



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Ste. #300
 Wichita, Ks 67202
 ATTN: Jeff Christian

Hilgers #4-19
19/9S/18W-Rooks
 Job Ticket: 45205 **DST#: 1**
 Test Start: 2011.07.12 @ 10:12:00

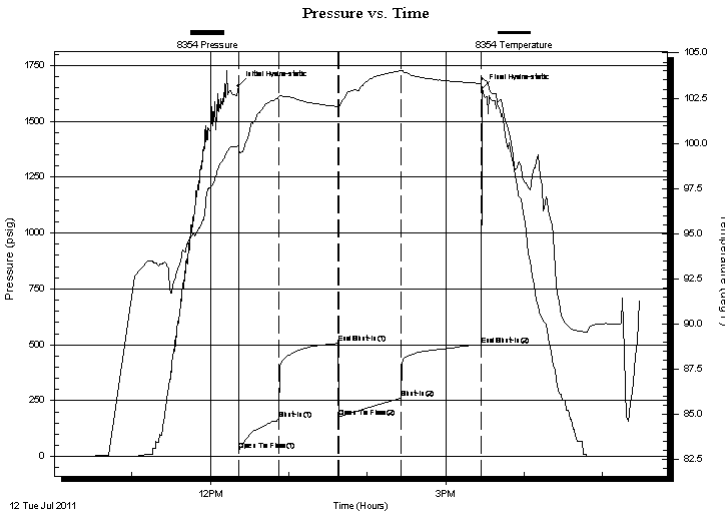
GENERAL INFORMATION:

Formation: **LKC "A-D"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole
 Time Tool Opened: 12:22:00
 Tester: Dustin Rash
 Time Test Ended: 17:28:30
 Unit No: 38
Interval: 3320.00 ft (KB) To 3396.00 ft (KB) (TVD)
 Reference Elevations: 2157.00 ft (KB)
 Total Depth: 3396.00 ft (KB) (TVD) 2152.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8354 Inside
 Press @ Run Depth: 259.42 psig @ 3388.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.07.12 End Date: 2011.07.12 Last Calib.: 2011.07.12
 Start Time: 10:22:00 End Time: 17:28:30 Time On Btm: 2011.07.12 @ 12:21:30
 Time Off Btm: 2011.07.12 @ 15:28:00

TEST COMMENT: IF-Fair building blow . BOB in 10 minutes.
 IS-No Return.
 FF-Fair building blow . BOB in 16 minutes.
 FS-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1658.91	99.85	Initial Hydro-static
1	27.19	99.39	Open To Flow (1)
31	168.13	102.58	Shut-In(1)
76	505.84	102.04	End Shut-In(1)
77	174.55	101.93	Open To Flow (2)
124	259.42	104.01	Shut-In(2)
186	500.74	103.32	End Shut-In(2)
187	1647.76	103.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	85%Water/15%Mud	1.87
124.00	60%Mud/40%Water	1.74
155.00	98%Mud/2%Oil	2.17

Gas Rates

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



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FLUID SUMMARY

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Hilgers #4-19

250 N. Water Ste. #300
Wichita, Ks 67202

19/9S/18W-Rooks

Job Ticket: 45205

DST#: 1

ATTN: Jeff Christian

Test Start: 2011.07.12 @ 10:12:00

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:

54000 ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 in³

Gas Cushion Type:

Resistivity: 0.11 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
248.00	85%Water/15%Mud	1.866
124.00	60%Mud/40%Water	1.739
155.00	98%Mud/2%Oil	2.174

Total Length: 527.00 ft

Total Volume: 5.779 bbl

Num Fluid Samples: 0

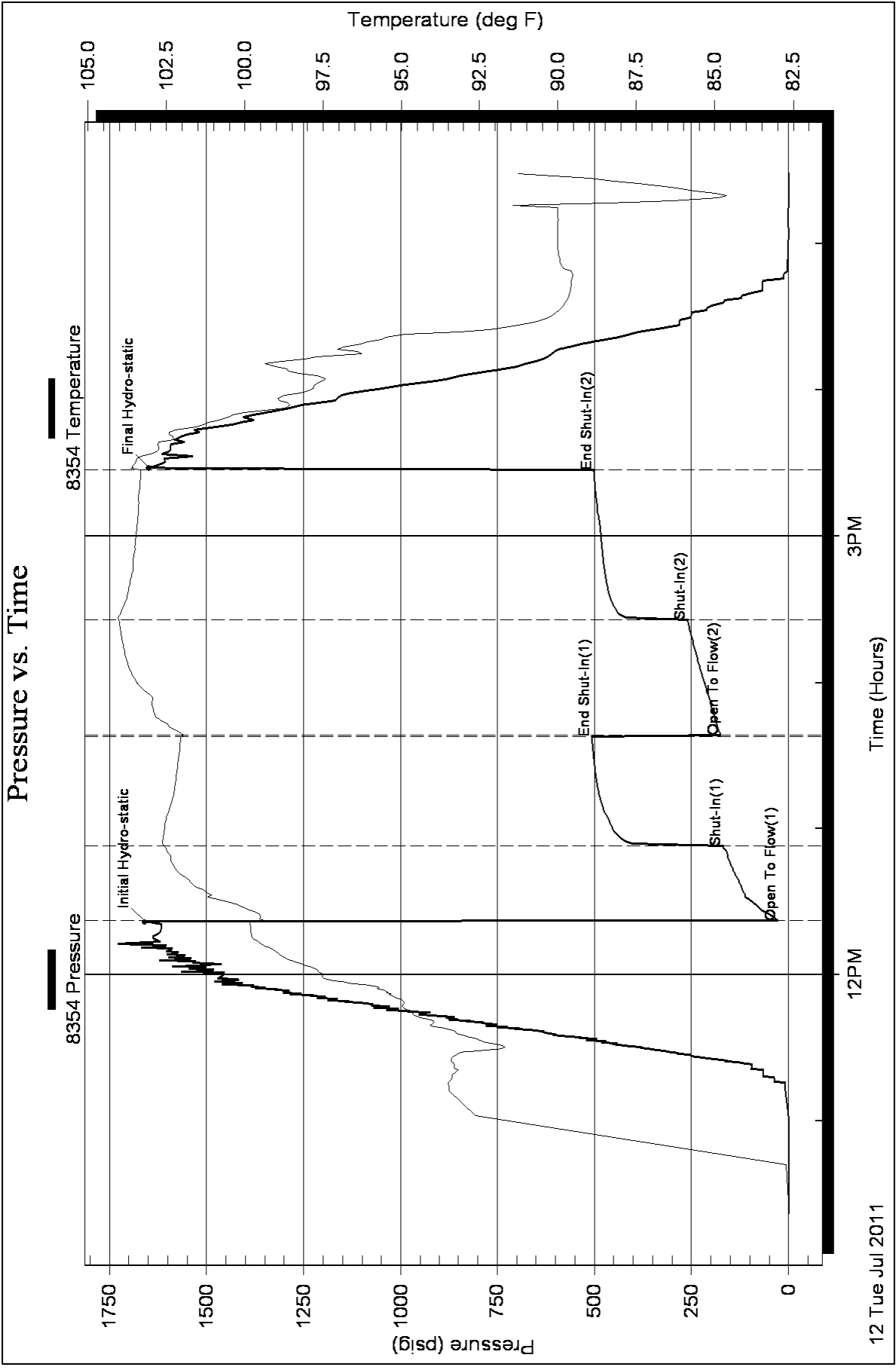
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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Hilgers #4-19
19/9S/18W-Rooks
 Job Ticket: 45206 **DST#: 2**
 Test Start: 2011.07.13 @ 01:36:15

GENERAL INFORMATION:

Formation: **LKC "E-F"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:56:45
 Time Test Ended: 08:52:15
 Interval: **3394.00 ft (KB) To 3432.00 ft (KB) (TVD)**
 Total Depth: 3432.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole
 Tester: Dustin Rash
 Unit No: 38
 Reference Elevations: 2157.00 ft (KB)
 2152.00 ft (CF)
 KB to GR/CF: 5.00 ft

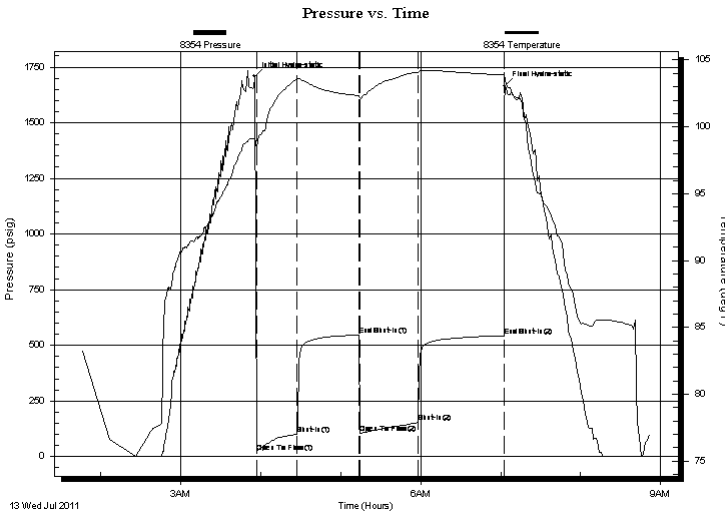
Serial #: 8354

Inside

Press @ Run Depth: 153.71 psig @ 3396.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.07.13 End Date: 2011.07.13 Last Calib.: 2011.07.13
 Start Time: 01:46:15 End Time: 08:52:15 Time On Btm: 2011.07.13 @ 03:55:15
 Time Off Btm: 2011.07.13 @ 07:03:15

TEST COMMENT: IF-Weak building blow . BOB in 29 minutes.
 FSI-No Return.
 FF-Weak building blow . BOB in 43 minutes 30 seconds.
 FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1708.63	99.15	Initial Hydro-static
2	19.91	98.36	Open To Flow (1)
32	102.04	103.57	Shut-In(1)
79	546.09	102.35	End Shut-In(1)
79	105.67	102.18	Open To Flow (2)
123	153.71	104.10	Shut-In(2)
187	542.45	103.87	End Shut-In(2)
188	1665.33	103.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
155.00	80%Water/20%Mud	0.76
62.00	60%Water/40%Mud	0.67
2.00	100%Oil	0.03

Gas Rates

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



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Hilgers #4-19

250 N. Water Ste. #300
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19/9S/18W-Rooks

Job Ticket: 45206

DST#: 2

ATTN: Jeff Christian

Test Start: 2011.07.13 @ 01:36:15

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:	65000 ppm
Viscosity: 68.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.40 in ³	Gas Cushion Type:		
Resistivity: 0.12 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3100.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
155.00	80%Water/20%Mud	0.762
62.00	60%Water/40%Mud	0.669
2.00	100%Oil	0.028

Total Length: 219.00 ft Total Volume: 1.459 bbl

Num Fluid Samples: 0

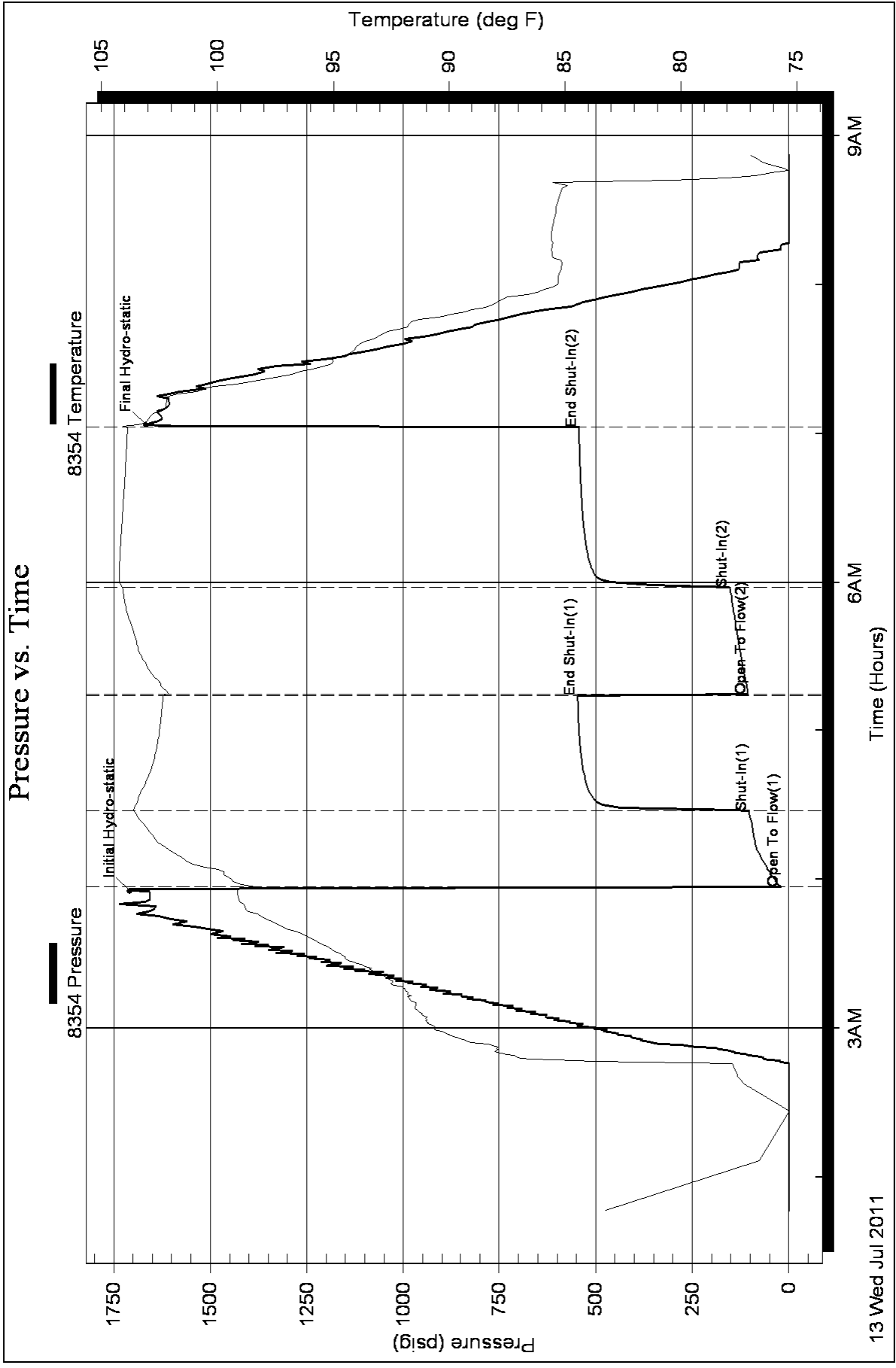
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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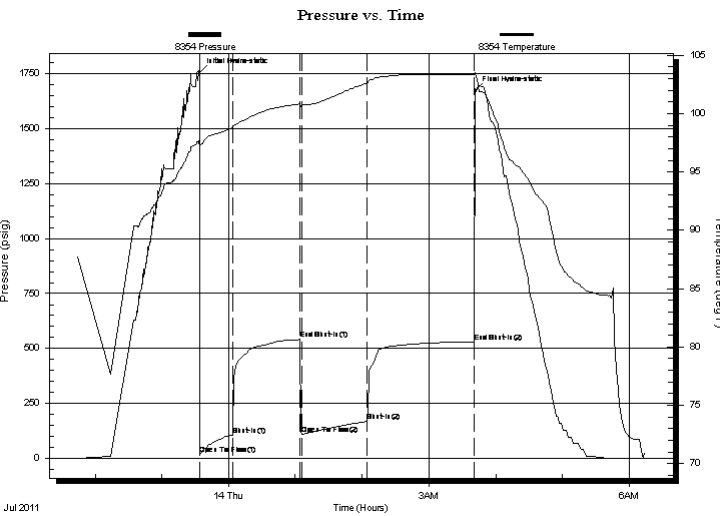
Hilgers #4-19
19/9S/18W-Rooks
 Job Ticket: 45207 **DST#: 3**
 Test Start: 2011.07.13 @ 21:34:20

GENERAL INFORMATION:

Formation: **LKC "H-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:33:50
 Time Test Ended: 06:14:50
 Interval: **3446.00 ft (KB) To 3532.00 ft (KB) (TVD)**
 Total Depth: 3532.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole
 Tester: Dustin Rash
 Unit No: 38
 Reference Elevations: 2157.00 ft (KB)
 2152.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8354 Inside
 Press @ Run Depth: 168.55 psig @ 3516.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.07.13 End Date: 2011.07.14 Last Calib.: 2011.07.14
 Start Time: 21:44:20 End Time: 06:14:50 Time On Btm: 2011.07.13 @ 23:33:40
 Time Off Btm: 2011.07.14 @ 03:41:50

TEST COMMENT: IF-Weak building blow . BOB in 26 minutes 30 seconds.
 IS-No Return.
 FF-Weak building blow . BOB in 37 minutes 30 seconds.
 FS-No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1755.36	97.66	Initial Hydro-static
1	17.90	97.08	Open To Flow (1)
31	107.58	98.83	Shut-In(1)
91	541.11	100.85	End Shut-In(1)
92	109.36	100.76	Open To Flow (2)
151	168.55	102.63	Shut-In(2)
248	531.41	103.32	End Shut-In(2)
249	1673.23	103.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
177.00	90%Water/10%Mud	0.87
124.00	70%Water/30%Mud	1.74
25.00	100%Mud	0.35

Gas Rates

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



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19/9S/18W-Rooks

Job Ticket: 45207

DST#: 3

ATTN: Jeff Christian

Test Start: 2011.07.13 @ 21:34:20

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: 73.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.80 in³

Gas Cushion Type:

Resistivity: 0.10 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
177.00	90%Water/10%Mud	0.870
124.00	70%Water/30%Mud	1.739
25.00	100%Mud	0.351

Total Length: 326.00 ft

Total Volume: 2.960 bbl

Num Fluid Samples: 0

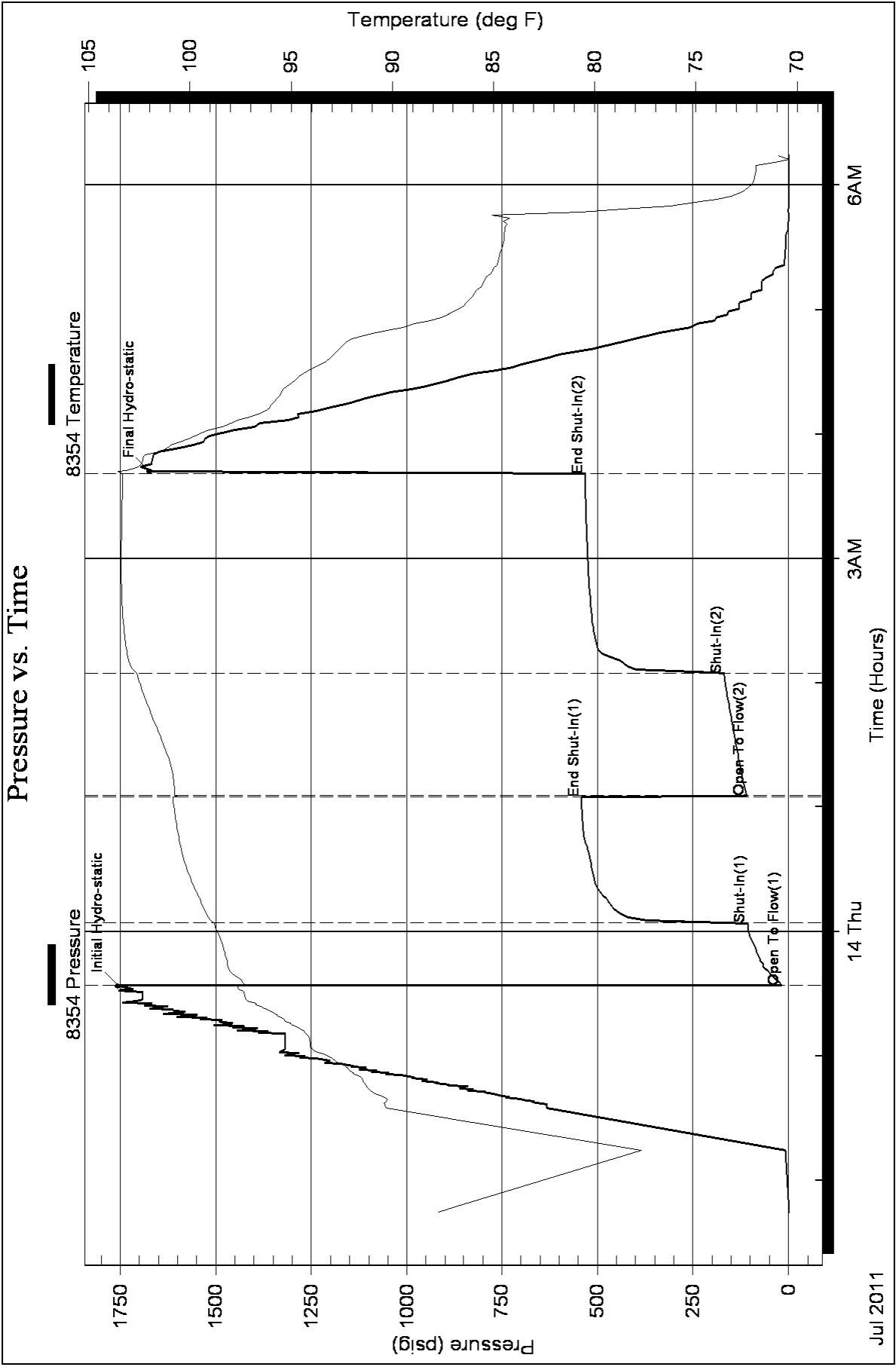
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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Hilgers #4-19
19/9S/18W-Rooks
Job Ticket: 45208 **DST#: 4**
Test Start: 2011.07.14 @ 18:20:10

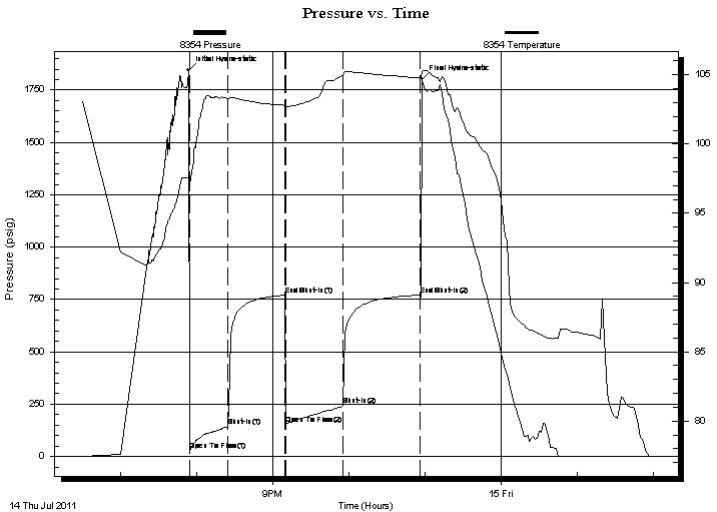
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:54:30
Time Test Ended: 01:56:40
Interval: **3544.00 ft (KB) To 3598.00 ft (KB) (TVD)**
Total Depth: 3598.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Dustin Rash
Unit No: 38
Reference Elevations: 2157.00 ft (KB)
2152.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8354 Inside
Press @ Run Depth: 243.23 psig @ 3583.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.07.14 End Date: 2011.07.15 Last Calib.: 2011.07.15
Start Time: 18:30:10 End Time: 01:56:40 Time On Btm: 2011.07.14 @ 19:53:20
Time Off Btm: 2011.07.14 @ 22:57:40

TEST COMMENT: IF-Fair building blow . BOB in 14 minutes.
ISI-No Return.
FF-Fair building blow . BOB in 19 minutes.
FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1844.02	97.60	Initial Hydro-static
2	28.94	97.16	Open To Flow (1)
32	142.92	103.28	Shut-In(1)
76	770.62	102.81	End Shut-In(1)
77	154.71	102.69	Open To Flow (2)
122	243.23	104.98	Shut-In(2)
183	771.04	104.80	End Shut-In(2)
185	1801.02	105.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
114.00	85%Water/15%Mud	0.56
186.00	60%Water/40%Mud	2.04
186.00	60%Mud/30%Water/10%Oil	2.61

Gas Rates

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



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19/9S/18W-Rooks

Job Ticket: 45208

DST#: 4

ATTN: Jeff Christian

Test Start: 2011.07.14 @ 18:20:10

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:

40000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: 0.16 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
114.00	85%Water/15%Mud	0.561
186.00	60%Water/40%Mud	2.035
186.00	60%Mud/30%Water/10%Oil	2.609

Total Length: 486.00 ft

Total Volume: 5.205 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

