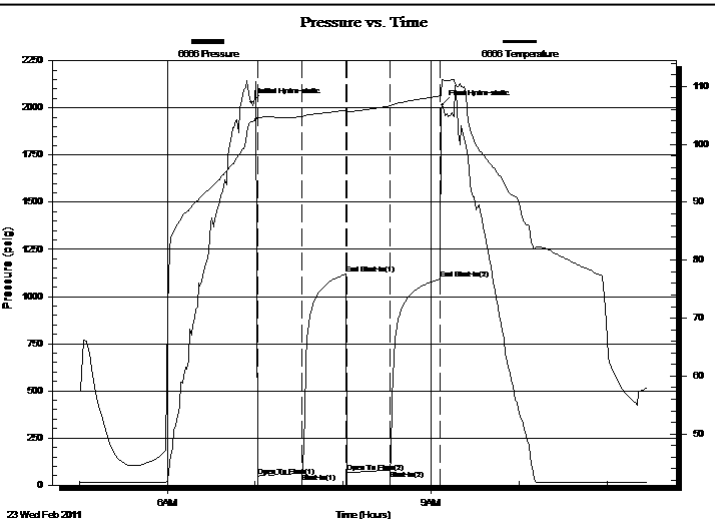
Time On Btm:

2011.02.23 @ 06:57:30

Time Off Btm:

2011.02.23 @ 09:07:30

TEST COMMENT: 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2028.70         | 103.85       | Initial Hydro-static |
| 4           | 47.30           | 104.25       | Open To Flow (1)     |
| 35          | 63.17           | 104.72       | Shut-In(1)           |
| 65          | 1118.73         | 105.86       | End Shut-In(1)       |
| 65          | 66.35           | 105.64       | Open To Flow (2)     |
| 95          | 79.92           | 106.60       | Shut-In(2)           |
| 129         | 1093.31         | 108.34       | End Shut-In(2)       |
| 130         | 2016.18         | 111.18       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 65.00       | MUD 100%MUD | 0.32         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1071

**DST#: 3**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.23 @ 05:00:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 4010.00 ft | Diameter: 3.88 inches | Volume: 58.64 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:  | 55000.00 lb |
|                           |                    |                       | <u>Total Volume: 59.23 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 2.75 ft            |                       |                                | String Weight: Initial | 48000.00 lb |
| Depth to Top Packer:      | 4156.00 ft         |                       |                                | Final                  | 48000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 38.00 ft           |                       |                                |                        |             |
| Tool Length:              | 66.75 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter:             | 6.75 inches                    |                        |             |
| Tool Comments:            |                    |                       |                                |                        |             |

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                 |       |      |         |         |                               |
|-----------------|-------|------|---------|---------|-------------------------------|
| Shut-in tool    | 5.00  |      |         | 4132.25 |                               |
| Hydraulic tool  | 5.00  |      |         | 4137.25 |                               |
| Change over sub | 0.75  |      |         | 4138.00 |                               |
| Jars            | 6.00  |      |         | 4144.00 |                               |
| Safety Joint    | 2.00  |      |         | 4146.00 |                               |
| Packer          | 5.00  |      |         | 4151.00 | 28.75 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 4156.00 |                               |
| Anchor          | 33.00 |      |         | 4189.00 |                               |
| Recorder        | 1.00  | 6651 | Inside  | 4190.00 |                               |
| Recorder        | 1.00  | 6666 | Outside | 4191.00 |                               |
| Bull plug       | 3.00  |      |         | 4194.00 | 38.00 Bottom Packers & Anchor |

**Total Tool Length: 66.75**



# DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1071

DST#: 3

ATTN: MAC ARMSTRONG

Test Start: 2011.02.23 @ 05:00:00

## 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 65.00        | MUD 100%MUD | 0.320         |

Total Length: 65.00 ft      Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

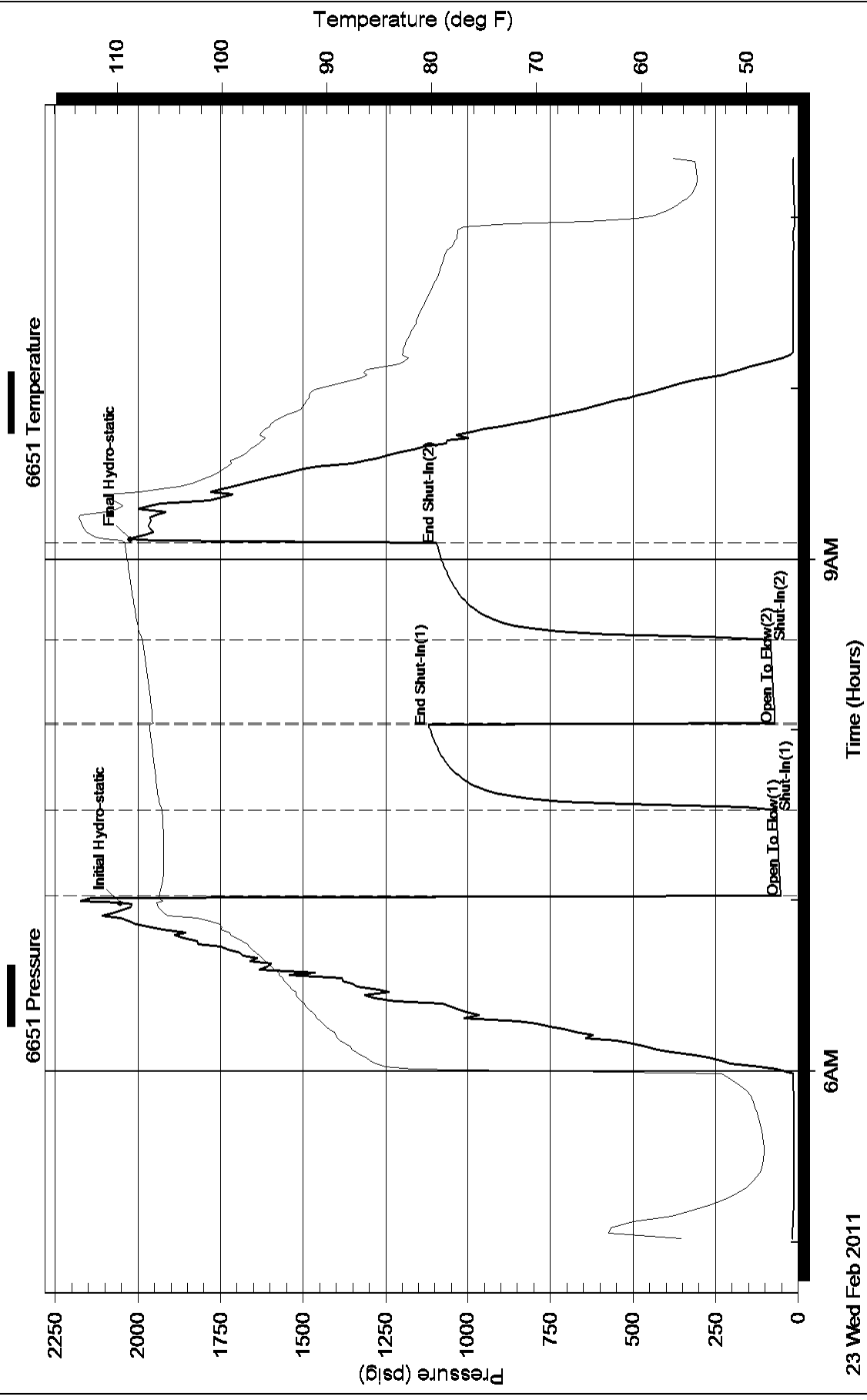
Serial #:

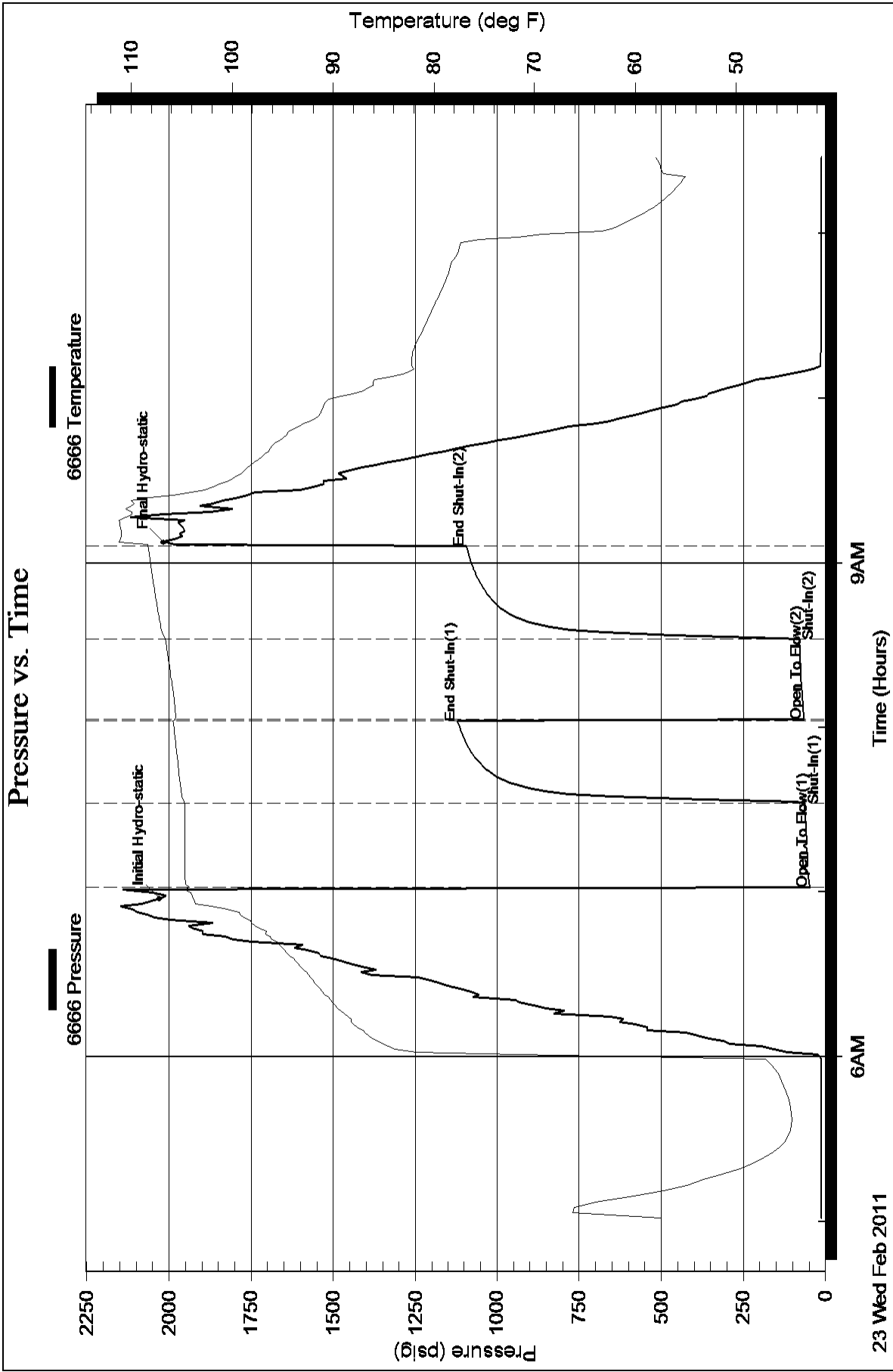
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**9-14S-31W GOVE**

**HUND 1-9**

Start Date: 2011.02.24 @ 08:00:00

End Date: 2011.02.24 @ 14:21:30

Job Ticket #: 1072                      DST #: 4

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.02.24 @ 08:27:46

GRAND MESA OPERATING  
HUND 1-9  
9-14S-31W GOVE  
DST # 4  
LKC-L-  
2011.02.24



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1072

DST#: 4

ATTN: MAC ARMSTRONG

Test Start: 2011.02.24 @ 08:00:00

## GENERAL INFORMATION:

Formation: **LKC -L-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:15:00

Time Test Ended: 14:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MRT OAKLEY KS

Interval: **4290.00 ft (KB) To 4330.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4330.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6666** Outside

Press @ Run Depth: 47.01 psig @ 4327.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.24

End Date:

2011.02.24

Last Calib.: 2011.02.24

Start Time: 08:00:00

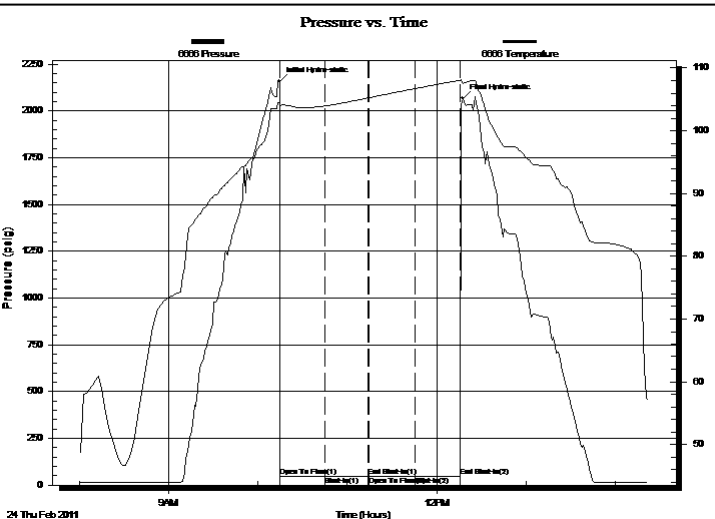
End Time:

14:21:30

Time On Btm: 2011.02.24 @ 10:14:30

Time Off Btm: 2011.02.24 @ 12:17:30

TEST COMMENT: 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING WEAK SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2158.63         | 104.38       | Initial Hydro-static |
| 1           | 45.17           | 103.98       | Open To Flow (1)     |
| 31          | 45.57           | 103.96       | Shut-In(1)           |
| 60          | 45.84           | 105.23       | End Shut-In(1)       |
| 60          | 45.57           | 105.26       | Open To Flow (2)     |
| 91          | 47.01           | 106.73       | Shut-In(2)           |
| 122         | 47.18           | 108.03       | End Shut-In(2)       |
| 123         | 2067.64         | 107.54       | Final Hydro-static   |

## Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 5.00        | MUD CUT OIL 30%M70%OIL | 0.02         |
|             |                        |              |
|             |                        |              |
|             |                        |              |
|             |                        |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1072

DST#: 4

ATTN: MAC ARMSTRONG

Test Start: 2011.02.24 @ 08:00:00

## GENERAL INFORMATION:

Formation: **LKC -L-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:15:00

Time Test Ended: 14:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MRT OAKLEY KS

Interval: **4290.00 ft (KB) To 4330.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4330.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: **6651**

Inside

Press @ Run Depth: 51.82 psig @ 4326.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2011.02.24

End Date:

2011.02.24

Last Calib.:

2011.02.24

Start Time: 08:00:00

End Time:

14:29:30

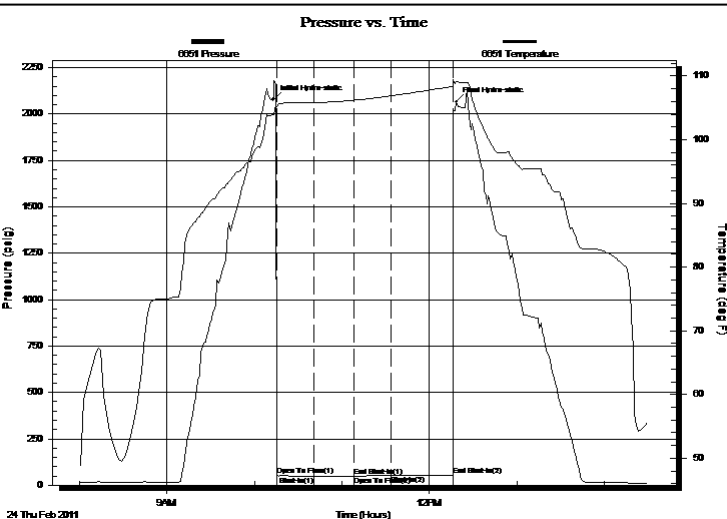
Time On Btm:

2011.02.24 @ 10:13:00

Time Off Btm:

2011.02.24 @ 12:18:30

TEST COMMENT: 30-INITIAL OPENING SURFACE BLOW  
30-INITIAL SHUT IN NO BLOW BACK  
30-FINAL OPENING WEAK SURFACE BLOW  
30-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2078.07         | 103.92       | Initial Hydro-static |
| 3           | 50.25           | 105.23       | Open To Flow (1)     |
| 28          | 49.85           | 105.85       | Shut-In(1)           |
| 55          | 50.00           | 106.19       | End Shut-In(1)       |
| 56          | 49.96           | 106.20       | Open To Flow (2)     |
| 81          | 51.28           | 106.88       | Shut-In(2)           |
| 123         | 51.82           | 108.36       | End Shut-In(2)       |
| 126         | 2065.29         | 109.08       | Final Hydro-static   |

## Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 5.00        | MUD CUT OIL 30%M70%OIL | 0.02         |
|             |                        |              |
|             |                        |              |
|             |                        |              |
|             |                        |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1072

**DST#: 4**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.24 @ 08:00:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 4144.00 ft | Diameter: 3.88 inches | Volume: 60.60 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:  | 55000.00 lb |
|                           |                    |                       | <u>Total Volume: 61.19 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 2.75 ft            |                       |                                | String Weight: Initial | 49000.00 lb |
| Depth to Top Packer:      | 4290.00 ft         |                       |                                | Final                  | 49000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 40.00 ft           |                       |                                |                        |             |
| Tool Length:              | 68.75 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter:             | 6.75 inches                    |                        |             |
| Tool Comments:            |                    |                       |                                |                        |             |

| Tool Description          | Length (ft) | Serial No.   | Position | Depth (ft) | Accum. Lengths                |
|---------------------------|-------------|--------------|----------|------------|-------------------------------|
| Shut-in tool              | 5.00        |              |          | 4266.25    |                               |
| Hydraulic tool            | 5.00        |              |          | 4271.25    |                               |
| Change over sub           | 0.75        |              |          | 4272.00    |                               |
| Jars                      | 6.00        |              |          | 4278.00    |                               |
| Safety Joint              | 2.00        |              |          | 4280.00    |                               |
| Packer                    | 5.00        |              |          | 4285.00    | 28.75 Bottom Of Top Packer    |
| Packer                    | 5.00        |              |          | 4290.00    |                               |
| Anchor                    | 35.00       |              |          | 4325.00    |                               |
| Recorder                  | 1.00        | 6651         | Inside   | 4326.00    |                               |
| Recorder                  | 1.00        | 6666         | Outside  | 4327.00    |                               |
| Bull plug                 | 3.00        |              |          | 4330.00    | 40.00 Bottom Packers & Anchor |
| <b>Total Tool Length:</b> |             | <b>68.75</b> |          |            |                               |



# DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1072

DST#: 4

ATTN: MAC ARMSTRONG

Test Start: 2011.02.24 @ 08:00:00

## 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: 9.60 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description            | Volume<br>bbl |
|--------------|------------------------|---------------|
| 5.00         | MUD CUT OIL 30%M70%OIL | 0.025         |

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

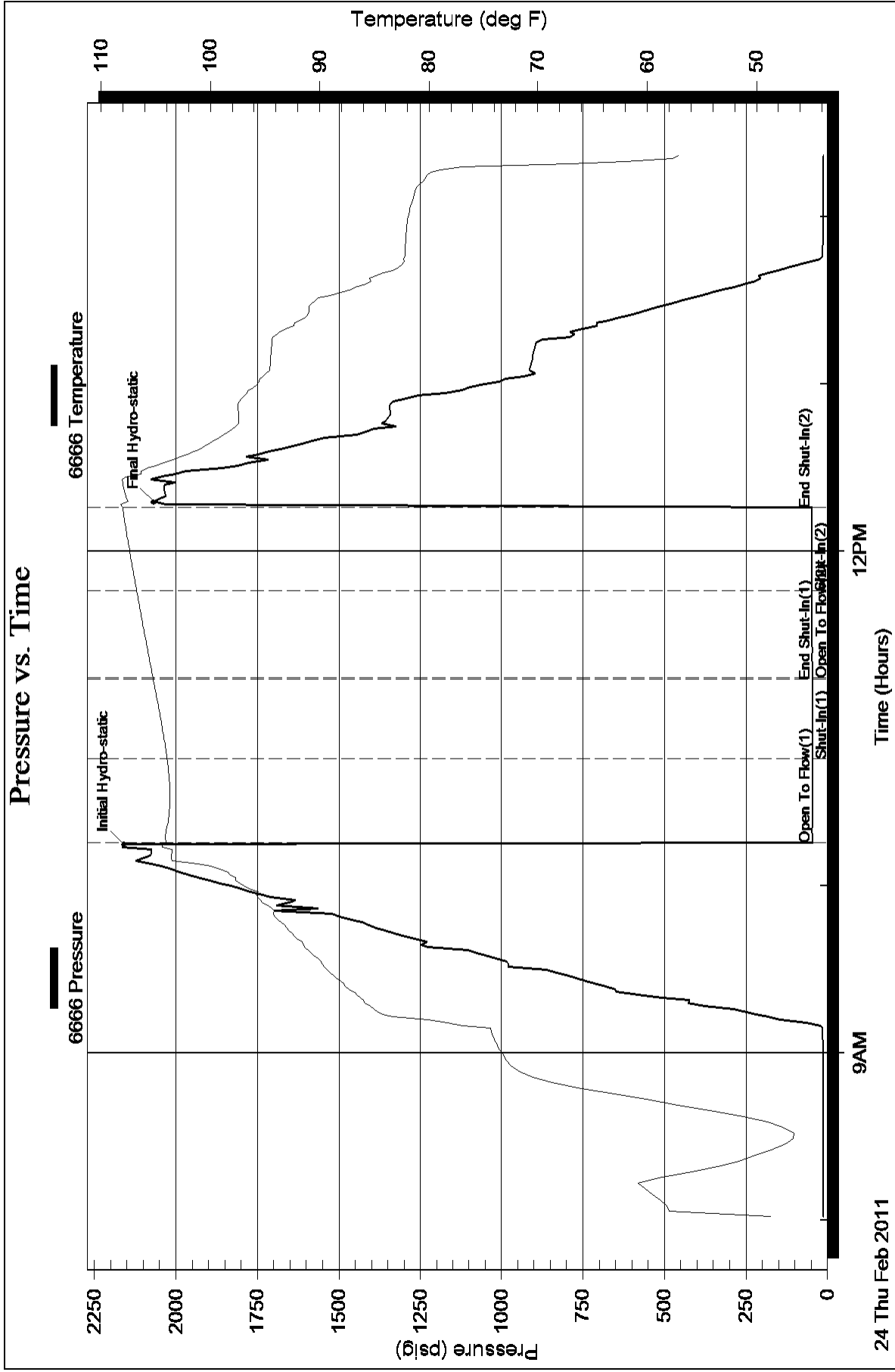
Num Gas Bombs: 0

Serial #:

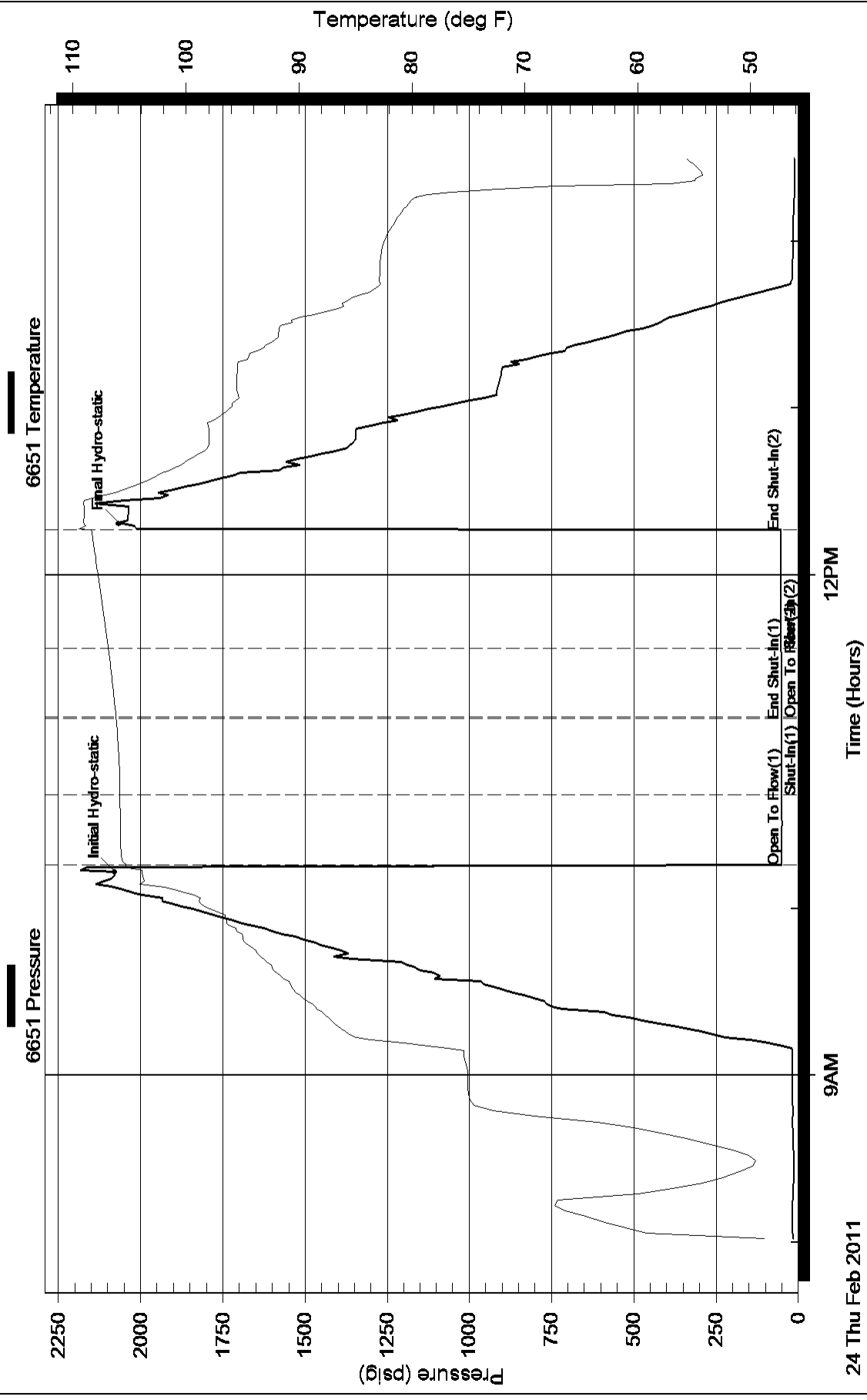
Laboratory Name:

Laboratory Location:

Recovery Comments:



### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: MAC ARMSTRONG

**9-14S-31W GOVE**

**HUND 1-9**

Start Date: 2011.02.26 @ 01:00:00

End Date: 2011.02.26 @ 10:32:00

Job Ticket #: 1073                      DST #: 5

Eagle Testers LLC.

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

620-617-7548

Printed: 2011.02.26 @ 01:48:19

GRAND MESA OPERATING  
HUND 1-9  
9-14S-31W GOVE  
DST # 5  
JOHNSON  
2011.02.26



# DRILL STEM TEST REPORT

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1073

**DST#: 5**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.26 @ 01:00:00

## GENERAL INFORMATION:

Formation: **JOHNSON**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:02:30

Time Test Ended: 10:32:00

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 52 MRT OAKLEY

**Interval: 4552.00 ft (KB) To 4604.00 ft (KB) (TVD)**

Reference Elevations: 2953.00 ft (KB)

Total Depth: 4604.00 ft (KB) (TVD)

2946.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

**Serial #: 6666 Outside**

Press @ Run Depth: psig @ 4601.00 ft (KB)

Capacity: 50000.00 psig

Start Date: 2011.02.26 End Date: 2011.02.26

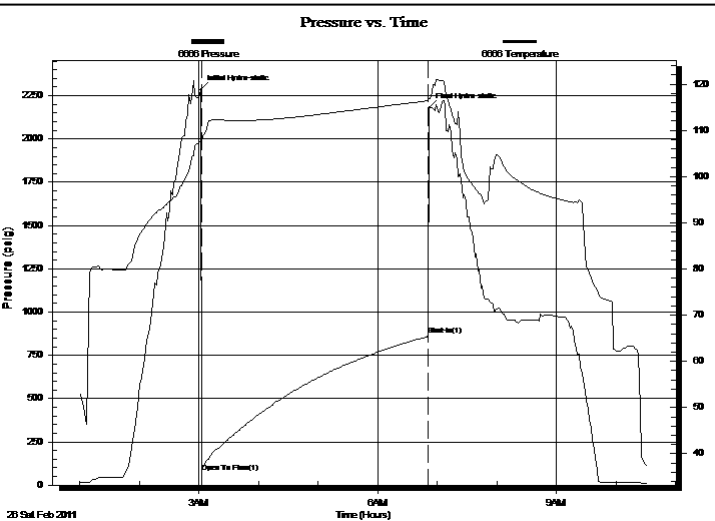
Last Calib.: 2011.02.26

Start Time: 01:00:00 End Time: 10:32:00

Time On Btm: 2011.02.26 @ 03:02:00

Time Off Btm: 2011.02.26 @ 06:52:00

**TEST COMMENT:** 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 8 MINS  
45-INITIAL SHUT IN GOOD BLOW BACK BOTTOM BUCKET  
60-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 6 MINS  
90-FINAL SHUT IN GOOD BLOW BACK BOTTOM BUCKET



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2284.82         | 107.58       | Initial Hydro-static |
| 1           | 76.94           | 107.17       | Open To Flow (1)     |
| 229         | 864.64          | 116.41       | Shut-In(1)           |
| 230         | 2180.64         | 116.79       | Final Hydro-static   |

## Recovery

| Length (ft) | Description               | Volume (bbl) |
|-------------|---------------------------|--------------|
| 1200.00     | GAS IN PIPE 100%GAS       | 16.38        |
| 1920.00     | GASSY OIL 30%GAS70%OIL    | 28.08        |
| 120.00      | MUD CUT OIL 30%MUD 70%OIL | 1.75         |
|             |                           |              |
|             |                           |              |

## Gas Rates

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





# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING

**HUND 1-9**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**9-14S-31W GOVE**

Job Ticket: 1073

**DST#: 5**

ATTN: MAC ARMSTRONG

Test Start: 2011.02.26 @ 01:00:00

## Tool Information

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 4406.00 ft | Diameter: 3.88 inches | Volume: 64.43 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:  | 75000.00 lb |
|                           |                    |                       | <u>Total Volume: 65.02 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 2.75 ft            |                       |                                | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer:      | 4552.00 ft         |                       |                                | Final                  | 70000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 52.00 ft           |                       |                                |                        |             |
| Tool Length:              | 80.75 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut-in tool     | 5.00        |            |          | 4528.25    |                               |
| Hydraulic tool   | 5.00        |            |          | 4533.25    |                               |
| Change over sub  | 0.75        |            |          | 4534.00    |                               |
| Jars             | 6.00        |            |          | 4540.00    |                               |
| Safety Joint     | 2.00        |            |          | 4542.00    |                               |
| Packer           | 5.00        |            |          | 4547.00    | 28.75 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 4552.00    |                               |
| Anchor           | 5.00        |            |          | 4557.00    |                               |
| change over sub  | 0.75        |            |          | 4557.75    |                               |
| drill pipe       | 31.50       |            |          | 4589.25    |                               |
| change over sub  | 0.75        |            |          | 4590.00    |                               |
| anchor           | 9.00        |            |          | 4599.00    |                               |
| Recorder         | 1.00        | 6651       | Inside   | 4600.00    |                               |
| Recorder         | 1.00        | 6666       | Outside  | 4601.00    |                               |
| bull plug        | 3.00        |            |          | 4604.00    | 52.00 Bottom Packers & Anchor |

**Total Tool Length: 80.75**



# DRILL STEM TEST REPORT

FLUID SUMMARY

GRAND MESA OPERATING

HUND 1-9

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

9-14S-31W GOVE

Job Ticket: 1073

DST#: 5

ATTN: MAC ARMSTRONG

Test Start: 2011.02.26 @ 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description               | Volume<br>bbbl |
|--------------|---------------------------|----------------|
| 1200.00      | GAS IN PIPE 100%GAS       | 16.384         |
| 1920.00      | GASSY OIL 30%GAS70%OIL    | 28.078         |
| 120.00       | MUD CUT OIL 30%MUD 70%OIL | 1.755          |

Total Length: 3240.00 ft Total Volume: 44.462 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

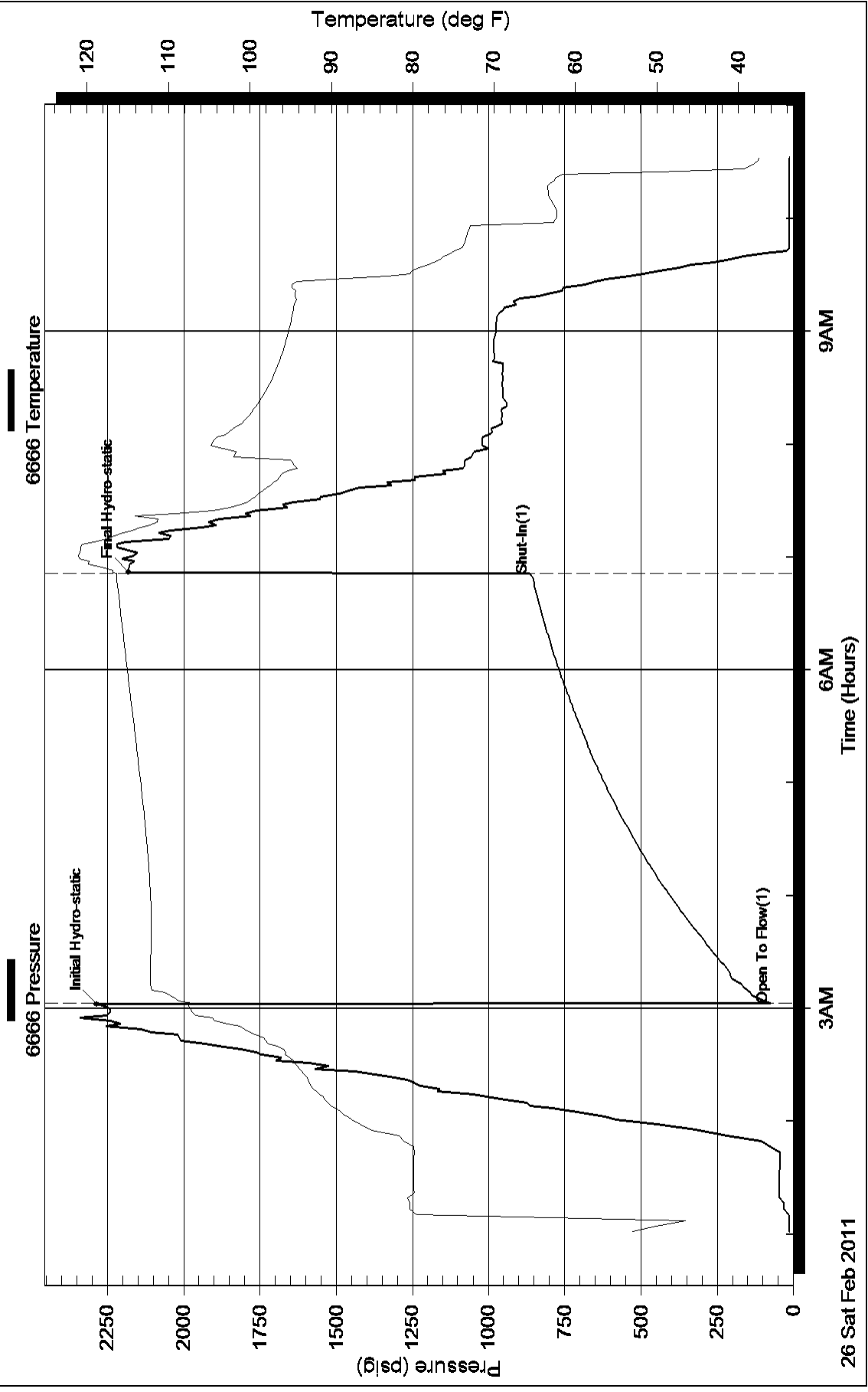
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: GRAVITY OF OIL 36

### Pressure vs. Time



Serial #: 6651

Inside

GRAND MESA OPERATING

9-14S-31W GOVE

DST Test Number: 5

