



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Michel Runnion

Befort #1-12

12-15s-19w Ellis,KS

Start Date: 2013.03.05 @ 02:41:00

End Date: 2013.03.05 @ 09:39:54

Job Ticket #: 50363 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.11 @ 13:25:07



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50363 **DST#: 1**
Test Start: 2013.03.05 @ 02:41:00

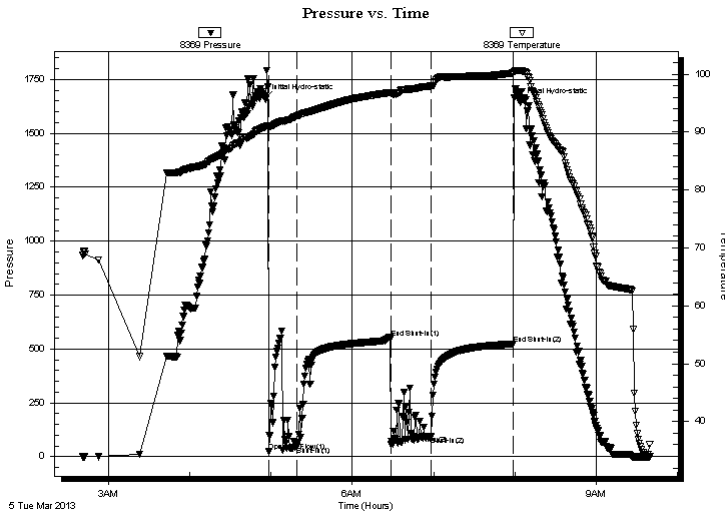
GENERAL INFORMATION:

Formation: **LKC A-D**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:58:10
Time Test Ended: 09:39:54
Interval: **3337.00 ft (KB) To 3410.00 ft (KB) (TVD)**
Total Depth: 3410.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 42
Reference Elevations: 2065.00 ft (KB)
2054.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8369 Inside
Press @ Run Depth: 94.22 psig @ 3343.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.05 End Date: 2013.03.05 Last Calib.: 2013.03.05
Start Time: 02:41:00 End Time: 09:39:54 Time On Btm: 2013.03.05 @ 04:55:25
Time Off Btm: 2013.03.05 @ 08:04:09

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 1/4" bl
60-ISIP-no bl
30-FFP-no bl
60-FSIP-no bl

PRESSURE SUMMARY



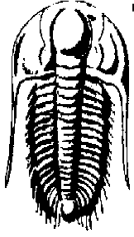
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.27	90.88	Initial Hydro-static
3	23.60	90.70	Open To Flow (1)
24	46.69	92.81	Shut-In(1)
93	551.49	96.82	End Shut-In(1)
94	56.31	96.65	Open To Flow (2)
123	94.22	97.96	Shut-In(2)
184	523.38	100.19	End Shut-In(2)
189	1644.06	100.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
130.00	Mud	0.64

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
 Job Ticket: 50363 **DST#: 1**
 Test Start: 2013.03.05 @ 02:41:00

GENERAL INFORMATION:

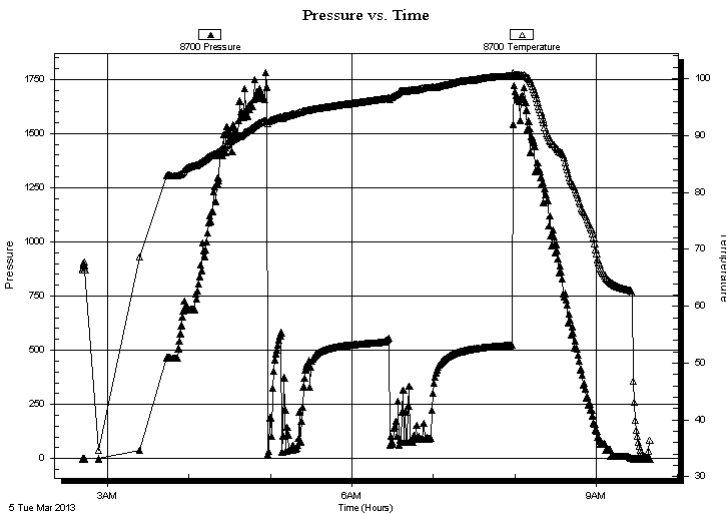
Formation: **LKC A-D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 04:58:10 Tester: Ray Schwager
 Time Test Ended: 09:39:54 Unit No: 42
 Interval: **3337.00 ft (KB) To 3410.00 ft (KB) (TVD)**
 Reference Elevations: 2065.00 ft (KB)
 Total Depth: 3410.00 ft (KB) (TVD) 2054.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 8700 Outside

Press @ RunDepth:	psig @	3343.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2013.03.05	End Date:	2013.03.05	Last Calib.:	2013.03.05
Start Time:	02:41:35	End Time:	09:39:14	Time On Btm:	
			Time Off Btm:		

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 1/4" bl
 60-ISIP-no bl
 30-FFP-no bl
 60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
130.00	Mud	0.64

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50363 **DST#: 1**
Test Start: 2013.03.05 @ 02:41:00

Tool Information

Drill Pipe:	Length: 3150.00 ft	Diameter: 3.80 inches	Volume: 44.19 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 45.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3337.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	96.00 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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Change Over Sub	1.00			3315.00	
Shut In Tool	5.00			3320.00	
Hydraulic tool	5.00			3325.00	
Safety Joint	2.00			3327.00	
Packer	5.00			3332.00	23.00 Bottom Of Top Packer
Packer	5.00			3337.00	
Stubb	1.00			3338.00	
Perforations	5.00			3343.00	
Recorder	0.00	8369	Inside	3343.00	
Recorder	0.00	8700	Outside	3343.00	
Blank Spacing	64.00			3407.00	
Bullnose	3.00			3410.00	73.00 Bottom Packers & Anchor

Total Tool Length: 96.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50363 **DST#: 1**
Test Start: 2013.03.05 @ 02:41:00

Mud and Cushion Information

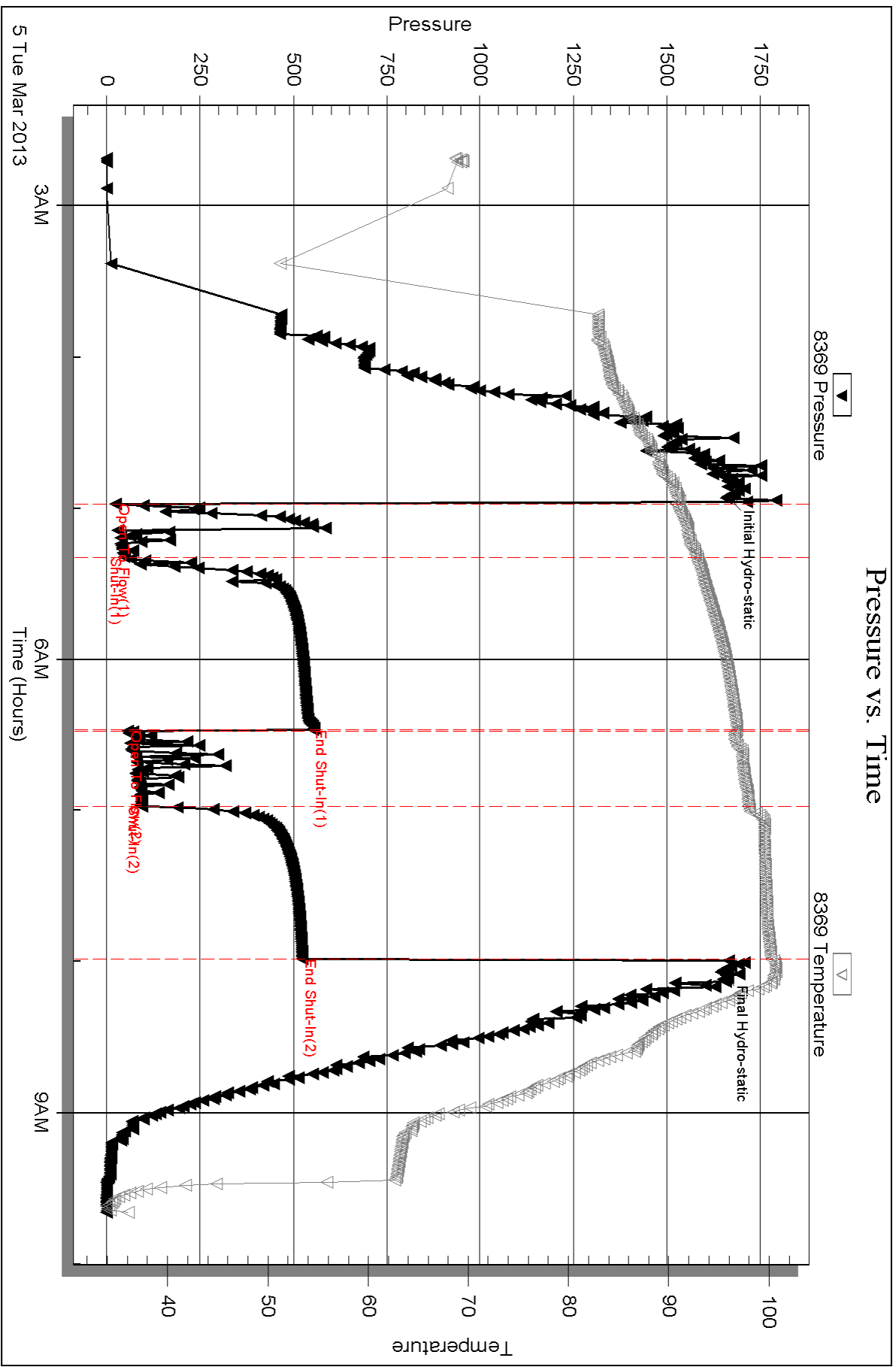
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.15 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3700.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
130.00	Mud	0.639

Total Length: 130.00 ft Total Volume: 0.639 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

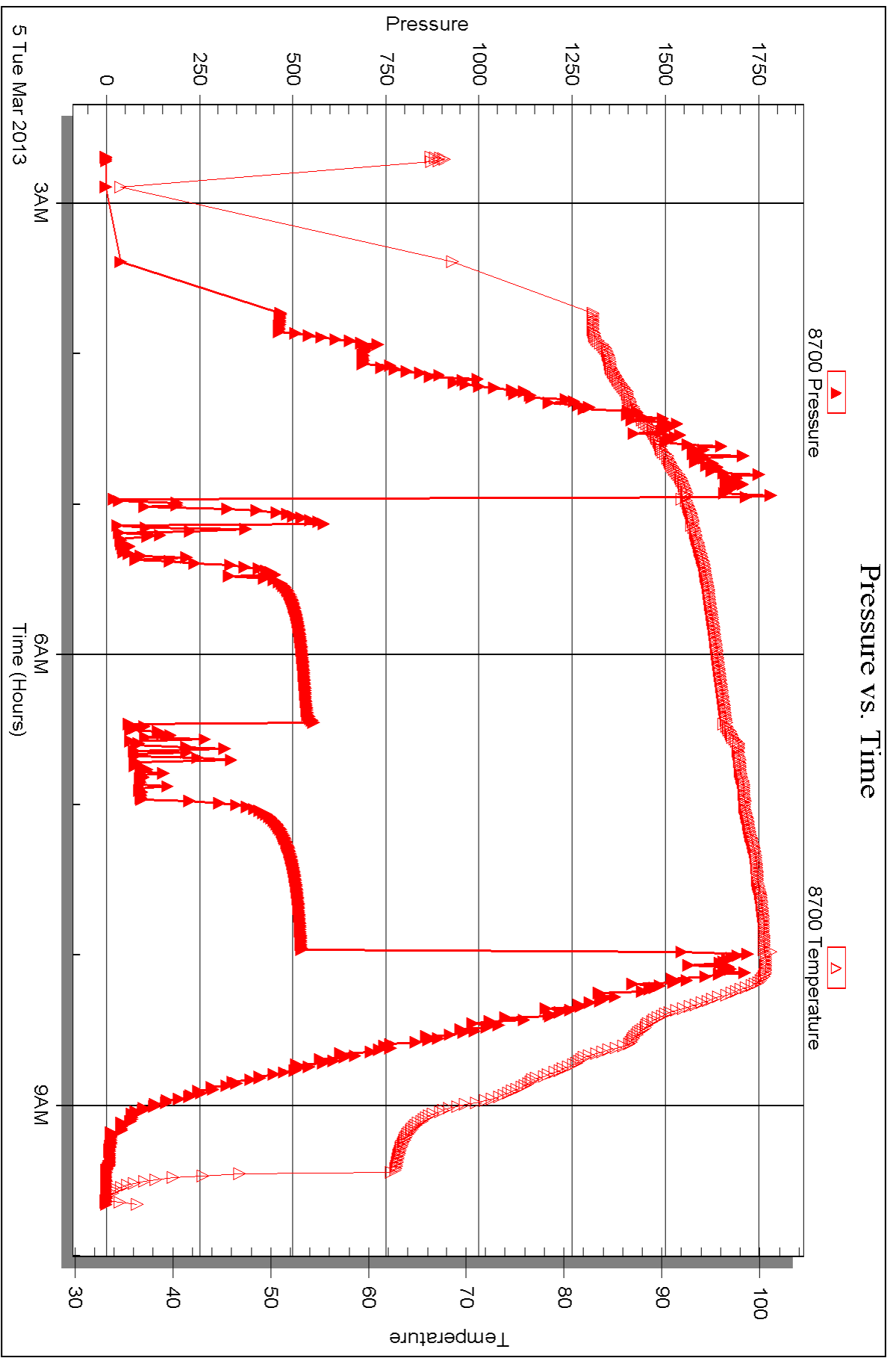


Serial #: 8700

Outside Murfin Drilling Co Inc

Before: #1-12

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 50363

Printed: 2013.03.11 @ 13:25:10



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Michel Runnion

Befort #1-12

12-15s-19w Ellis,KS

Start Date: 2013.03.06 @ 02:50:20

End Date: 2013.03.06 @ 09:02:29

Job Ticket #: 50364 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.11 @ 13:24:23



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
 Job Ticket: 50364 **DST#: 2**
 Test Start: 2013.03.06 @ 02:50:20

GENERAL INFORMATION:

Formation: **LKC H-J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:17:00
 Time Test Ended: 09:02:29
 Interval: **3466.00 ft (KB) To 3542.00 ft (KB) (TVD)**
 Total Depth: 3542.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2065.00 ft (KB)
 2054.00 ft (CF)
 KB to GR/CF: 11.00 ft

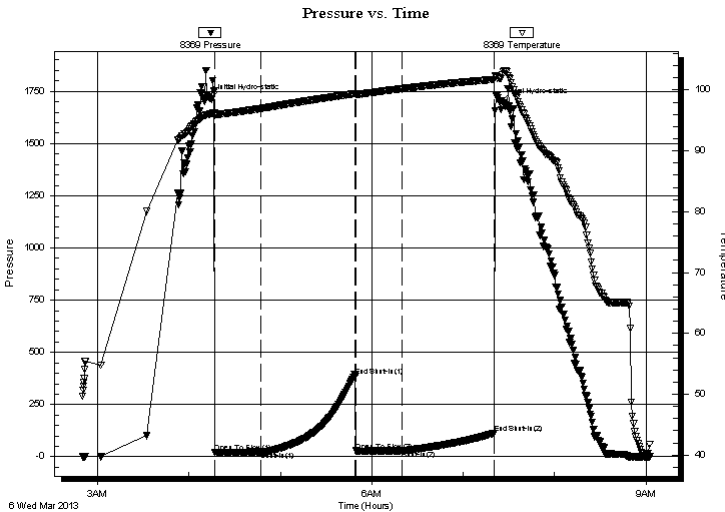
Serial #: 8369

Inside

Press @ Run Depth: 29.04 psig @ 3475.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.06 End Date: 2013.03.06 Last Calib.: 2013.03.06
 Start Time: 02:50:20 End Time: 09:02:29 Time On Btm: 2013.03.06 @ 04:14:30
 Time Off Btm: 2013.03.06 @ 07:24:14

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" bl
 60-ISIP-no bl
 30-FFP-surface bl , died in 20 min
 60-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1713.57	96.10	Initial Hydro-static
3	19.84	95.83	Open To Flow (1)
33	23.98	96.97	Shut-In(1)
95	384.74	99.42	End Shut-In(1)
95	28.27	99.30	Open To Flow (2)
125	29.04	100.23	Shut-In(2)
186	113.51	101.77	End Shut-In(2)
190	1696.46	101.94	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 5% O95%M	0.05

* Recovery from multiple tests

Gas Rates

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



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Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Michel Runnion

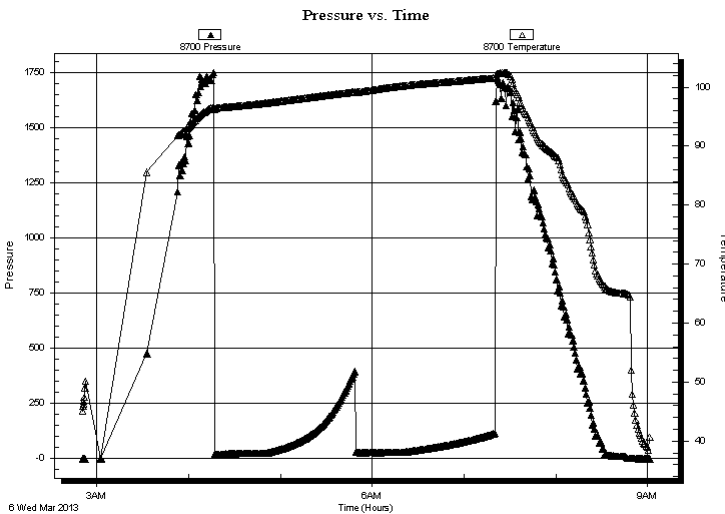
12-15s-19w Ellis,KS
Before #1-12
 Job Ticket: 50364 **DST#: 2**
 Test Start: 2013.03.06 @ 02:50:20

GENERAL INFORMATION:

Formation: **LKC H-J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 04:17:00 Tester: Ray Schwager
 Time Test Ended: 09:02:29 Unit No: 42
Interval: 3466.00 ft (KB) To 3542.00 ft (KB) (TVD) Reference Elevations: 2065.00 ft (KB)
 Total Depth: 3542.00 ft (KB) (TVD) 2054.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 8700 **Outside**
 Press @ Run Depth: psig @ 3475.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.06 End Date: 2013.03.06 Last Calib.: 2013.03.06
 Start Time: 02:50:47 End Time: 09:01:41 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" bl
 60-ISIP-no bl
 30-FFP-surface bl , died in 20 min
 60-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	SOCM 5% O95% M	0.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50364 **DST#: 2**
Test Start: 2013.03.06 @ 02:50:20

Tool Information

Drill Pipe:	Length: 3274.00 ft	Diameter: 3.80 inches	Volume: 45.93 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 46.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3466.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	99.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3444.00	
Shut In Tool	5.00			3449.00	
Hydraulic tool	5.00			3454.00	
Safety Joint	2.00			3456.00	
Packer	5.00			3461.00	23.00 Bottom Of Top Packer
Packer	5.00			3466.00	
Stubb	1.00			3467.00	
Perforations	8.00			3475.00	
Recorder	0.00	8369	Inside	3475.00	
Recorder	0.00	8700	Outside	3475.00	
Blank Spacing	64.00			3539.00	
Bullnose	3.00			3542.00	76.00 Bottom Packers & Anchor

Total Tool Length: 99.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50364 **DST#: 2**
Test Start: 2013.03.06 @ 02:50:20

Mud and Cushion Information

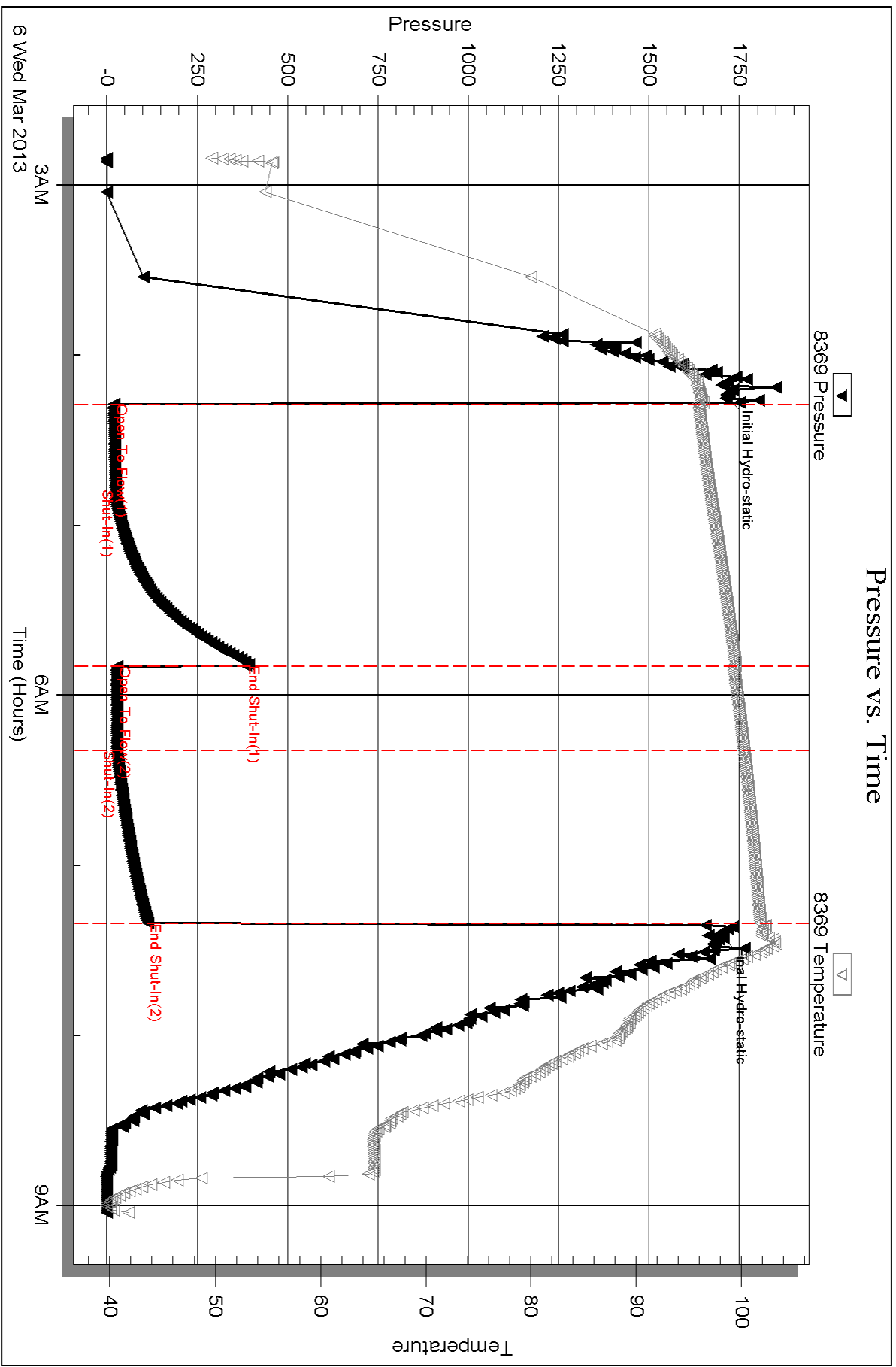
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 10.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.76 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3900.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	SOCM5%O95%M	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:

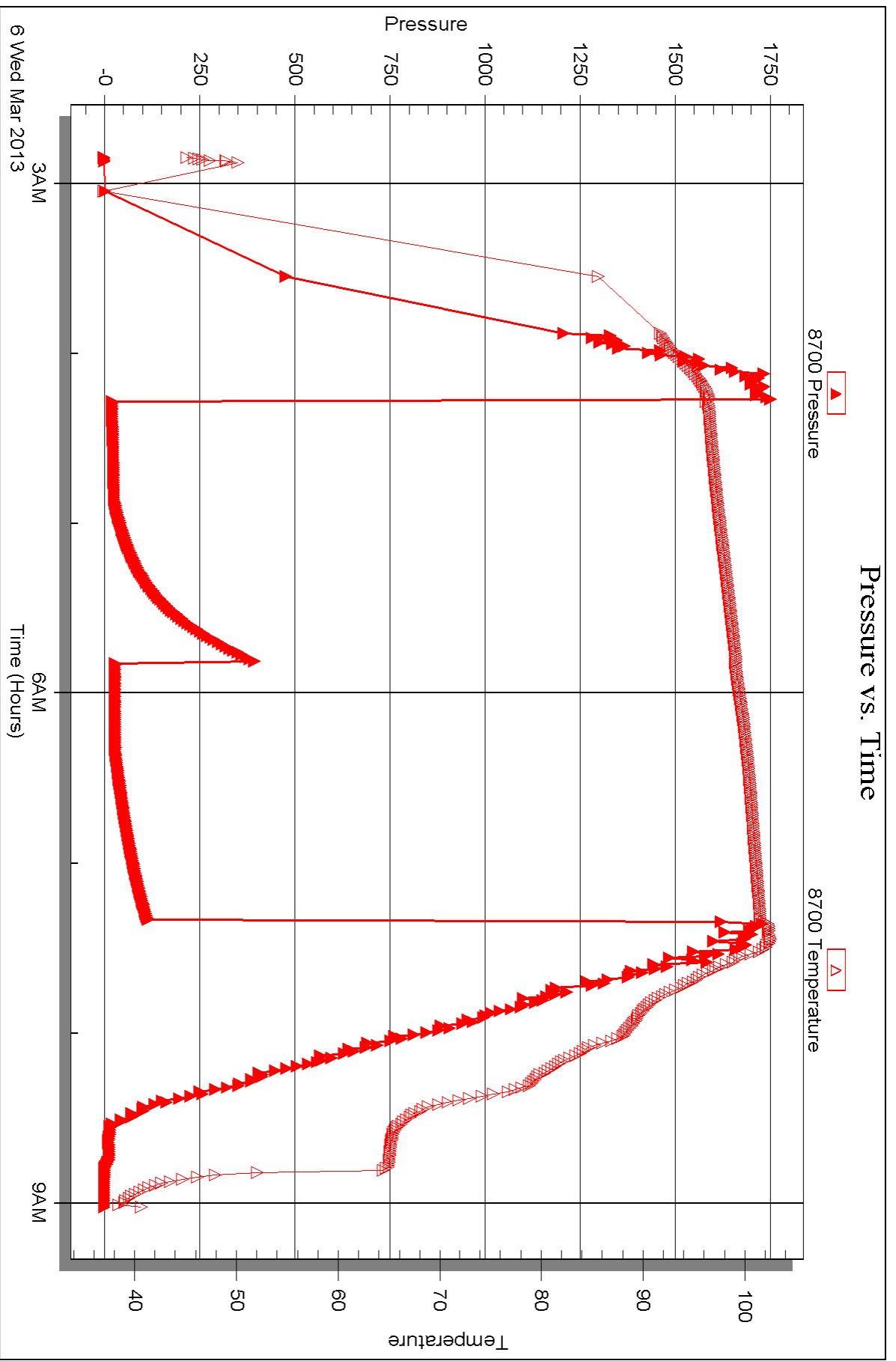


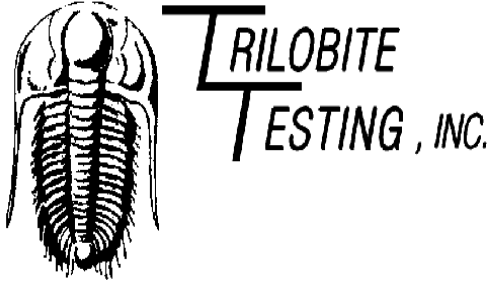
Serial #: 8700

Outside Murfin Drilling Co Inc

Beform#1-12

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Michel Runnion

Befort #1-12

12-15s-19w Ellis,KS

Start Date: 2013.03.07 @ 01:05:32

End Date: 2013.03.07 @ 09:14:41

Job Ticket #: 50366 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.11 @ 13:23:37



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
 Job Ticket: 50366 **DST#: 3**
 Test Start: 2013.03.07 @ 01:05:32

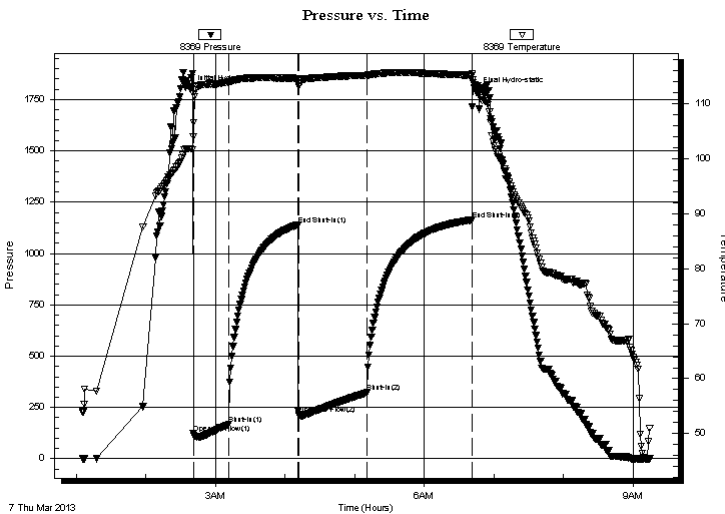
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 02:40:57 Tester: Ray Schwager
 Time Test Ended: 09:14:41 Unit No: 42
 Interval: **2660.00 ft (KB) To 3670.00 ft (KB) (TVD)** Reference Elevations: 2065.00 ft (KB)
 Total Depth: 3670.00 ft (KB) (TVD) 2054.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 8369 Inside
 Press @ Run Depth: 321.98 psig @ 3651.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.07 End Date: 2013.03.07 Last Calib.: 2013.03.07
 Start Time: 01:05:32 End Time: 09:14:41 Time On Btm: 2013.03.07 @ 02:38:42
 Time Off Btm: 2013.03.07 @ 06:44:56

TEST COMMENT: 30-IFP-w k to strg in 20 min
 60-ISIP-1/4" bl bk
 60-FFP-w k to strg in 7 min
 90-FSIP-1/4" bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1798.95	101.89	Initial Hydro-static
3	123.73	104.05	Open To Flow (1)
33	167.39	113.98	Shut-In(1)
93	1137.63	114.65	End Shut-In(1)
93	218.20	113.12	Open To Flow (2)
152	321.98	115.19	Shut-In(2)
243	1163.48	115.21	End Shut-In(2)
247	1786.58	112.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
870.00	CO	10.56
0.00	60'GiP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Michel Runnion

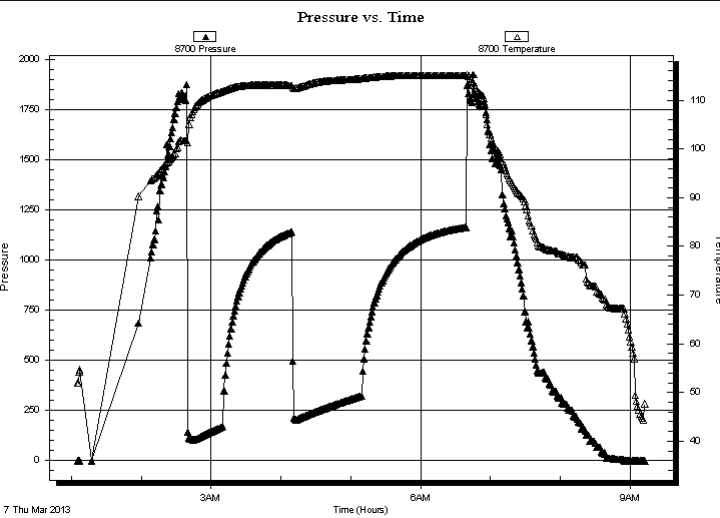
12-15s-19w Ellis,KS
Before #1-12
 Job Ticket: 50366 **DST#: 3**
 Test Start: 2013.03.07 @ 01:05:32

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 02:40:57 Tester: Ray Schwager
 Time Test Ended: 09:14:41 Unit No: 42
 Interval: **2660.00 ft (KB) To 3670.00 ft (KB) (TVD)** Reference Elevations: 2065.00 ft (KB)
 Total Depth: 3670.00 ft (KB) (TVD) 2054.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 8700 Outside
 Press @ Run Depth: psig @ 3651.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.07 End Date: 2013.03.07 Last Calib.: 2013.03.07
 Start Time: 01:05:32 End Time: 09:12:56 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-w k to strg in 20 min
 60-ISIP-1/4" bl bk
 60-FFP-w k to strg in 7 min
 90-FSIP-1/4" bl bk



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
870.00	CO	10.56
0.00	60'GiP	0.00

* Recovery from multiple tests

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Befort #1-12
Job Ticket: 50366 **DST#: 3**
Test Start: 2013.03.07 @ 01:05:32

Tool Information

Drill Pipe:	Length: 3469.00 ft	Diameter: 3.80 inches	Volume: 48.66 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 49.55 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3650.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	10.00 ft				
Tool Length:	33.00 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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Change Over Sub	1.00			3628.00	
Shut In Tool	5.00			3633.00	
Hydraulic tool	5.00			3638.00	
Safety Joint	2.00			3640.00	
Packer	5.00			3645.00	23.00 Bottom Of Top Packer
Packer	5.00			3650.00	
Stubb	1.00			3651.00	
Recorder	0.00	8369	Inside	3651.00	
Recorder	0.00	8700	Outside	3651.00	
Perforations	6.00			3657.00	
Bullnose	3.00			3660.00	10.00 Bottom Packers & Anchor

Total Tool Length: 33.00



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FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50366 **DST#: 3**
Test Start: 2013.03.07 @ 01:05:32

Mud and Cushion Information

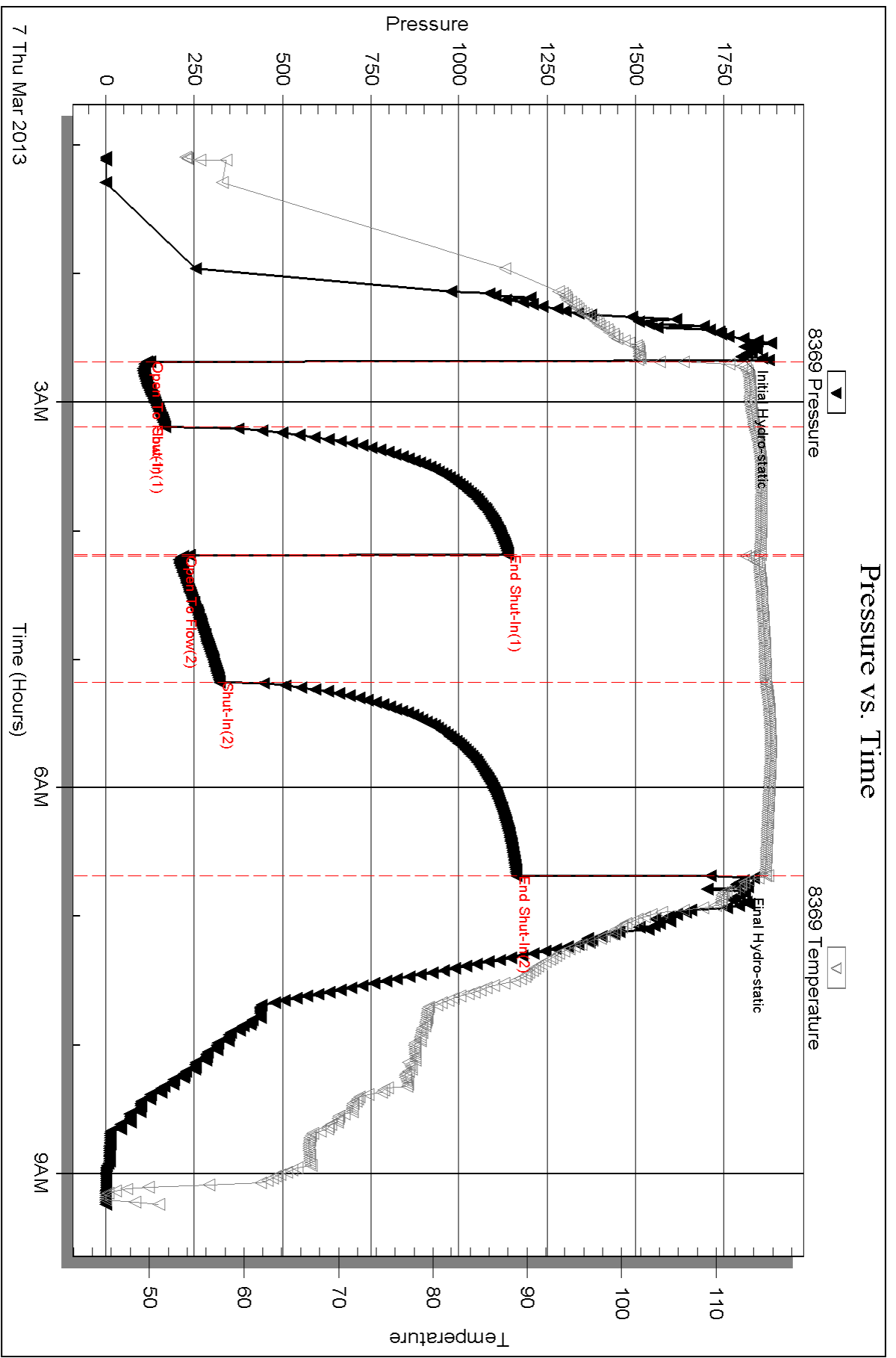
Mud Type: Gel Chem	Cushion Type:	Oil API: 22 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.78 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3900.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
870.00	CO	10.564
0.00	60'GiP	0.000

Total Length: 870.00 ft Total Volume: 10.564 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

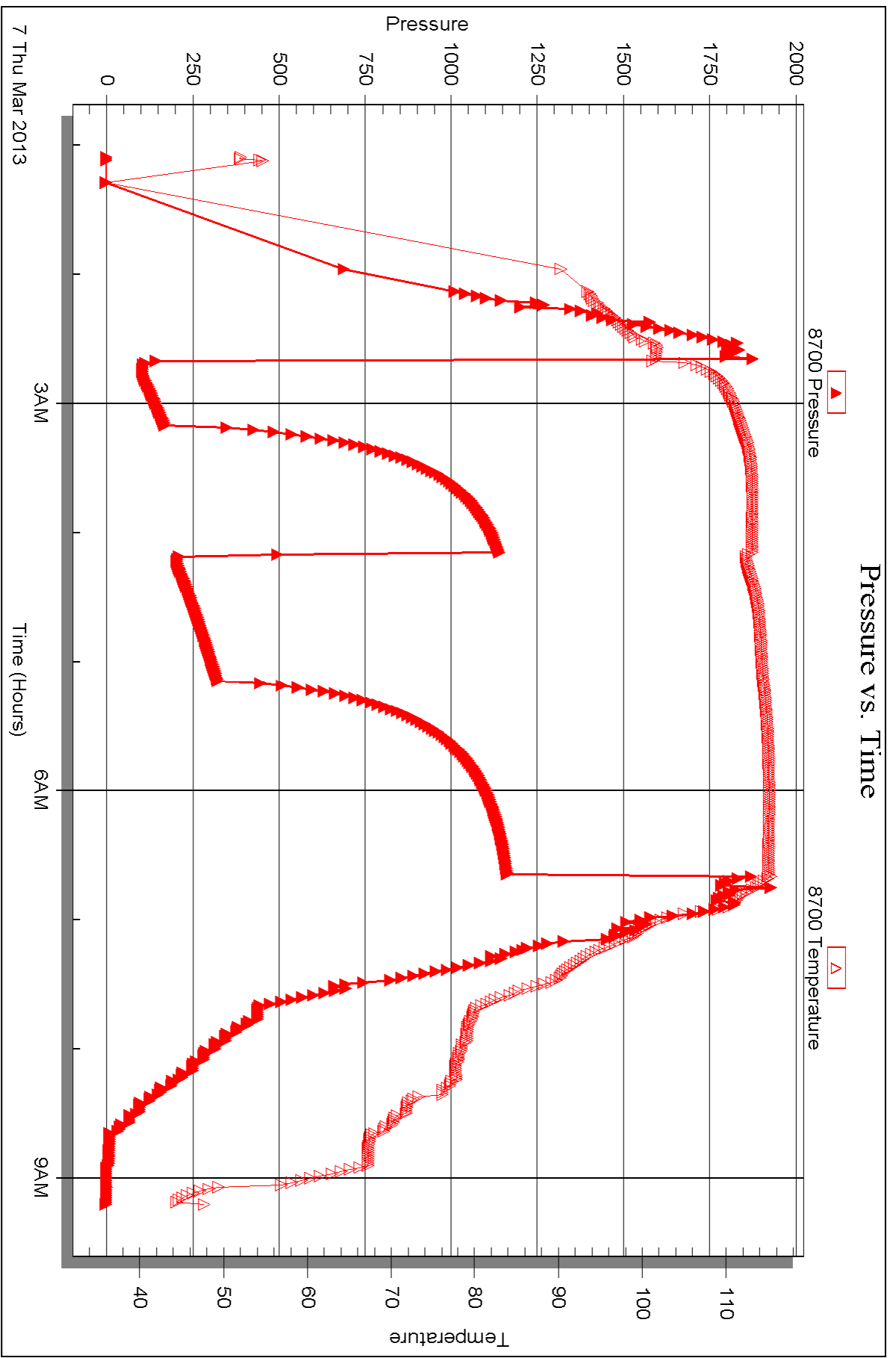


Serial #: 8700

Outside Murfin Drilling Co Inc

Beformt#1-12

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 50366

Printed: 2013.03.11 @ 13:23:40



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Michel Runnion

Befort #1-12

12-15s-19w Ellis,KS

Start Date: 2013.03.07 @ 15:03:00

End Date: 2013.03.07 @ 21:57:00

Job Ticket #: 50366 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.03.11 @ 13:22:10



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Before #1-12
Job Ticket: 50366 **DST#: 4**
Test Start: 2013.03.07 @ 15:03:00

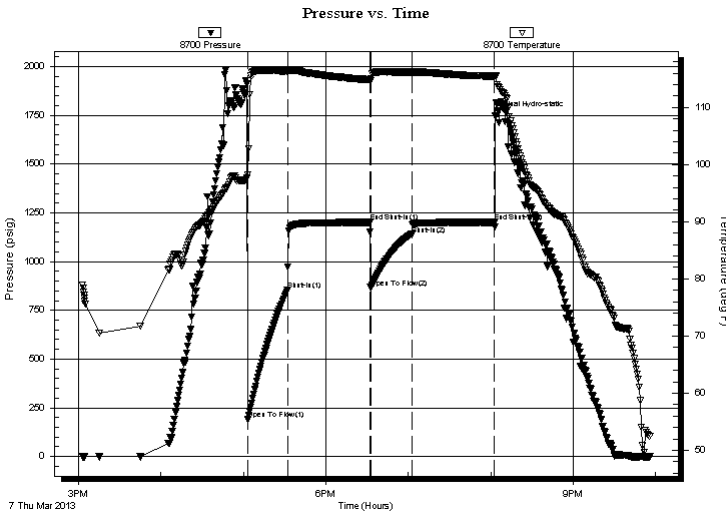
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:03:00
Time Test Ended: 21:57:00
Interval: **3660.00 ft (KB) To 3670.00 ft (KB) (TVD)**
Total Depth: 3670.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 42
Reference Elevations: 2065.00 ft (KB)
2054.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8700 Outside
Press @ Run Depth: 1139.74 psig @ 3667.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.07 End Date: 2013.03.07 Last Calib.: 2013.03.07
Start Time: 15:03:05 End Time: 21:55:29 Time On Btm: 2013.03.07 @ 17:02:30
Time Off Btm: 2013.03.07 @ 20:03:30

TEST COMMENT: 30-IFP- BOB in 1min.
60-ISIP- No Return
30-FFP- BOB in 1min.
60-FSIP- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1913.89	97.59	Initial Hydro-static
1	188.74	98.25	Open To Flow (1)
30	853.70	116.37	Shut-In(1)
90	1201.29	114.82	End Shut-In(1)
90	866.27	114.66	Open To Flow (2)
120	1139.74	116.14	Shut-In(2)
181	1201.70	115.42	End Shut-In(2)
181	1746.38	115.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1349.00	Water 100%	17.28
693.00	Water - Show of Oil 100%	9.72
461.00	OMCW 2%o 30% m 68% w	6.47

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

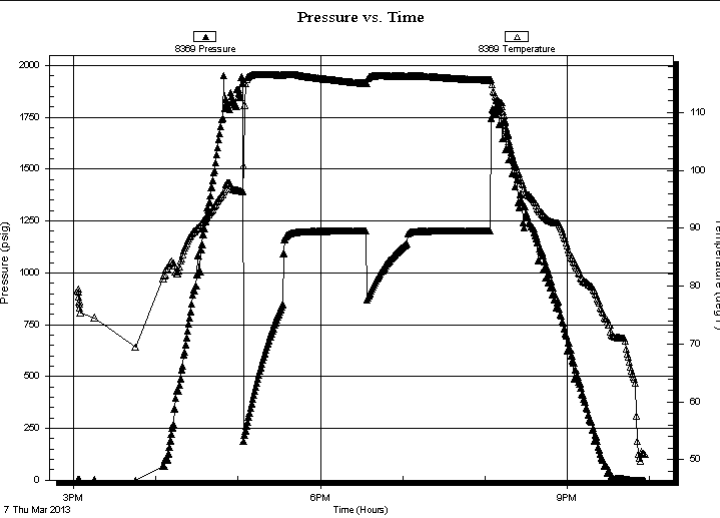
12-15s-19w Ellis,KS
Befort #1-12
Job Ticket: 50366 **DST#: 4**
Test Start: 2013.03.07 @ 15:03:00

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:03:00
Time Test Ended: 21:57:00
Interval: **3660.00 ft (KB) To 3670.00 ft (KB) (TVD)**
Total Depth: 3670.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 42
Reference Elevations: 2065.00 ft (KB)
2054.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8369 Inside
Press @ Run Depth: psig @ 3667.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.07 End Date: 2013.03.07 Last Calib.: 2013.03.07
Start Time: 15:03:05 End Time: 21:56:44 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 1min.
60-ISIP- No Return
30-FFP- BOB in 1min.
60-FSIP- No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
1349.00	Water 100%	17.28
693.00	Water - Show of Oil 100%	9.72
461.00	OMCW 2%o 30% m 68% w	6.47

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Befort #1-12
Job Ticket: 50366 **DST#: 4**
Test Start: 2013.03.07 @ 15:03:00

Tool Information

Drill Pipe:	Length: 3463.00 ft	Diameter: 3.80 inches	Volume: 48.58 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 49.47 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3660.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	33.00 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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Change Over Sub	1.00			3638.00	
Shut In Tool	5.00			3643.00	
Hydraulic tool	5.00			3648.00	
Safety Joint	2.00			3650.00	
Packer	5.00			3655.00	23.00 Bottom Of Top Packer
Packer	5.00			3660.00	
Stubb	1.00			3661.00	
Perforations	6.00			3667.00	
Recorder	0.00	8369	Inside	3667.00	
Recorder	0.00	8700	Outside	3667.00	
Bullnose	3.00			3670.00	10.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Michel Runnion

12-15s-19w Ellis,KS
Befort #1-12
Job Ticket: 50366 **DST#: 4**
Test Start: 2013.03.07 @ 15:03:00

Mud and Cushion Information

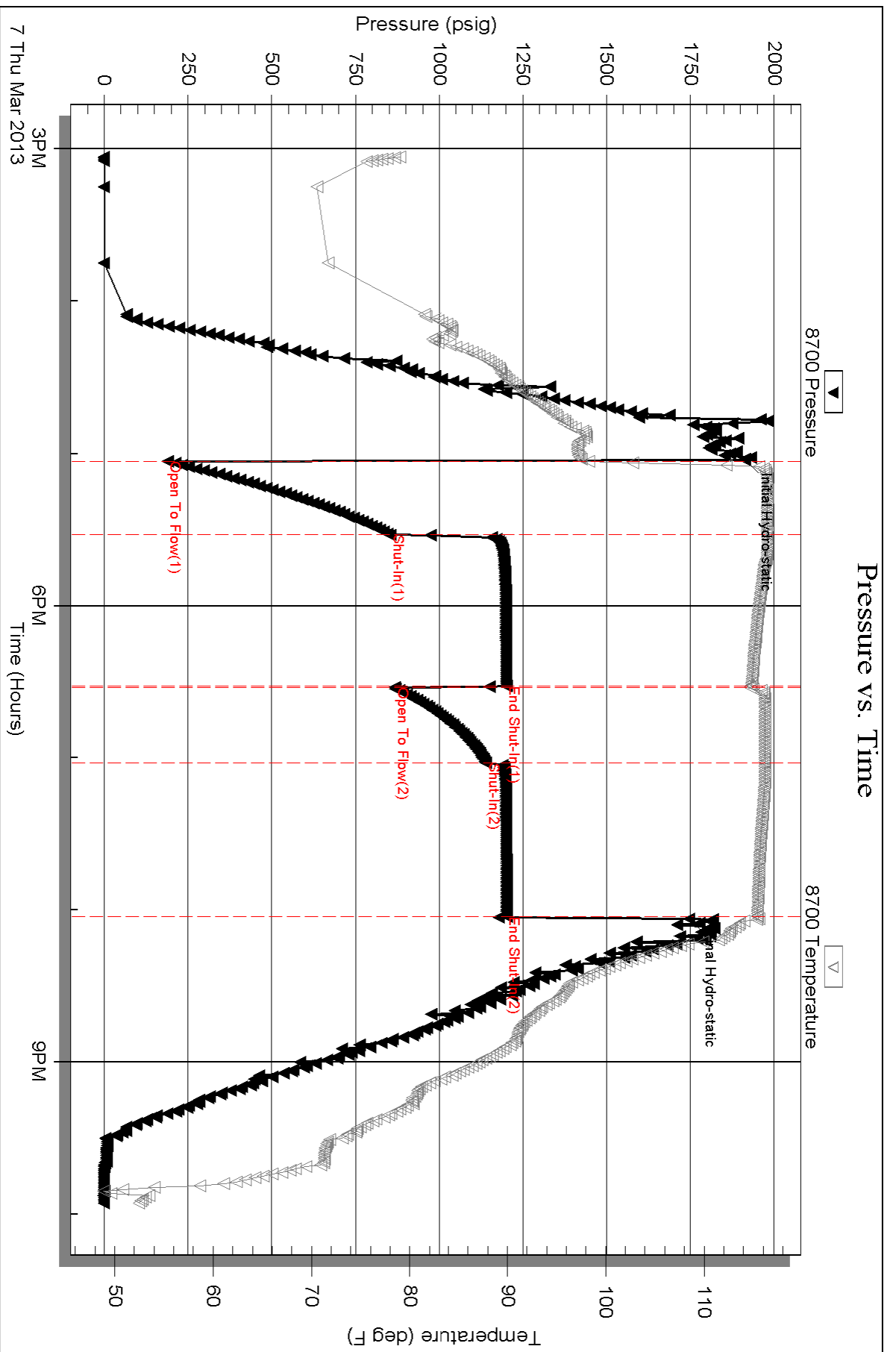
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	63000 ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.78 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3800.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1349.00	Water 100%	17.283
693.00	Water - Show of Oil 100%	9.721
461.00	OMCW 2%o 30%m 68%w	6.467

Total Length: 2503.00 ft Total Volume: 33.471 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: .201 @ 42



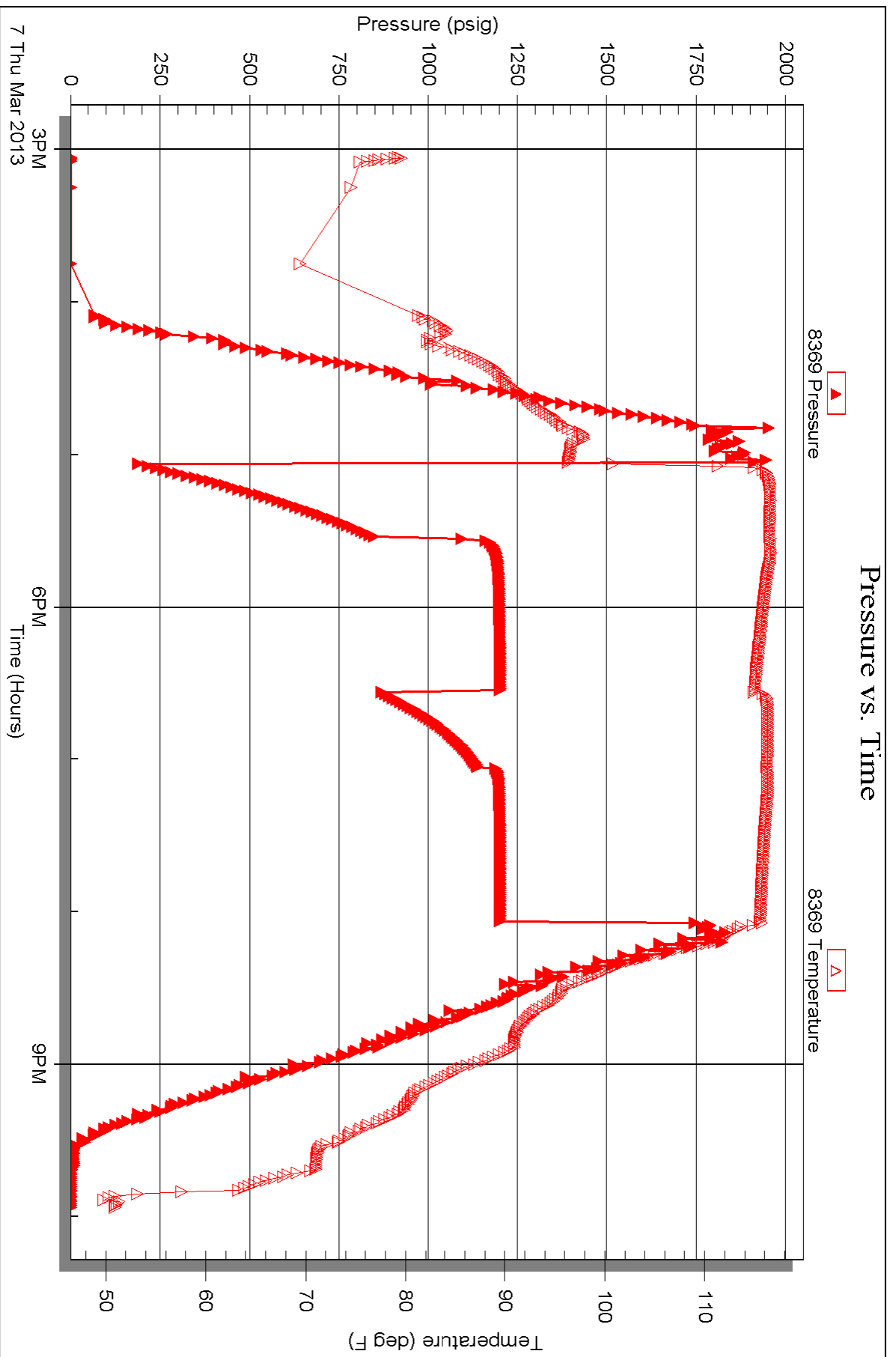
Serial #: 8369

Inside

Murfin Drilling Co Inc

Before#1-12

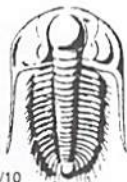
DST Test Number: 4



Triobite Testing, Inc

Ref. No: 50366

Printed: 2013.03.11 @ 13:22:13



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50363

4/10

Well Name & No. Befort #1-12 Test No. 1 Date 3-5-13
 Company Murfin Drilling Co Inc Elevation 2065 KB 2054 GL
 Address 250 N. WATER, STE 300 WICHITA, KS 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin rig 2
 Location: Sec. 12 Twp. 15^s Rge. 19^w Co. Ellis State Ks

Interval Tested 3337-3410 Zone Tested LKC A-D
 Anchor Length 73 Drill Pipe Run 3150 Mud Wt. 9.2
 Top Packer Depth 3332 Drill Collars Run 180 Vis 58
 Bottom Packer Depth 3337 Wt. Pipe Run - WL 7.2
 Total Depth 3410 Chlorides 3700 ppm System LCM 3#

Blow Description IFF - Weak Blow thru-out 1/2" To 1/4" Blow
ISTP - NO Blow
FFP - NO Blow
FBIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>130</u>	<u>Mud</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

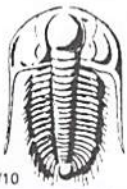
Rec Total 130 BHT 100 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1662 Test 1150 T-On Location 0050
 (B) First Initial Flow 23 Jars T-Started 0240
 (C) First Final Flow 46 Safety Joint 75 T-Open 0500
 (D) Initial Shut-In 551 Circ Sub T-Pulled 0800
 (E) Second Initial Flow 56 Hourly Standby T-Out 0939
 (F) Second Final Flow 94 Mileage 28 RT 43.40 Comments _____
 (G) Final Shut-In 523 Sampler _____
 (H) Final Hydrostatic 1644 Straddle _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Shale Packer _____
 Final Flow 30 Extra Packer _____
 Final Shut-In 60 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1268.40 MP/DST Disc't _____

Approved By [Signature] Our Representative Ray Schwager Thank you

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50364

4/10

Well Name & No. BEFORT # 1-12 Test No. 2 Date 3-6-13
 Company MURFIN DRILLING CO INC Elevation 2065 KB 2054 GL
 Address 250 N. WATER ST 300 WICHITA, KS 67202-1216
 Co. Rep / Geo. ROBERT HENDRIX Rig MURFIN RIG 2
 Location: Sec. 12 Twp. 15^S Rge. 19^W Co. ELLIS State K

Interval Tested 3466-3542 Zone Tested LKC H-J
 Anchor Length 76 Drill Pipe Run 3274 Mud Wt. 9.5
 Top Packer Depth 3461 Drill Collars Run 180 Vis 58
 Bottom Packer Depth 3466 Wt. Pipe Run — WL 6.8
 Total Depth 3542 Chlorides 3900 ppm System LCM 2#

Blow Description IFFP - WEAK Blow thru-out 1/4" Blow
ISIP - NO Blow
FFP - WEAK surface Blow, died in 20 min
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>50CM</u>	<u>5</u>		<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 101 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1713
 (B) First Initial Flow 19
 (C) First Final Flow 23
 (D) Initial Shut-In 384
 (E) Second Initial Flow 28
 (F) Second Final Flow 29
 (G) Final Shut-In 113
 (H) Final Hydrostatic 1696

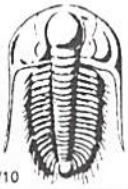
Test 1150
 Jars
 Safety Joint 75
 Circ Sub
 Hourly Standby
 Mileage 28RT 43.40
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1268.40

T-On Location 0235
 T-Started 0250
 T-Open 0420
 T-Pulled 0720
 T-Out 0902
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1268.40
 MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Approved By [Signature] Our Representative RAY SCHWAGN *Thank you*

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **50365**

Well Name & No. Befort # 1-12 Test No. 3 Date 3-7-13
 Company MURFIN DRILLING Co Inc Elevation 2065 KB 2054 GL
 Address 250 N. WATER ST 300 WICHITA, Ks 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin rig 2
 Location: Sec. 12 Twp. 15^s Rge. 19^w Co. Ellis State Ks

Interval Tested 3650-3660 Zone Tested Arbuckle
 Anchor Length 10 Drill Pipe Run 3469 Mud Wt. 9.4
 Top Packer Depth 3645 Drill Collars Run 180 Vis 60
 Bottom Packer Depth 3650 Wt. Pipe Run - WL 7.8
 Total Depth 3660 Chlorides 3900 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 20 MIN
ISIP - 1/4" Blow Back
FFP - WEAK TO STRONG IN 7 MIN
FSIP - 1/4" Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>870</u>	<u>CO</u>				
<u>60</u>	<u>GTP</u>				

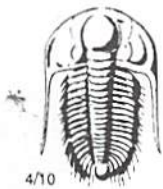
Rec Total 870 BHT 115 Gravity 22 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1798 Test 1150 T-On Location 0045
 (B) First Initial Flow 123 Jars T-Started 0105
 (C) First Final Flow 167 Safety Joint 75 T-Open 0240
 (D) Initial Shut-In 1137 Circ Sub T-Pulled 0640
 (E) Second Initial Flow 218 Hourly Standby T-Out 0914
 (F) Second Final Flow 321 Mileage 28RT 43.40 Comments _____
 (G) Final Shut-In 1163 Sampler _____
 (H) Final Hydrostatic 1786 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Approved By [Signature] Our Representative RAY Schwager **Thank you**
 Sub Total 1268.40

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50366

Well Name & No. BeFort # 1-12 Test No. 4 Date 3-7-13
 Company Murfin Drilling Co. Inc Elevation 2065 KB 2054 GL
 Address 250 N. Water Ste 300 Wichita Ks. 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin Rig #2
 Location: Sec. 12 Twp. 15 S Rge. 19 W Co. Ellis State KS

Interval Tested 3660 - 3670 Zone Tested Arbuckle
 Anchor Length 10 Drill Pipe Run 3463 Mud Wt. 9.4
 Top Packer Depth 3655 Drill Collars Run 180 Vis 58
 Bottom Packer Depth 3660 Wt. Pipe Run 0 WL 7.8
 Total Depth 3670 Chlorides 3800 ppm System LCM 2

Blow Description IFP - BOB in l/min.
ISIP - No Return
FFP - BOB in l/min.
FSIP - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1349</u>	<u>Water</u>		<u>100</u>		
<u>693</u>	<u>Water - show of Oil</u>		<u>100</u>		
<u>461</u>	<u>OMCW</u>	<u>2</u>	<u>68</u>	<u>30</u>	

Rec Total 2503 BHT 115 Gravity _____ API RW 201 @ 42 ° F Chlorides 63,000 ppm

(A) Initial Hydrostatic <u>1913</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>14:58</u>
(B) First Initial Flow <u>188</u>	<input type="checkbox"/> Jars	T-Started <u>15:03</u>
(C) First Final Flow <u>853</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>17:04</u>
(D) Initial Shut-In <u>1201</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>20:04</u>
(E) Second Initial Flow <u>866</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>21:57</u>
(F) Second Final Flow <u>1139</u>	<input checked="" type="checkbox"/> Mileage <u>28RT</u> 43.40	Comments _____
(G) Final Shut-In <u>1201</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>1746</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1268.40</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1268.40</u>	

Approved By _____ Our Representative [Signature]

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