



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300
Wichita KS 67202-1216

ATTN: Scott Robinson

Ruder Unit #3-36

36-10s-24w Graham,KS

Start Date: 2013.06.15 @ 01:15:26

End Date: 2013.06.15 @ 08:58:50

Job Ticket #: 52092 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.06.18 @ 09:56:58



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N. Water Ste 300
 Wichita KS 67202-1216
 ATTN: Scott Robinson

36-10s-24w Graham,KS

Ruder Unit #3-36

Job Ticket: 52092 **DST#: 1**
 Test Start: 2013.06.15 @ 01:15:26

GENERAL INFORMATION:

Formation: **Toronto-LKC F**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:25:36
 Time Test Ended: 08:58:50
 Interval: **3677.00 ft (KB) To 3805.00 ft (KB) (TVD)**
 Total Depth: 3805.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ray Schwager
 Unit No: 42
 Reference Elevations: 2357.00 ft (KB)
 2352.00 ft (CF)
 KB to GR/CF: 5.00 ft

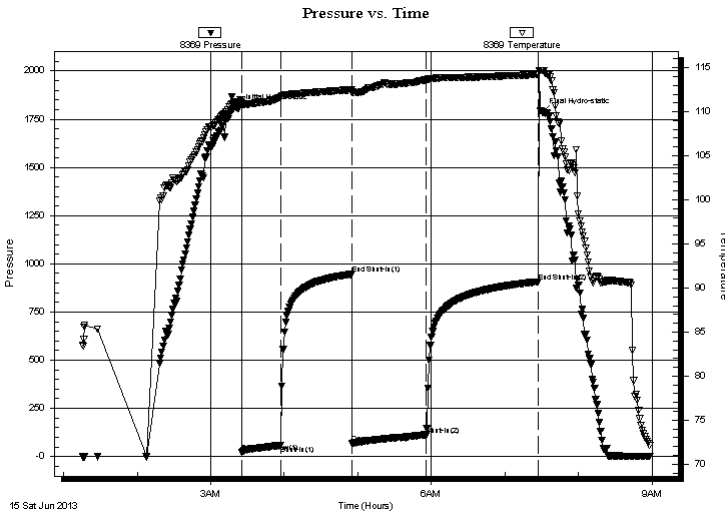
Serial #: 8369

Inside

Press @ RunDepth: 113.13 psig @ 3777.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.06.15 End Date: 2013.06.15 Last Calib.: 2013.06.15
 Start Time: 01:15:26 End Time: 08:58:50 Time On Btm: 2013.06.15 @ 03:22:36
 Time Off Btm: 2013.06.15 @ 07:30:35

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 3" bl
 60-ISIP-no bl
 60-FFP-w k bl thru-out surface to 1 1/4" bl
 90-FSIP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1806.24	111.17	Initial Hydro-static
3	24.07	110.75	Open To Flow (1)
35	59.78	111.70	Shut-In(1)
93	946.12	112.50	End Shut-In(1)
93	69.06	112.17	Open To Flow (2)
154	113.13	113.60	Shut-In(2)
245	907.15	114.23	End Shut-In(2)
248	1786.21	114.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
190.00	SOCM 2%O98%M	2.39

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: Scott Robinson

36-10s-24w Graham,KS
Ruder Unit #3-36
Job Ticket: 52092 **DST#: 1**
Test Start: 2013.06.15 @ 01:15:26

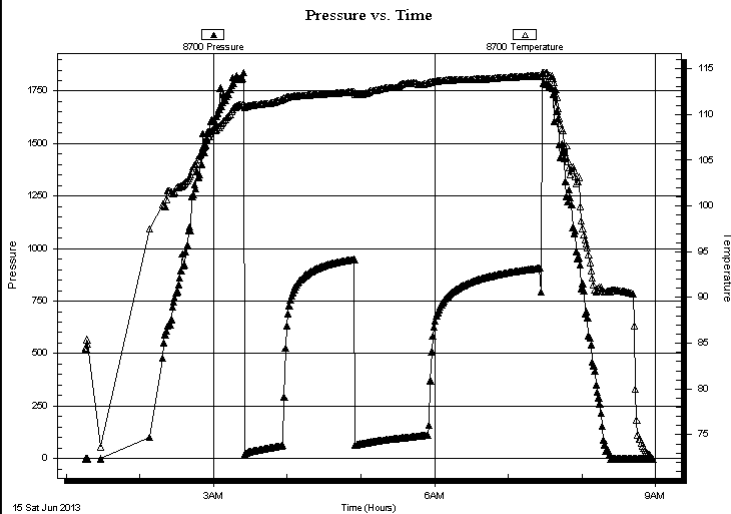
GENERAL INFORMATION:

Formation: **Toronto-LKC F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:25:36
Time Test Ended: 08:58:50
Interval: **3677.00 ft (KB) To 3805.00 ft (KB) (TVD)**
Total Depth: 3805.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Poor
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 42
Reference Elevations: 2357.00 ft (KB)
2352.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8700 Outside

Press @ Run Depth: psig @ 3777.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.06.15 End Date: 2013.06.15 Last Calib.: 2013.06.15
Start Time: 01:15:46 End Time: 08:57:40 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 3" bl
60-ISIP-no bl
60-FFP-w k bl thru-out surface to 1 1/4" bl
90-FSIP-no bl



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
190.00	SOCM 2%O98%M	2.39

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: Scott Robinson

36-10s-24w Graham,KS
Ruder Unit #3-36
Job Ticket: 52092 **DST#: 1**
Test Start: 2013.06.15 @ 01:15:26

Tool Information

Drill Pipe:	Length: 3642.00 ft	Diameter: 3.80 inches	Volume: 51.09 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 51.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3677.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	128.00 ft			
Tool Length:	149.00 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			3657.00	
Shut In Tool	5.00			3662.00	
Hydraulic tool	5.00			3667.00	
Packer	5.00			3672.00	21.00 Bottom Of Top Packer
Packer	5.00			3677.00	
Stubb	1.00			3678.00	
Perforations	3.00			3681.00	
Blank Spacing	96.00			3777.00	
Recorder	0.00	8369	Inside	3777.00	
Recorder	0.00	8700	Outside	3777.00	
Perforations	25.00			3802.00	
Bullnose	3.00			3805.00	128.00 Bottom Packers & Anchor

Total Tool Length: 149.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N. Water Ste 300
Wichita KS 67202-1216
ATTN: Scott Robinson

36-10s-24w Graham,KS
Ruder Unit #3-36
Job Ticket: 52092 **DST#: 1**
Test Start: 2013.06.15 @ 01:15:26

Mud and Cushion Information

Mud Type: Invert	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.94 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1700.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

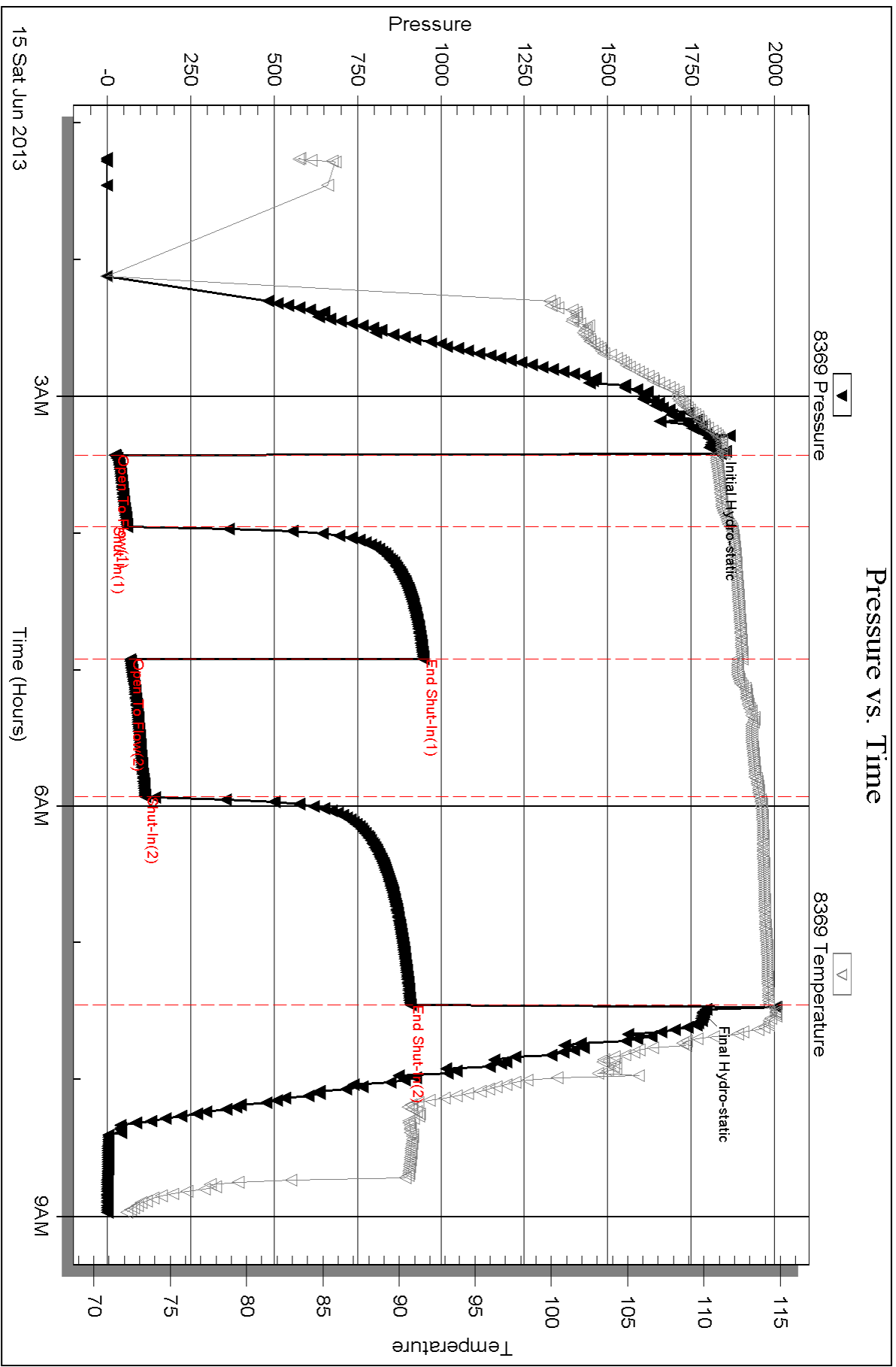
Length ft	Description	Volume bbl
190.00	SOCM 2%O98%M	2.392

Total Length: 190.00 ft Total Volume: 2.392 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

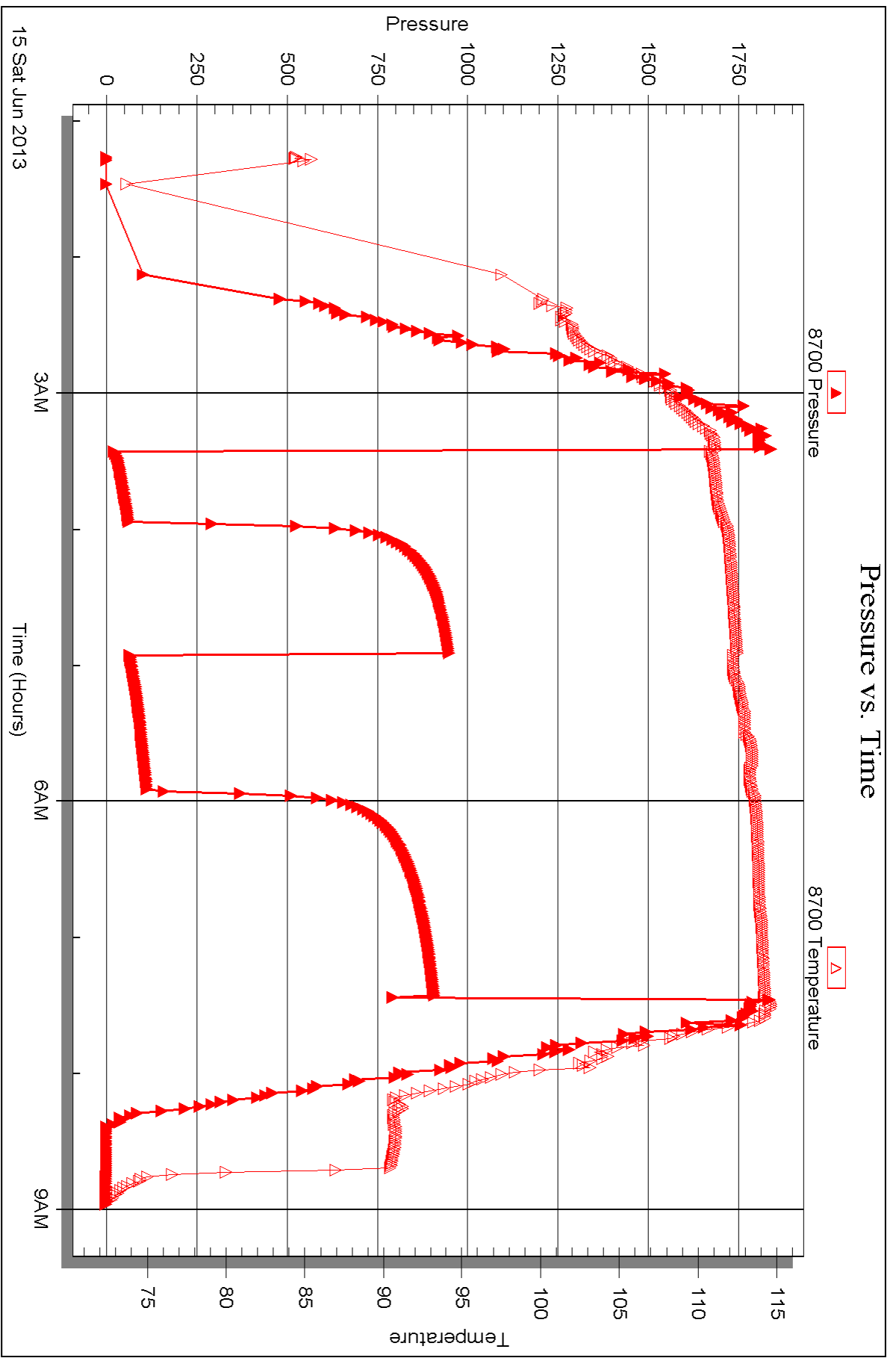


Serial #: 8700

Outside Murfin Drilling Co Inc

Ruder Unit #3-36

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 52092

Printed: 2013.06.18 @ 09:57:01



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300
Wichita KS 67202-1216

ATTN: Scott Robinson

Ruder Unit #3-36

36-10s-24w Graham,KS

Start Date: 2013.06.15 @ 20:15:22

End Date: 2013.06.16 @ 03:19:16

Job Ticket #: 52093 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.06.18 @ 09:56:20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N. Water Ste 300
 Wichita KS 67202-1216
 ATTN: Scott Robinson

36-10s-24w Graham, KS
Ruder Unit #3-36
 Job Ticket: 52093 **DST#: 2**
 Test Start: 2013.06.15 @ 20:15:22

GENERAL INFORMATION:

Formation: **LKC H-J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:51:47
 Tester: Ray Schwager
 Time Test Ended: 03:19:16
 Unit No: 42
 Interval: **3835.00 ft (KB) To 3905.00 ft (KB) (TVD)**
 Reference Elevations: 2357.00 ft (KB)
 Total Depth: 3805.00 ft (KB) (TVD)
 2352.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 5.00 ft

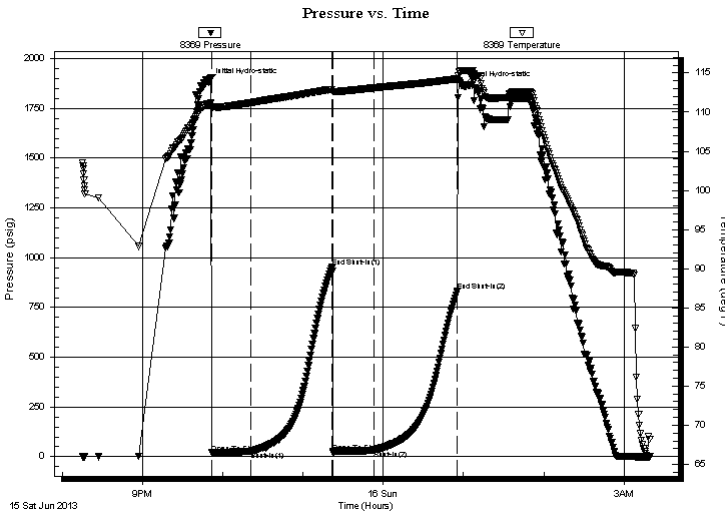
Serial #: 8369

Inside

Press @ Run Depth: 32.53 psig @ 3902.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.06.15 End Date: 2013.06.16 Last Calib.: 2013.06.16
 Start Time: 20:15:22 End Time: 03:19:16 Time On Btm: 2013.06.15 @ 21:49:47
 Time Off Btm: 2013.06.16 @ 00:59:31

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

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.42	111.02	Initial Hydro-static
2	19.21	110.38	Open To Flow (1)
32	27.06	111.21	Shut-In(1)
92	951.12	112.91	End Shut-In(1)
93	21.84	112.63	Open To Flow (2)
123	32.53	113.09	Shut-In(2)
186	831.83	114.25	End Shut-In(2)
190	1863.64	115.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	OCM 10%O90%M	0.29

* 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: Scott Robinson

36-10s-24w Graham, KS
Ruder Unit #3-36
 Job Ticket: 52093 **DST#: 2**
 Test Start: 2013.06.15 @ 20:15:22

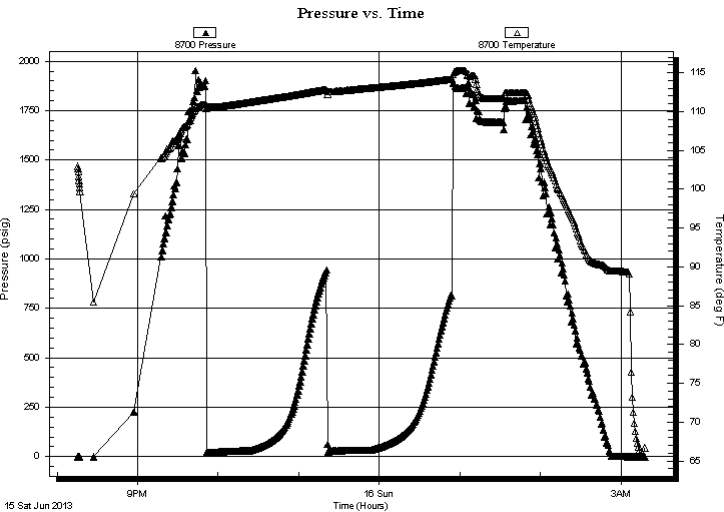
GENERAL INFORMATION:

Formation: LKC H-J		
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 21:51:47		Tester: Ray Schwager
Time Test Ended: 03:19:16		Unit No: 42
Interval: 3835.00 ft (KB) To 3905.00 ft (KB) (TVD)		Reference Elevations: 2357.00 ft (KB)
Total Depth: 3805.00 ft (KB) (TVD)		2352.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 5.00 ft

Serial #: 8700 Outside

Press @ Run Depth: psig @ 3902.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2013.06.15	End Date: 2013.06.16
Start Time: 20:15:21	End Time: 03:18:00
	Last Calib.: 2013.06.16
	Time On Btm:
	Time Off Btm:

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



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
40.00	OCM 10%O90%M	0.29

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N. Water Ste 300
Wichita KS 67202-1216
ATTN: Scott Robinson

36-10s-24w Graham,KS
Ruder Unit #3-36
Job Ticket: 52093 **DST#: 2**
Test Start: 2013.06.15 @ 20:15:22

Tool Information

Drill Pipe:	Length: 3805.00 ft	Diameter: 3.80 inches	Volume: 53.37 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: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 53.52 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	55000.00 lb
Depth to Top Packer:	3835.00 ft			Final	55000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	70.00 ft				
Tool Length:	91.00 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			3815.00	
Shut In Tool	5.00			3820.00	
Hydraulic tool	5.00			3825.00	
Packer	5.00			3830.00	21.00 Bottom Of Top Packer
Packer	5.00			3835.00	
Stubb	1.00			3836.00	
Perforations	3.00			3839.00	
Blank Spacing	63.00			3902.00	
Recorder	0.00	8369	Inside	3902.00	
Recorder	0.00	8700	Outside	3902.00	
Bullnose	3.00			3905.00	70.00 Bottom Packers & Anchor

Total Tool Length: 91.00



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FLUID SUMMARY

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250 N. Water Ste 300
Wichita KS 67202-1216
ATTN: Scott Robinson

36-10s-24w Graham,KS
Ruder Unit #3-36
Job Ticket: 52093 **DST#: 2**
Test Start: 2013.06.15 @ 20:15:22

Mud and Cushion Information

Mud Type: KCl	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: 7.96 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	OCM 10%O90%M	0.288

Total Length: 40.00 ft Total Volume: 0.288 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8369

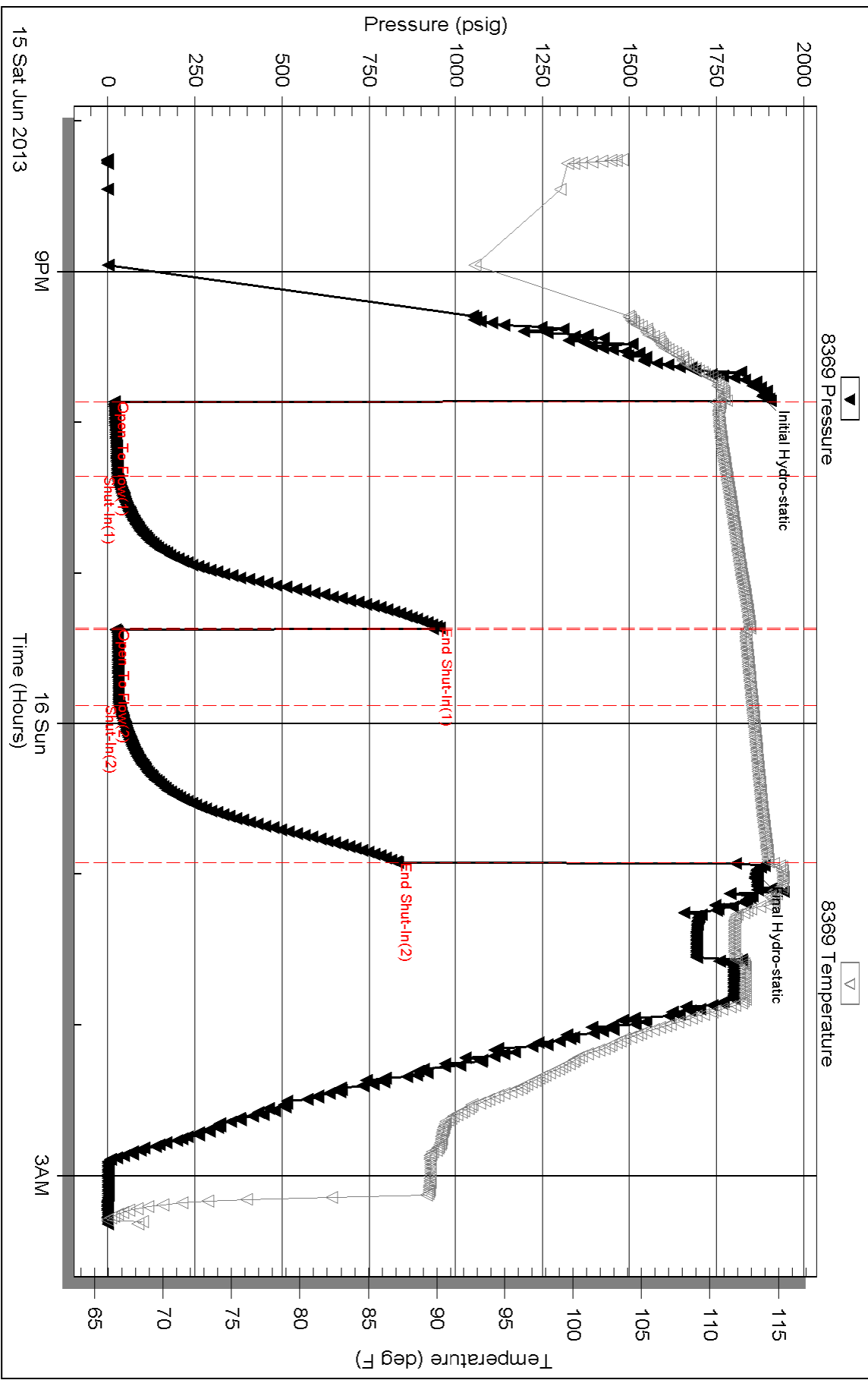
Inside

Murfin Drilling Co Inc

Ruder Unit #3-36

DST Test Number: 2

Pressure vs. Time

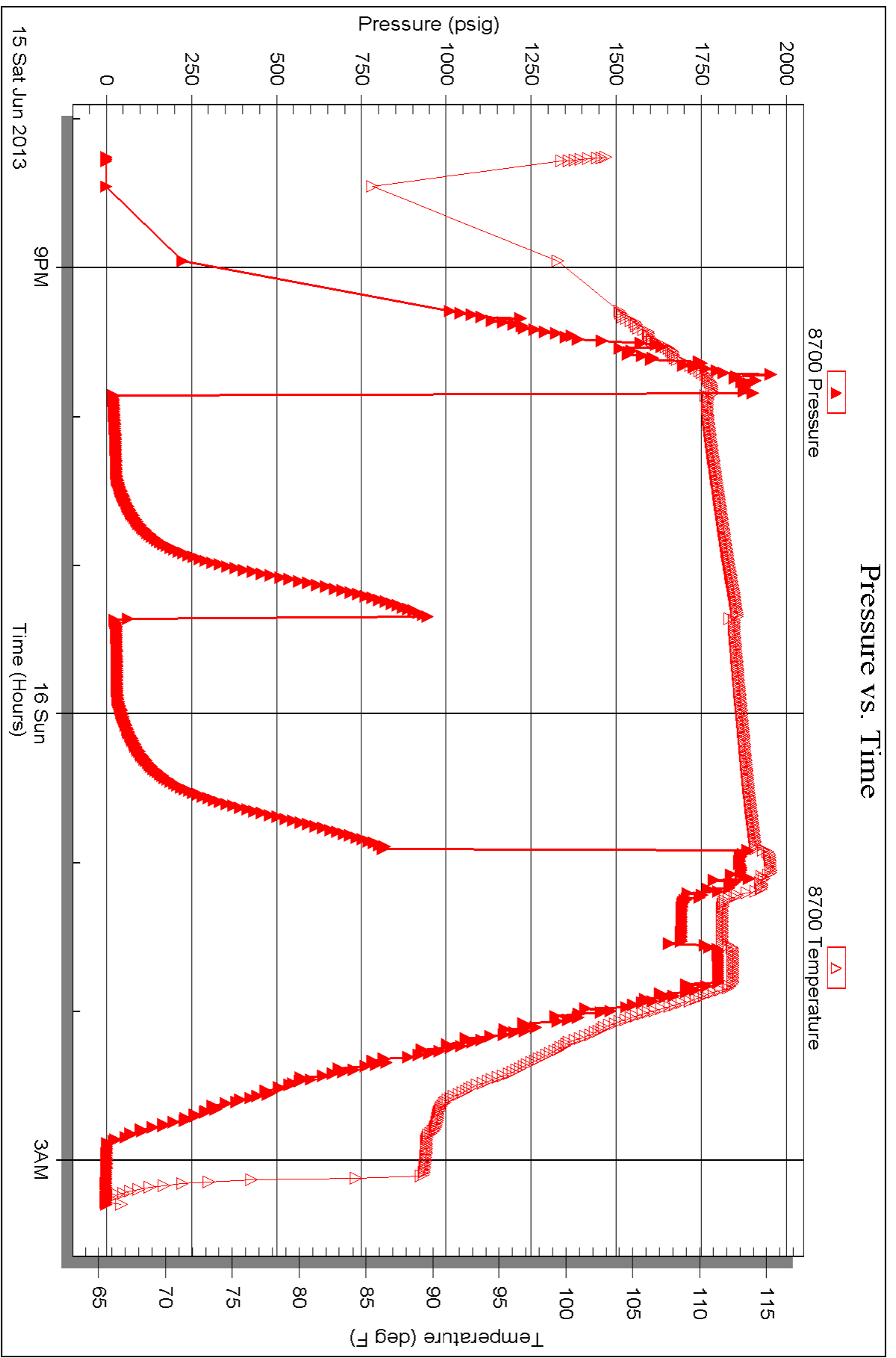


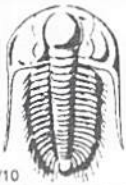
Serial #: 8700

Outside Murfin Drilling Co Inc

Ruder Unit #3-36

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 52092

Well Name & No. Ruder Unit #3-36 Test No. 1 Date 6-15-13
 Company Murfin Drilling Co Inc Elevation 2357 KB 2352 GL
 Address 250 N. WATER, STE 300 WICHITA, K0 67202-1216
 Co. Rep / Geo. Rocky Milford Rig Murfin 16
 Location: Sec. 36 Twp. 10^s Rge. 24^w Co. GRAHAM State K0

Interval Tested 3677-3805 Zone Tested TORONTO - LKC F
 Anchor Length 128 Drill Pipe Run 3642 Mud Wt. 9.1
 Top Packer Depth 3672 Drill Collars Run 30 Vis 50
 Bottom Packer Depth 3677 Wt. Pipe Run - WL 8
 Total Depth 3805 Chlorides 1700 ppm System LCM -

Blow Description IFP - WEAK Blow thru-out 1/2" to 3" Blow
ISIP - NO BLOW
FFP - WEAK Blow thru-out
FBIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>190</u>	<u>50CM</u>		<u>2</u>		<u>98</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 190 BHT 114 Gravity - API RW - @ - ° F Chlorides - ppm
 (A) Initial Hydrostatic 1806 Test 1150 T-On Location 0030
 (B) First Initial Flow 24 Jars - T-Started 0115
 (C) First Final Flow 59 Safety Joint - T-Open 0325
 (D) Initial Shut-In 946 Circ Sub - T-Pulled 0725
 (E) Second Initial Flow 69 Hourly Standby - T-Out 0858
 (F) Second Final Flow 113 Mileage 100 RT 155 Comments -
 (G) Final Shut-In 907 Sampler -
 (H) Final Hydrostatic 1786 Straddle -
 Shale Packer -
 Ruined Shale Packer -
 Ruined Packer -
 Extra Copies -

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1305
 Total 1305
 MP/DST Disc't -

Approved By Rocky Milford Our Representative Ray Schunger Thank you
 Trilobite Testing Inc. shall not be liable for damaged or 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. 52093

Well Name & No. Rudee Unit #3-36 Test No. 2 Date 6-15-13
 Company Murfin Drilling Co Inc Elevation 2357 KB 2352 GL
 Address 250 N. WATER, STE 300 WICHITA, KS 67202-1216
 Co. Rep / Geo. Rocky Milford Rig Murfin 16
 Location: Sec. 36 Twp. 10^S Rge. 24^W Co. GRAHAM State Ks

Interval Tested 3835-3905 Zone Tested LKC H-J
 Anchor Length 70 Drill Pipe Run 3805 Mud Wt. 9.1
 Top Packer Depth 3830 Drill Collars Run 30 Vis 67
 Bottom Packer Depth 3835 Wt. Pipe Run - WL 8
 Total Depth 3905 Chlorides 2000 ppm System LCM 1/2#

Blow Description IFP - WEAK Blow thru-out 1/4" Blow
ISIP - NO Blow
FFP - WEAK Blow thru-out 1/4" Blow
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>0 CM</u>	<u>10</u>		<u>90</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 40 BHT 114 - Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1882 Test 1150 T-On Location 1955
 (B) First Initial Flow 19 Jars - T-Started 2015
 (C) First Final Flow 27 Safety Joint - T-Open 2150
 (D) Initial Shut-In 951 Circ Sub - T-Pulled 0050
 (E) Second Initial Flow 21 Hourly Standby - T-Out 0319
 (F) Second Final Flow 32 Mileage 155 Comments -
 (G) Final Shut-In 831 Sampler -
 (H) Final Hydrostatic 1863 Straddle - Ruined Shale Packer -
 Shale Packer - Ruined Packer -

Initial Open 30 Extra Packer - Extra Copies -
 Initial Shut-In 60 Extra Recorder - Sub Total 0
 Final Flow 30 Day Standby - Total 1305
 Final Shut-In 60 Accessibility - MP/DST Disc't -
 Sub Total 1305

Approved By Rocky Milford 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.