



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co.  
 250 N. Water Suite 300 Wichita Ks. 67202  
 ATTN: Brad Rine

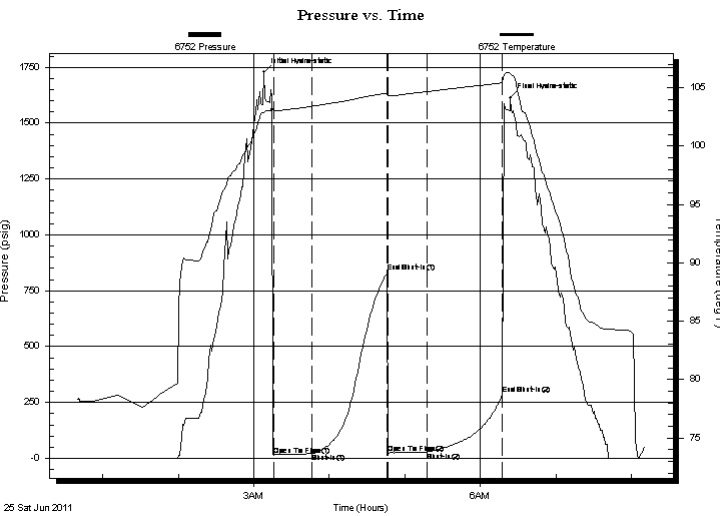
**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
 Job Ticket: 43704 **DST#: 1**  
 Test Start: 2011.06.25 @ 00:40:00

## GENERAL INFORMATION:

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:15:30  
 Time Test Ended: 08:10:30  
 Interval: **3422.00 ft (KB) To 3469.00 ft (KB) (TVD)**  
 Total Depth: 3469.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 36  
 Reference Elevations: 2612.00 ft (KB)  
 2607.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6752 Inside**  
 Press @ Run Depth: 27.91 psig @ 3423.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.06.25 End Date: 2011.06.25 Last Calib.: 2011.06.25  
 Start Time: 00:40:05 End Time: 08:10:29 Time On Btm: 2011.06.25 @ 03:08:00  
 Time Off Btm: 2011.06.25 @ 06:24:00

**TEST COMMENT:** IF: Weak surface blow over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: No blow over 30 mins.  
 FS: No blow back over 60 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1726.88	102.89	Initial Hydro-static
8	16.03	103.09	Open To Flow (1)
39	20.80	103.41	Shut-In(1)
98	831.97	104.52	End Shut-In(1)
99	23.95	104.30	Open To Flow (2)
130	27.91	104.66	Shut-In(2)
190	288.15	105.42	End Shut-In(2)
196	1611.97	106.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	HMCO-20% m80% o	0.05

## Gas Rates

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



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ATTN: Brad Rine

**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43704      **DST#: 1**  
Test Start: 2011.06.25 @ 00:40:00

## 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: bbl		
Water Loss: 5.60 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1000.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	HMCO-20% m80%o	0.049

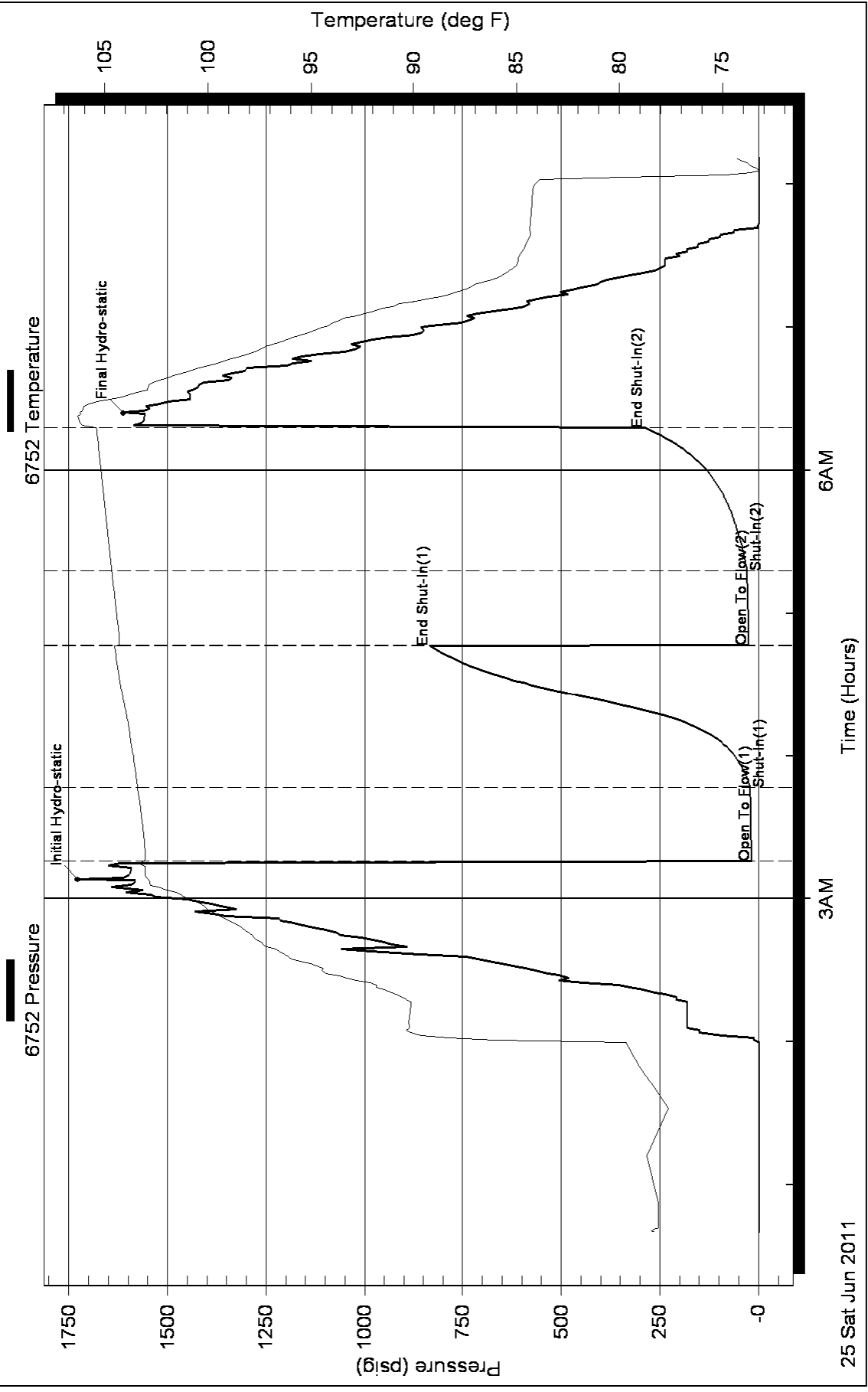
Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments:

# Pressure vs. Time





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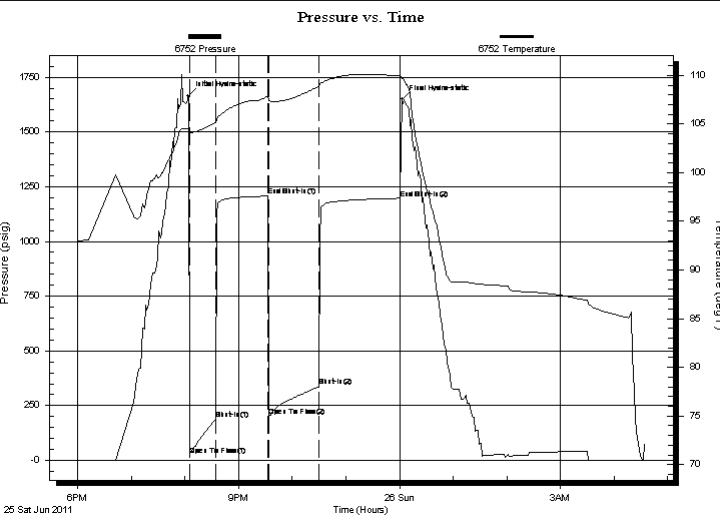
**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
 Job Ticket: 43705 **DST#: 2**  
 Test Start: 2011.06.25 @ 18:00:00

## GENERAL INFORMATION:

Formation: **Toronto, LKC- A**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:05:00  
 Time Test Ended: 04:34:00  
 Interval: **3480.00 ft (KB) To 3532.00 ft (KB) (TVD)**  
 Total Depth: 3522.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole  
 Tester: Chuck Kreuzer Jr.  
 Unit No: 36  
 Reference Elevations: 2612.00 ft (KB)  
 2607.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6752 Inside**  
 Press @ Run Depth: 337.18 psig @ 3471.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.06.25 End Date: 2011.06.26 Last Calib.: 2011.06.26  
 Start Time: 18:00:05 End Time: 04:34:00 Time On Btm: 2011.06.25 @ 20:04:00  
 Time Off Btm: 2011.06.26 @ 00:03:00

**TEST COMMENT:** IF: Fair blow , Built to B.O.B over 30 mins.  
 IS: No blow back over 60 mins.  
 FF: Fair blow , Built to B.O.B over 22 mins.  
 FS: No blow back over 90 mins.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1665.51	104.51	Initial Hydro-static
1	22.64	104.30	Open To Flow (1)
31	189.99	105.18	Shut-In(1)
89	1207.11	107.86	End Shut-In(1)
90	199.78	107.55	Open To Flow (2)
146	337.18	108.88	Shut-In(2)
237	1196.80	109.94	End Shut-In(2)
239	1648.82	109.67	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
515.00	gocmw -1%g3%o5%m91%w	2.53
124.00	gocmw -5%g15%o10%m70%w	1.74
62.00	gmco-5%g5%m90%o	0.87
30.00	go-5%g95%o	0.42

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



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Murfin Drilling Co.  
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ATTN: Brad Rine

**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43705      **DST#: 2**  
Test Start: 2011.06.25 @ 18:00:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 8.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1700.00 ppm			
Filter Cake: 2.00 inches			

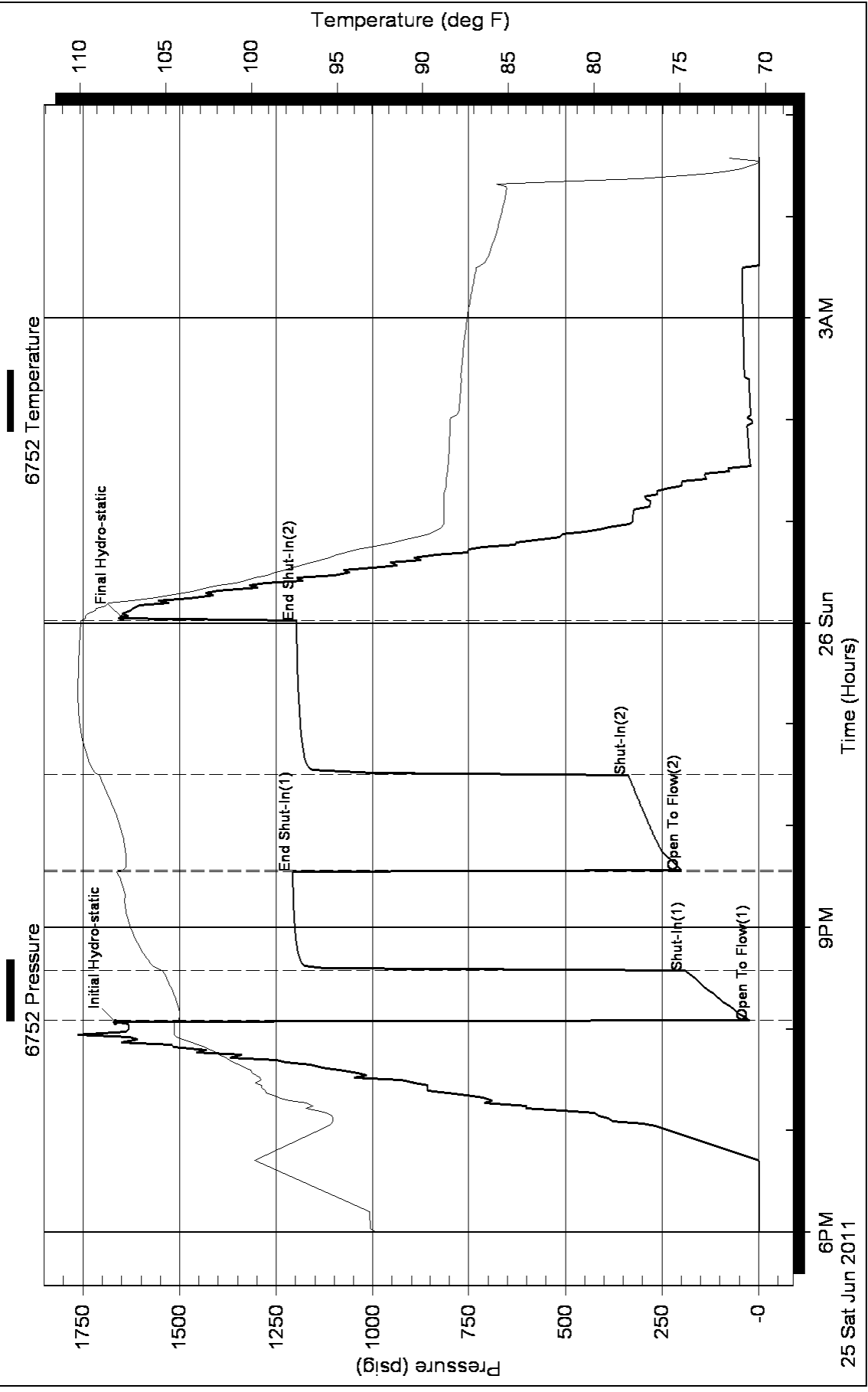
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
515.00	gocmw -1%g3%o5%m91%w	2.533
124.00	gocmw -5%g15%o10%m70%w	1.739
62.00	gmco-5%g5%m90%o	0.870
30.00	go-5%g95%o	0.421

Total Length: 731.00 ft      Total Volume: 5.563 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: Gravity-19@82\*=16.8 corrected gravity.

### Pressure vs. Time





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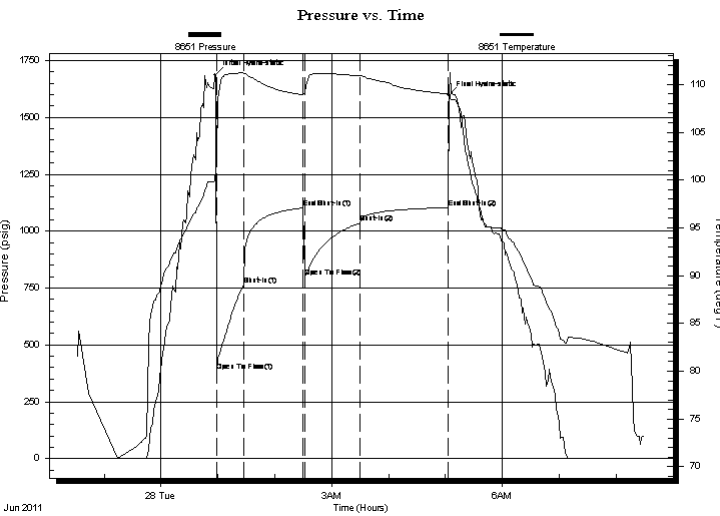
**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43706 **DST#: 3**  
Test Start: 2011.06.27 @ 22:32:00

## GENERAL INFORMATION:

Formation: **LSG "B,C,D"**  
Deviated: No Whipstock: (KB) Test Type: Conventional Bottom Hole  
Time Tool Opened: 00:58:30 Tester: Kevin Mack  
Time Test Ended: 08:31:00 Unit No: 36  
**Interval: 3527.00 ft (KB) To 3566.00 ft (KB) (TVD)** Reference Elevations: 2612.00 ft (KB)  
Total Depth: 3566.00 ft (KB) (TVD) 2607.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

**Serial #: 8651 Outside**  
Press @ Run Depth: 1035.48 psig @ 3528.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2011.06.27 End Date: 2011.06.28 Last Calib.: 2011.06.28  
Start Time: 22:32:05 End Time: 08:31:00 Time On Btm: 2011.06.28 @ 00:57:30  
Time Off Btm: 2011.06.28 @ 05:03:30

**TEST COMMENT:** IF: BoB in 1 1/2 min.  
IS: No Return  
FF: BoB in 2 min  
FS: No Return Max H2S 35ppm



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1687.64	99.87	Initial Hydro-static
1	386.34	102.29	Open To Flow (1)
30	764.11	111.17	Shut-In(1)
93	1102.20	108.90	End Shut-In(1)
94	797.92	109.00	Open To Flow (2)
153	1035.48	110.92	Shut-In(2)
246	1104.30	109.00	End Shut-In(2)
246	1597.97	109.14	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Heavy Mud 100M	0.02
660.00	Water 100W	4.61
434.00	MW 95W 5M	6.09
620.00	MW 90W 10M	8.70
310.00	MW 70W 30M	4.35
155.00	OSWM 40W 60M (oil spots)	2.17

## Gas Rates

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



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Murfin Drilling Co.  
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ATTN: Brad Rine

**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43706 **DST#: 3**  
Test Start: 2011.06.27 @ 22:32:00

**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:	75000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2800.00 ppm			
Filter Cake: 2.00 inches			

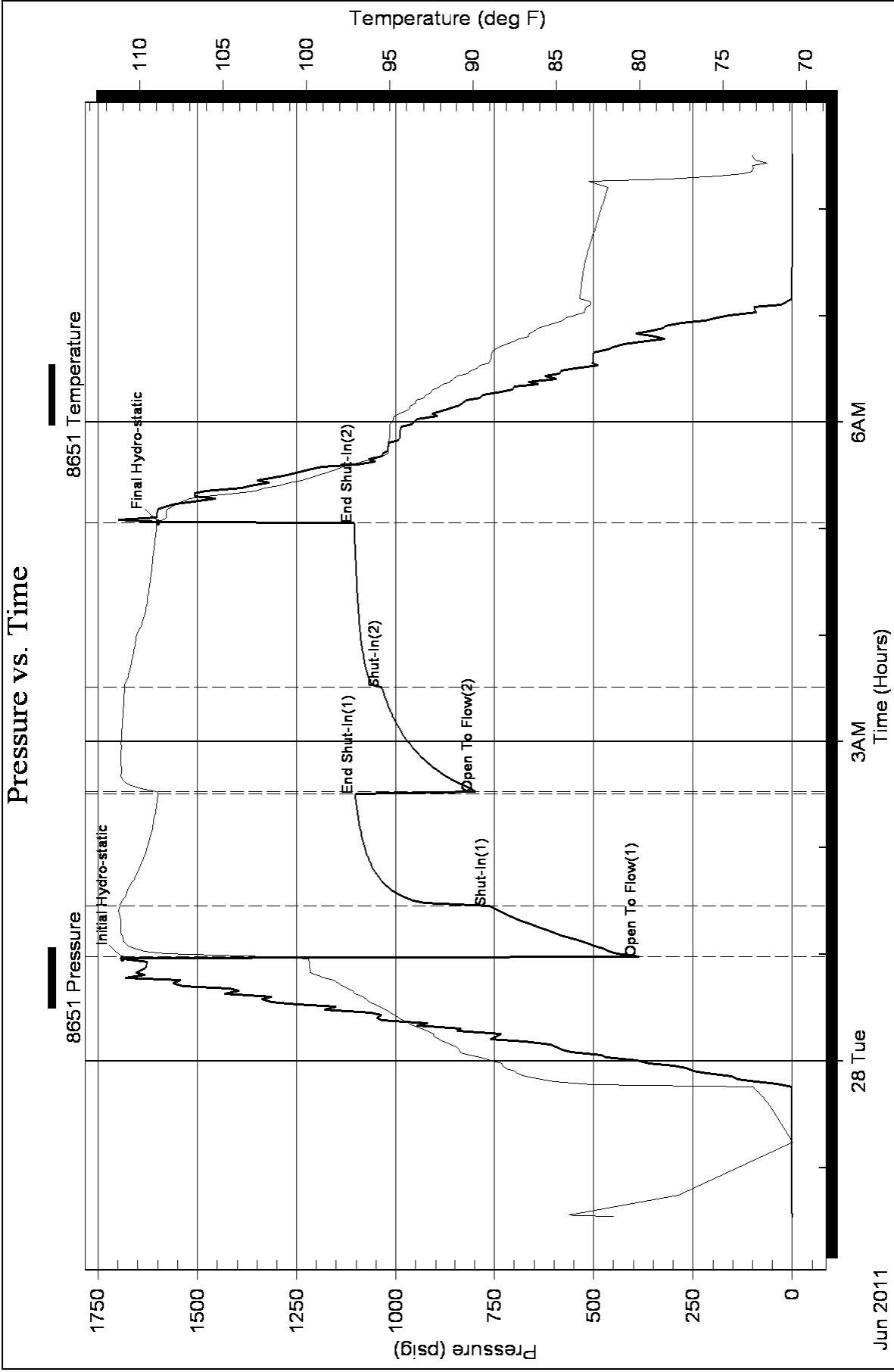
**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
5.00	Heavy Mud 100M	0.025
660.00	Water 100W	4.612
434.00	MW 95W 5M	6.088
620.00	MW 90W 10M	8.697
310.00	MW 70W 30M	4.348
155.00	OSWM 40W 60M (oil spots)	2.174

Total Length: 2184.00 ft      Total Volume: 25.944 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW .13 @ 62 deg=75000ppm  
 Max H2S 35 ppm.







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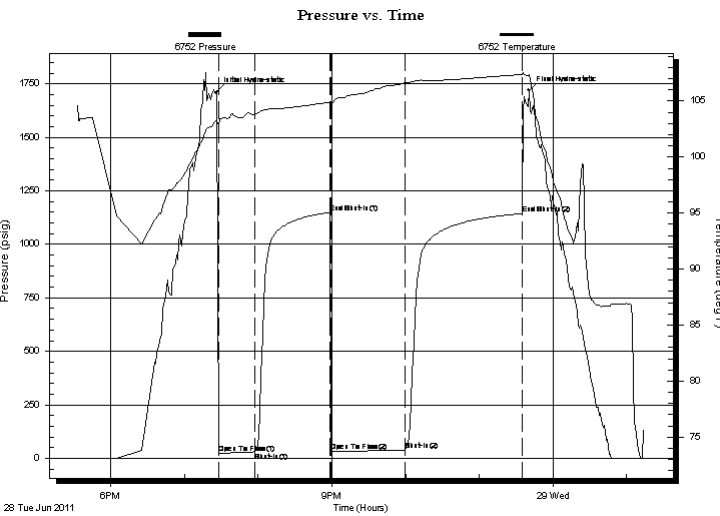
**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43707 **DST#: 4**  
Test Start: 2011.06.28 @ 17:33:00

## GENERAL INFORMATION:

Formation: **LSG "E,F,G,H"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:27:30  
Time Test Ended: 01:14:30  
Interval: **3588.00 ft (KB) To 3615.00 ft (KB) (TVD)**  
Total Depth: 3615.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole  
Tester: Kevin Mack  
Unit No: 36  
Reference Elevations: 2612.00 ft (KB)  
2607.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6752 Inside**  
Press @ Run Depth: 39.77 psig @ 3589.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2011.06.28 End Date: 2011.06.29 Last Calib.: 2011.06.29  
Start Time: 17:33:05 End Time: 01:14:29 Time On Btm: 2011.06.28 @ 19:26:30  
Time Off Btm: 2011.06.28 @ 23:40:30

TEST COMMENT: IF: Blow built to 1/2"  
IS: No Return  
FF: No Blow  
FS: No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1712.41	103.24	Initial Hydro-static
1	22.03	102.80	Open To Flow (1)
31	30.46	103.87	Shut-In(1)
92	1149.60	104.91	End Shut-In(1)
93	31.12	104.70	Open To Flow (2)
153	39.77	106.63	Shut-In(2)
248	1143.53	107.37	End Shut-In(2)
254	1719.04	107.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud 100M	0.10

## Gas Rates

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



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**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43707      **DST#: 4**  
Test Start: 2011.06.28 @ 17:33:00

## 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: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.60 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2600.00 ppm			
Filter Cake: 2.00 inches			

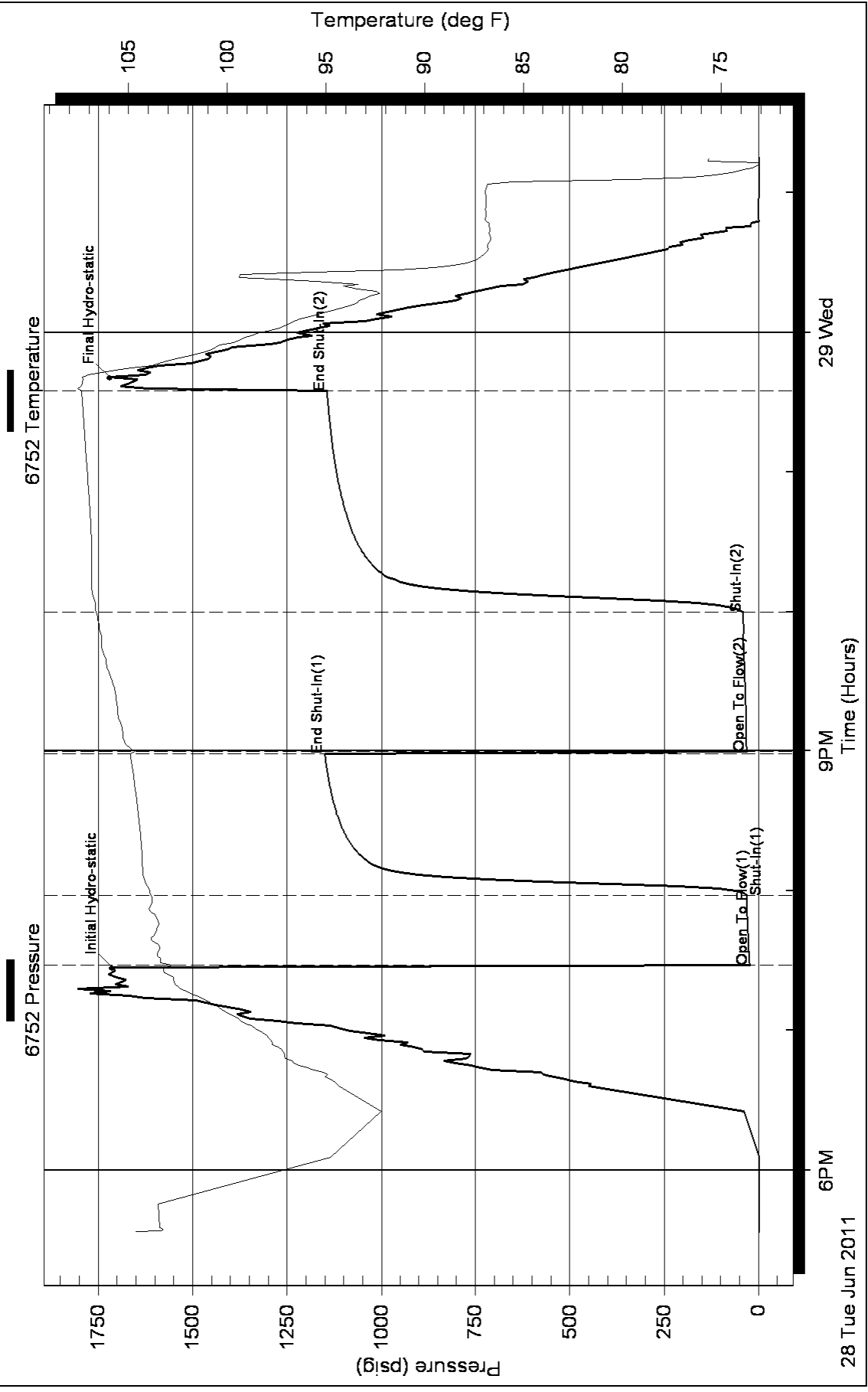
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud 100M	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:

### Pressure vs. Time





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 ATTN: Brad Rine

**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
 Job Ticket: 43708 **DST#: 5**  
 Test Start: 2011.06.29 @ 08:23:00

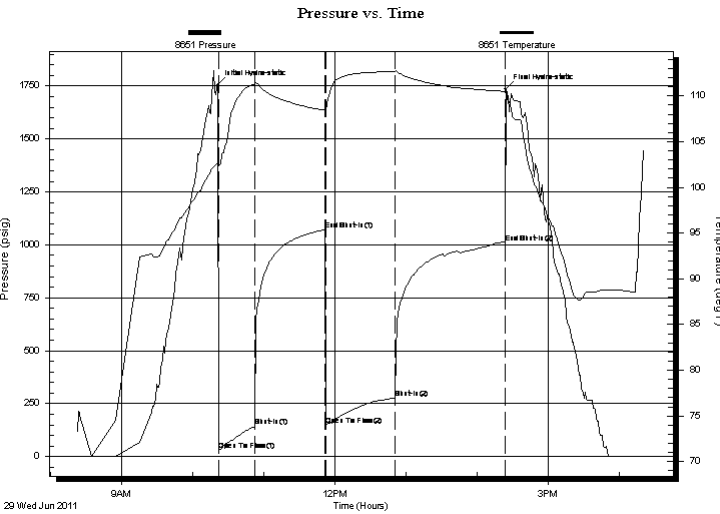
## GENERAL INFORMATION:

Formation: **LKC "H"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:22:30  
 Time Test Ended: 16:22:00  
**Interval: 3609.00 ft (KB) To 3643.00 ft (KB) (TVD)**  
 Total Depth: 3643.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole  
 Tester: Kevin Mack  
 Unit No: 36  
 Reference Elevations: 2612.00 ft (KB)  
 2607.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8651 Outside

Press @ Run Depth: 277.25 psig @ 3610.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2011.06.29 End Date: 2011.06.29 Last Calib.: 2011.06.29  
 Start Time: 08:23:05 End Time: 16:21:59 Time On Btm: 2011.06.29 @ 10:21:30  
 Time Off Btm: 2011.06.29 @ 14:24:30

**TEST COMMENT:** IF: Blow built to 9 3/4"  
 IS: No Return  
 FF: Blow started at 3 min. Built to BoB in 50 min.  
 FS: No Return Max H2s: 2 ppm



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1755.89	102.70	Initial Hydro-static
1	28.82	102.40	Open To Flow (1)
31	143.27	111.31	Shut-In(1)
90	1071.16	108.45	End Shut-In(1)
91	146.02	108.41	Open To Flow (2)
149	277.25	112.67	Shut-In(2)
242	1009.63	110.50	End Shut-In(2)
243	1737.85	110.55	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	WM 45W 55M	0.30
130.00	MW 90W 10M	0.64
365.00	MW 80W 20M	2.18
3.00	MCWO 90o 5W 5M	0.04

## Gas Rates

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



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ATTN: Brad Rine

**Fox- A #2-34**  
**34 3s 27w Decatur Ks**  
Job Ticket: 43708      **DST#: 5**  
Test Start: 2011.06.29 @ 08:23:00

## 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: 120000 ppm	
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.00 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3600.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	WM 45W 55M	0.305
130.00	MW 90W 10M	0.639
365.00	MW 80W 20M	2.178
3.00	MCWO 90o 5W 5M	0.042

Total Length: 560.00 ft      Total Volume: 3.164 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW .05 @ 97 deg.= 120000 ppm  
 Max H2s: 2 ppm

### Pressure vs. Time

