



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 042914 **DST#: 1**
Test Start: 2011.07.14 @ 12:15:00

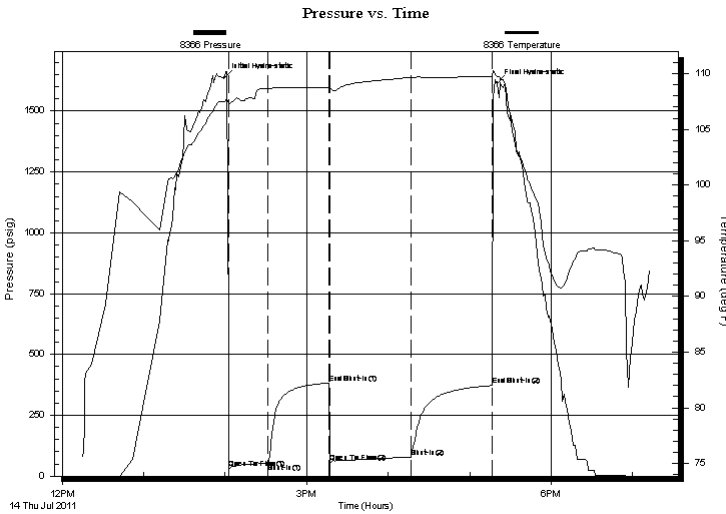
GENERAL INFORMATION:

Formation: **LKC "A - C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:03:00
Time Test Ended: 19:13:00
Interval: **3464.00 ft (KB) To 3524.00 ft (KB) (TVD)**
Total Depth: 3524.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: James Winder
Unit No: 46
Reference Elevations: 2198.00 ft (KB)
2188.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8366 Inside
Press @ Run Depth: 78.75 psig @ 3465.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.07.14 End Date: 2011.07.14 Last Calib.: 2011.07.14
Start Time: 12:15:05 End Time: 19:12:59 Time On Btm: 2011.07.14 @ 13:59:30
Time Off Btm: 2011.07.14 @ 17:20:30

TEST COMMENT: IF: Bled off surge blow at 4 min., Blow built to 3 1/4"
IS: No blow back
FF: Blow started at 6 min., built to 5 3/4"
FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1638.15	107.46	Initial Hydro-static
4	34.22	107.43	Open To Flow (1)
32	54.34	108.66	Shut-In(1)
77	383.86	108.75	End Shut-In(1)
78	58.25	108.68	Open To Flow (2)
137	78.75	109.67	Shut-In(2)
197	372.45	109.74	End Shut-In(2)
201	1615.26	109.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
63.00	SO/MW 54%w, 41%m, 3%g, 2%o	0.88
78.00	OCM 88%m, 11%o, 1%g	1.09

Gas Rates

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



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1310 Bison Rd
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ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 042914 **DST#: 1**
Test Start: 2011.07.14 @ 12:15:00

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:	28000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.40 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2800.00 ppm			
Filter Cake: 1.00 inches			

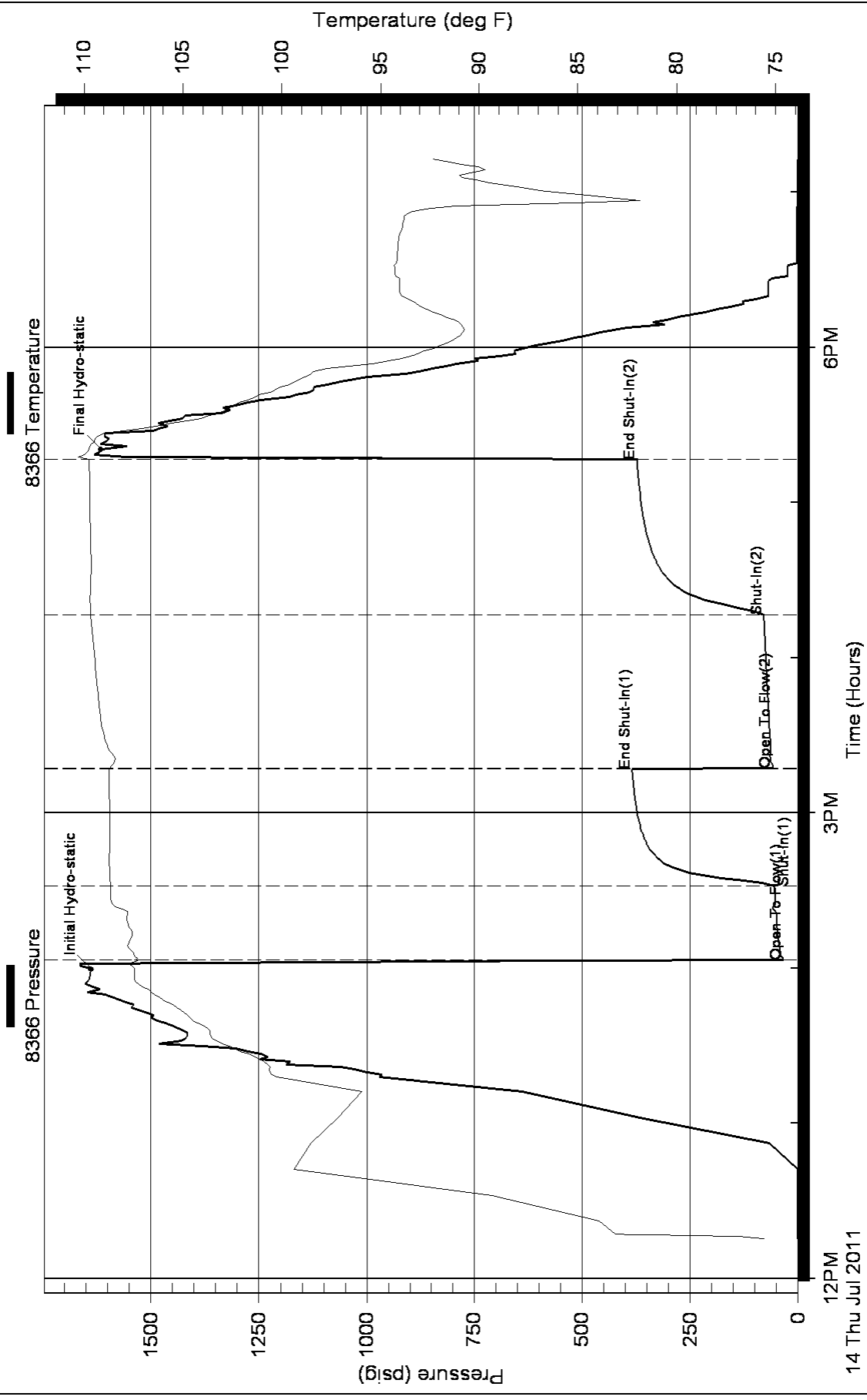
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
63.00	SO/MW 54%w , 41%m, 3%g, 2%o	0.884
78.00	OCM 88%m, 11%o, 1%g	1.094

Total Length: 141.00 ft Total Volume: 1.978 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW = .184 ohms @ 94.9 deg F
 Chlorides = 28,000 ppm

Pressure vs. Time





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TDI Inc.
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 45180 **DST#: 2**
Test Start: 2011.07.15 @ 03:42:00

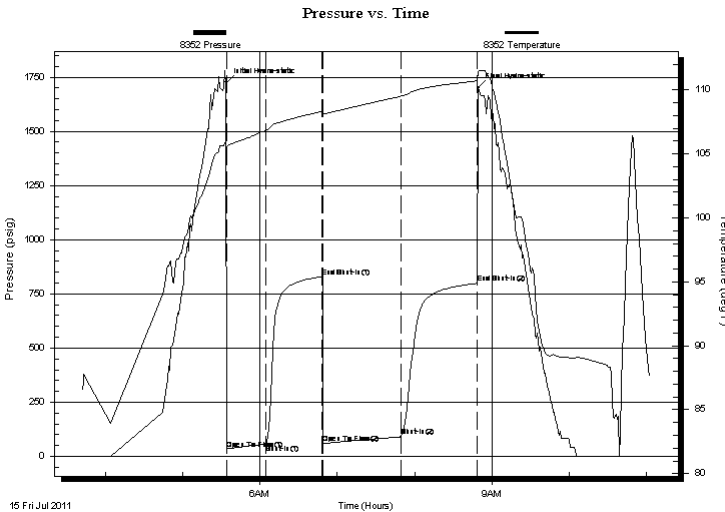
GENERAL INFORMATION:

Formation: **KC "D-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:33:50
Time Test Ended: 11:02:39
Interval: **3524.00 ft (KB) To 3574.00 ft (KB) (TVD)**
Total Depth: 3574.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Cody Bloedorn
Unit No: 38
Reference Elevations: 2198.00 ft (KB)
2188.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8352 **Inside**
Press @ Run Depth: 90.64 psig @ 3563.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.07.15 End Date: 2011.07.15 Last Calib.: 2011.07.15
Start Time: 03:42:05 End Time: 11:02:39 Time On Btm: 2011.07.15 @ 05:33:40
Time Off Btm: 2011.07.15 @ 08:49:30

TEST COMMENT: 30 - IF- 4" blow
45 - IS- No blow back
60 - FF- 1" blow
60 - FS- no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1725.78	105.94	Initial Hydro-static
1	34.76	105.13	Open To Flow (1)
31	56.21	106.83	Shut-In(1)
75	829.00	108.33	End Shut-In(1)
76	60.37	108.09	Open To Flow (2)
136	90.64	109.50	Shut-In(2)
195	798.75	110.71	End Shut-In(2)
196	1700.85	111.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW, Oil scum 40%O, 60%W	0.87
62.00	VSO CWM 5%O, 10%W, 85%M	0.87
20.00	Free Oil	0.28

Gas Rates

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



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TDI Inc.
1310 Bison Rd
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ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 45180 **DST#: 2**
Test Start: 2011.07.15 @ 03:42:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 27 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 34000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.40 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2800.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	MW, Oil scrum 40%M, 60%W	0.870
62.00	VSOCWM 5%O, 10%W, 85%M	0.870
20.00	Free Oil	0.281

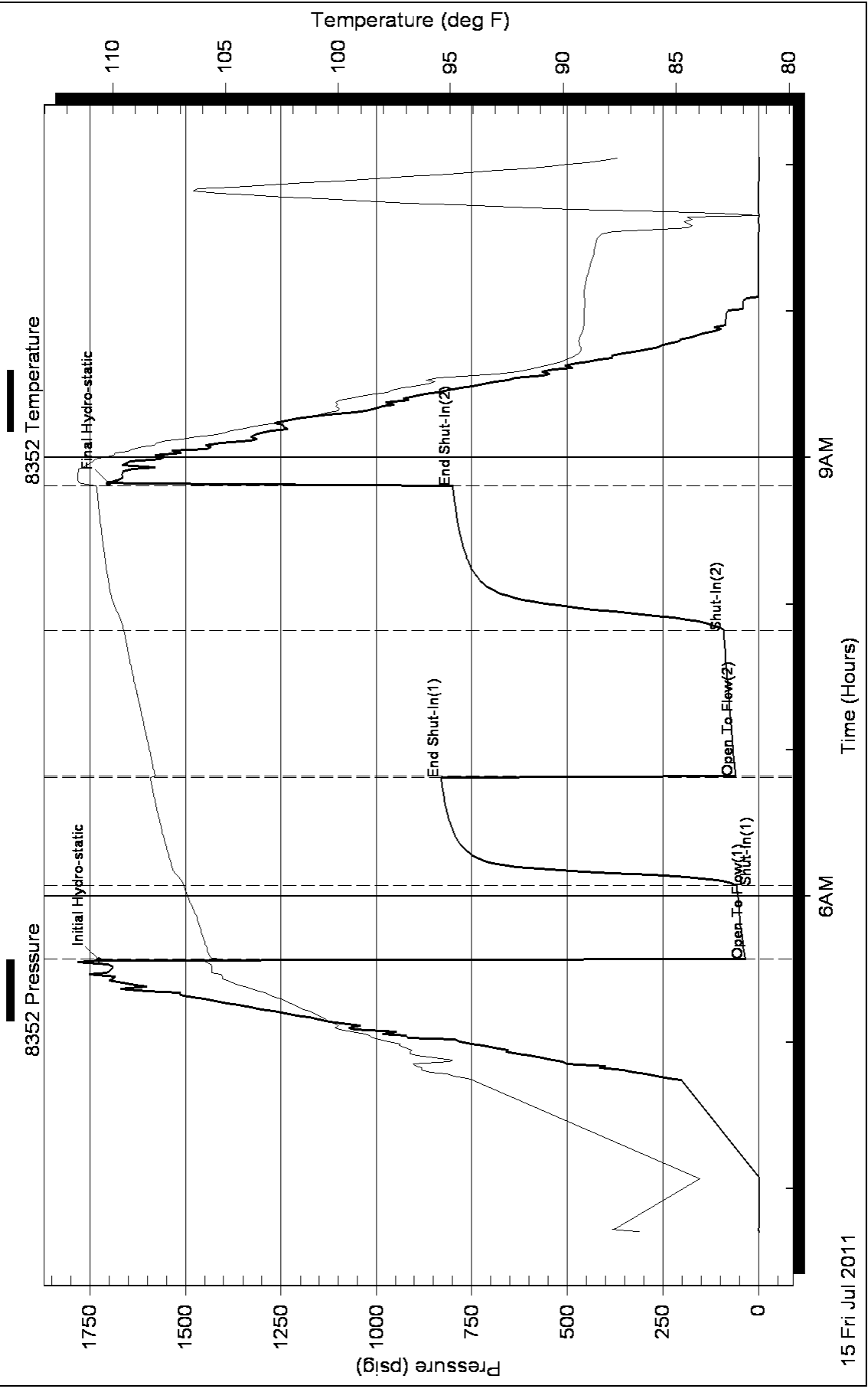
Total Length: 144.00 ft Total Volume: 2.021 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Water Salinity: .13 @ 101 Degees = 34,000
Oil Gravity: 30 @ 96 Degrees = 27

Pressure vs. Time





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DRILL STEM TEST REPORT

TDI Inc.
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 45181 **DST#: 3**
Test Start: 2011.07.16 @ 00:34:00

GENERAL INFORMATION:

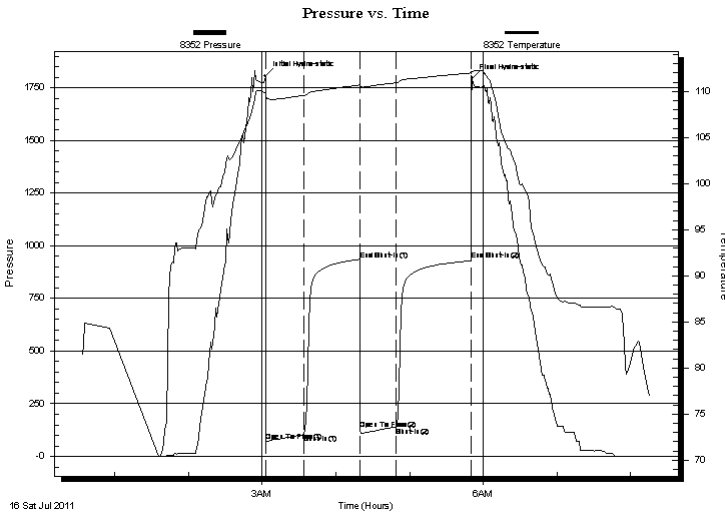
Formation: **KC "H-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:03:10
 Time Test Ended: 08:15:20
 Interval: **3600.00 ft (KB) To 3720.00 ft (KB) (TVD)**
 Total Depth: 3720.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole
 Tester: Cody Bloedorn
 Unit No: 38
 Reference Elevations: 2198.00 ft (KB)
 2188.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8352 Outside

Press @ Run Depth: 140.04 psig @ 3701.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.07.16 End Date: 2011.07.16 Last Calib.: 2011.07.16
 Start Time: 00:34:05 End Time: 08:15:20 Time On Btm: 2011.07.16 @ 03:03:00
 Time Off Btm: 2011.07.16 @ 05:51:09

TEST COMMENT: 30 - IF- B.O.B. in 6 Min.
 45 - IS- 1/2" blow , died in 22 Min.
 30 - FF- B.O.B. In 8 Min
 60 - FS- 7" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1807.68	109.73	Initial Hydro-static
1	69.56	108.96	Open To Flow (1)
31	104.59	109.56	Shut-In(1)
77	934.26	110.70	End Shut-In(1)
77	128.89	110.23	Open To Flow (2)
107	140.04	110.94	Shut-In(2)
168	930.98	111.95	End Shut-In(2)
169	1794.35	112.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GO, 10%G, 90%O	0.87
62.00	GO, 40%G, 60%O	0.87
62.00	GOCM, 10%O, 20%G, 70%M	0.87
62.00	GMCO, 5%M, 35%G, 60%O	0.87
0.00	17 Stands of G.I.P.	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 45181 **DST#: 3**
Test Start: 2011.07.16 @ 00:34:00

Mud and Cushion Information

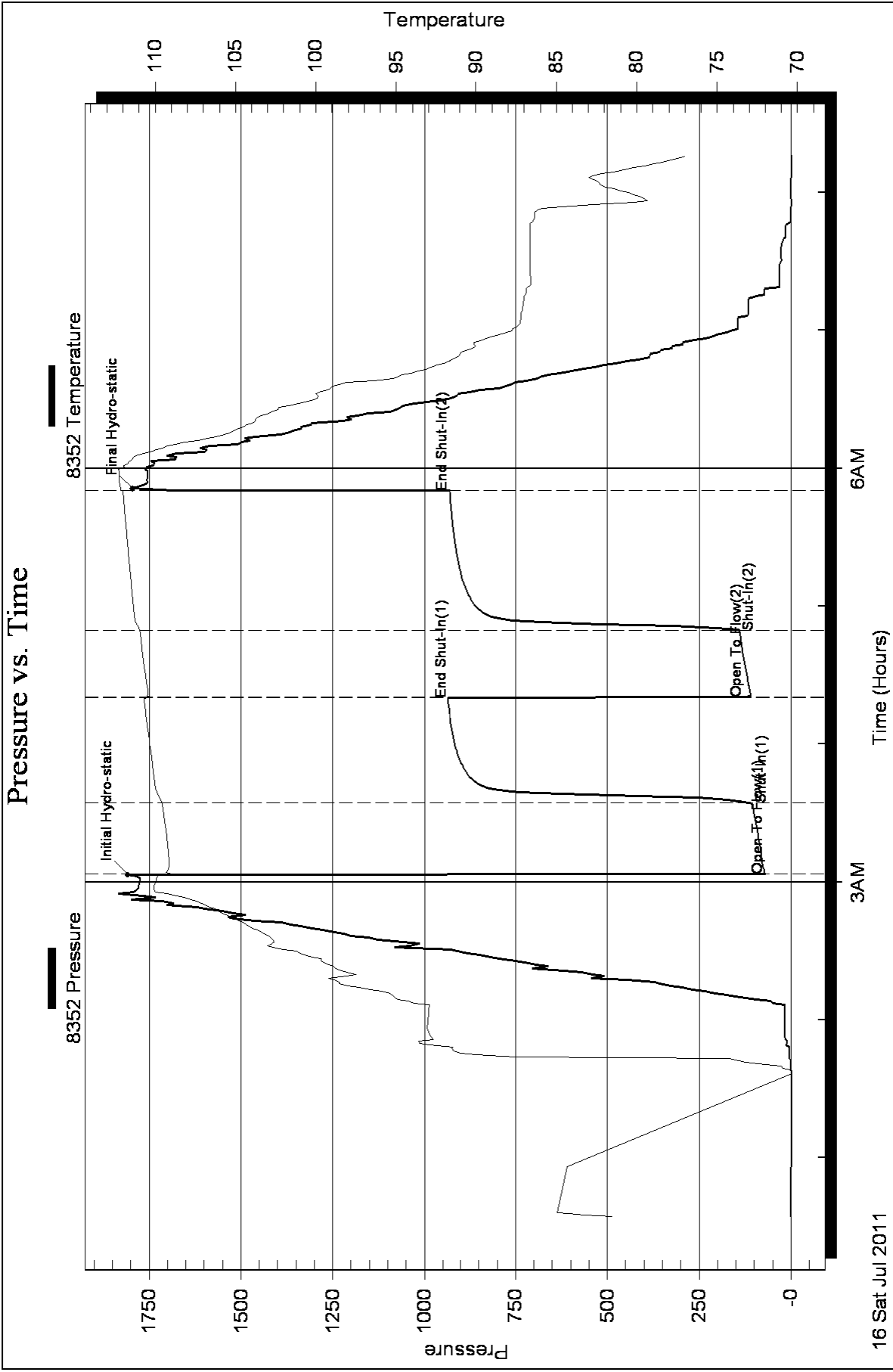
Mud Type: Gel Chem	Cushion Type:	Oil API: 33 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.39 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2800.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	GO, 10%G, 90%O	0.870
62.00	GO, 40%G, 60%O	0.870
62.00	GOCM, 10%O, 20%G, 70%M	0.870
62.00	GMCO, 5%M, 35%G, 60%O	0.870
0.00	17 Stands of G.I.P.	0.000

Total Length: 248.00 ft Total Volume: 3.480 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: Gravity: 35 @ 80 Degrees = 33 Gravity





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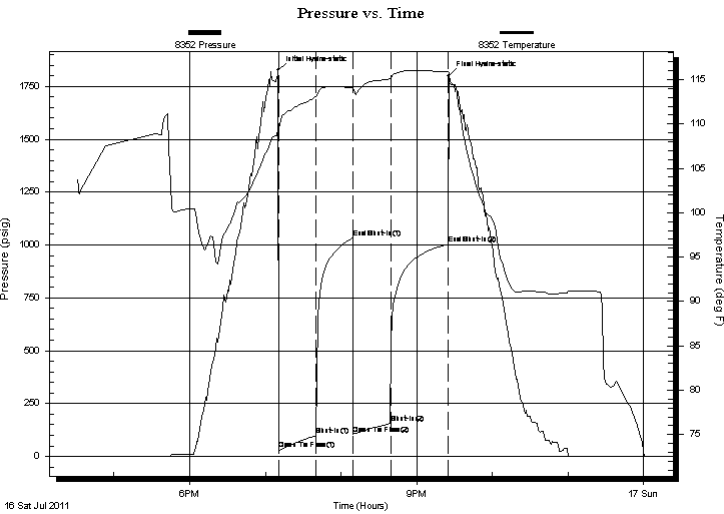
Miller #1
19/12s/18w Ellis KS
Job Ticket: 45182 **DST#: 4**
Test Start: 2011.07.16 @ 16:31:00

GENERAL INFORMATION:

Formation: CG Sand			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole	
Time Tool Opened: 19:10:20		Tester: Cody Bloedorn	
Time Test Ended: 00:01:00		Unit No: 38	
Interval: 3756.00 ft (KB) To 3785.00 ft (KB) (TVD)		Reference Elevations: 2198.00 ft (KB)	
Total Depth: 3785.00 ft (KB) (TVD)		2188.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 10.00 ft	

Serial #: 8352	Inside			
Press @ Run Depth: 156.36 psig @ 3757.00 ft (KB)		Capacity: 8000.00 psig		
Start Date: 2011.07.16	End Date: 2011.07.17	Last Calib.: 2011.07.17		
Start Time: 16:31:05	End Time: 00:00:59	Time On Btm: 2011.07.16 @ 19:10:10		
		Time Off Btm: 2011.07.16 @ 21:25:30		

TEST COMMENT: 30 - IF- B.O.B. in 15 Min
30 - IS- Weak surface blow
30 - FF- B.O.B. in 18 Min, 30 Sec.
45 - FS- Surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1825.37	109.72	Initial Hydro-static
1	33.06	109.17	Open To Flow (1)
30	98.35	113.08	Shut-In(1)
60	1031.99	114.13	End Shut-In(1)
60	105.80	113.55	Open To Flow (2)
90	156.36	115.07	Shut-In(2)
135	1003.28	115.89	End Shut-In(2)
136	1799.80	115.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GMCO, 10%M, 15%G, 75%O	0.87
124.00	GHOCM, 10%M, 50%O, 40%G	1.74
155.00	GO, 5%G, 95%O	2.17

Gas Rates

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



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ATTN: Herb Deines

Miller #1
19/12s/18w Ellis KS
Job Ticket: 45182 **DST#: 4**
Test Start: 2011.07.16 @ 16:31:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 18 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 41.00 sec/qt	Cushion Volume: bbl	
Water Loss: 11.19 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 5500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	GMCO, 10%M, 15%G, 75%O	0.870
124.00	GHOCM, 10%M, 50%O, 40%G	1.739
155.00	GO, 5%G, 95%O	2.174

Total Length: 341.00 ft Total Volume: 4.783 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: Gravity: 20 @ 80 Degrees = 18 Gravity

