



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Tom Funk

Munk Unit #1-29

29-12s-32w Logan,KS

Start Date: 2013.07.16 @ 21:24:00

End Date: 2013.07.17 @ 06:06:40

Job Ticket #: 49084 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co.

29-12s-32w Logan,KS

250 N. Water Ste 300
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Munk Unit #1-29

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DST#: 1

ATTN: Tom Funk

Test Start: 2013.07.16 @ 21:24:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:44:55

Time Test Ended: 06:06:40

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 58

Interval: 4548.00 ft (KB) To 4590.00 ft (KB) (TVD)

Reference Elevations: 3022.00 ft (KB)

Total Depth: 4590.00 ft (KB) (TVD)

3011.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press @ Run Depth: 45.32 psig @ 4549.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.07.16

End Date:

2013.07.17

Last Calib.:

2013.07.17

Start Time: 21:24:00

End Time:

06:06:40

Time On Btm:

2013.07.16 @ 23:44:40

Time Off Btm:

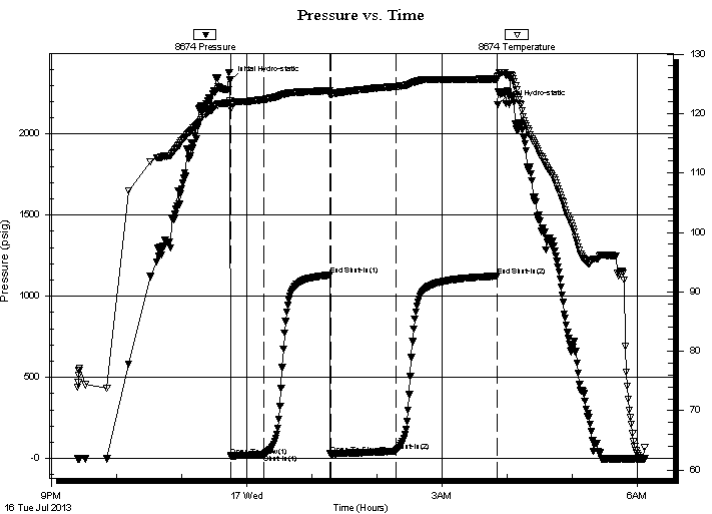
2013.07.17 @ 03:51:09

TEST COMMENT: IF- Weak Surface Blow Built to 1 1/2"

IS- No Blow

FF- Weak Surface Blow in 15 min

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2331.42	122.14	Initial Hydro-static
1	15.67	120.73	Open To Flow (1)
31	25.50	122.36	Shut-In(1)
92	1131.29	123.85	End Shut-In(1)
93	29.30	123.23	Open To Flow (2)
153	45.32	124.51	Shut-In(2)
246	1124.76	125.80	End Shut-In(2)
247	2179.85	126.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GOCM 4%g 16%oil 81%m	0.30
0.00	58' of Weak GIP	0.00

Gas Rates

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



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TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

29-12s-32w Logan,KS

250 N. Water Ste 300
Wichita KS 67202

Munk Unit #1-29

Job Ticket: 49084

DST#: 1

ATTN: Tom Funk

Test Start: 2013.07.16 @ 21:24:00

Tool Information

Drill Pipe:	Length: 4324.00 ft	Diameter: 3.80 inches	Volume: 60.65 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 236.00 ft	Diameter: 2.25 inches	Volume: 1.16 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 61.81 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4548.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	62.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4529.00	
Shut In Tool	5.00			4534.00	
Hydraulic tool	5.00			4539.00	
Packer	5.00			4544.00	20.00 Bottom Of Top Packer
Packer	4.00			4548.00	
Stubb	1.00			4549.00	
Recorder	0.00	8355	Outside	4549.00	
Recorder	0.00	8674	Inside	4549.00	
Perforations	3.00			4552.00	
Change Over Sub	1.00			4553.00	
Drill Pipe	31.00			4584.00	
Change Over Sub	1.00			4585.00	
Bullnose	5.00			4590.00	42.00 Bottom Packers & Anchor

Total Tool Length: 62.00



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FLUID SUMMARY

Murfin Drilling Co.

29-12s-32w Logan,KS

250 N. Water Ste 300
Wichita KS 67202

Munk Unit #1-29

Job Ticket: 49084

DST#: 1

ATTN: Tom Funk

Test Start: 2013.07.16 @ 21:24:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	GOCM 4%g 16%oil 81%m	0.305
0.00	58' of Weak GIP	0.000

Total Length: 62.00 ft Total Volume: 0.305 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

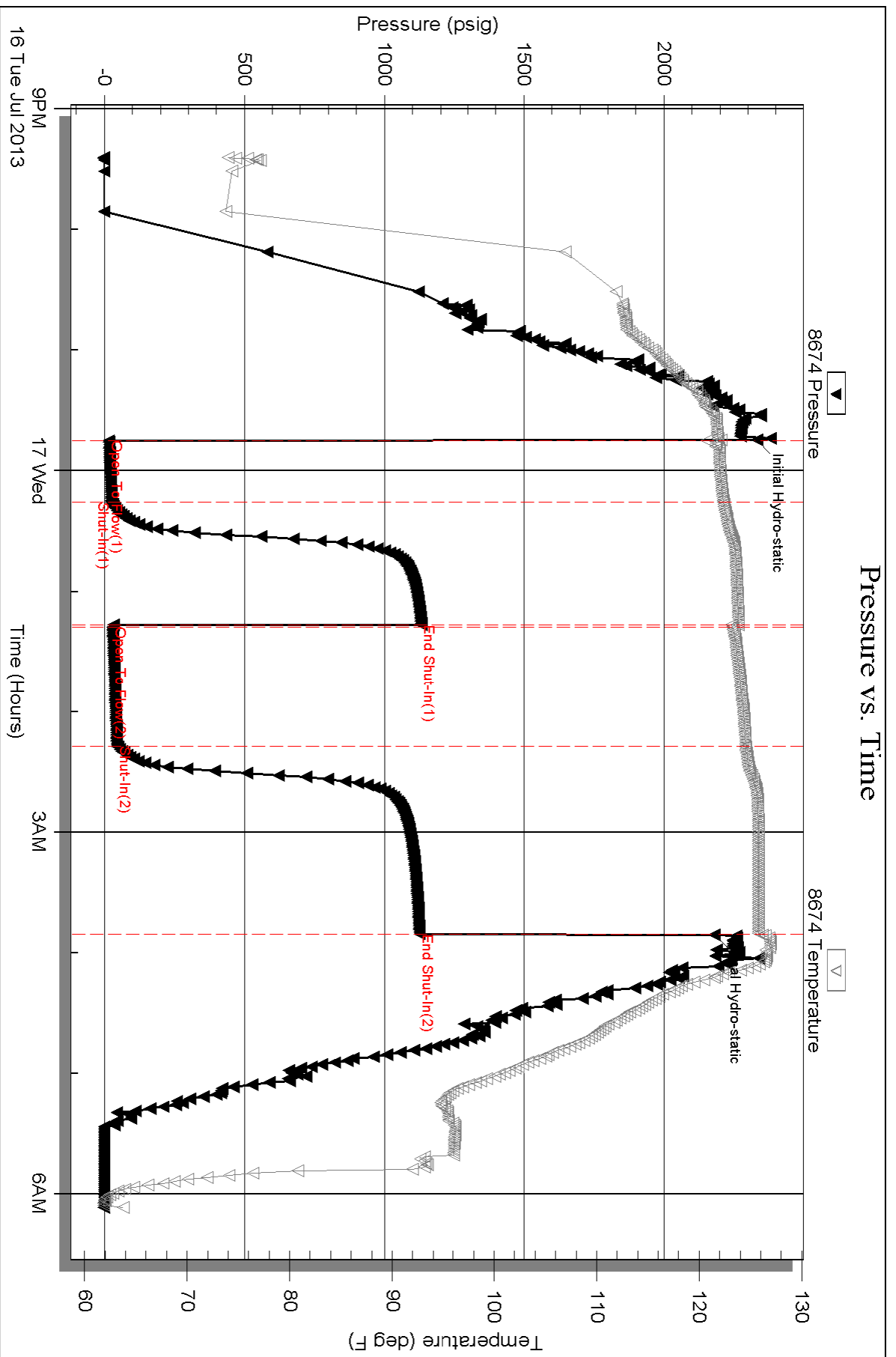
Serial #: 8674

Inside

Murfin Drilling Co.

Munk Unit #1-29

DST Test Number: 1

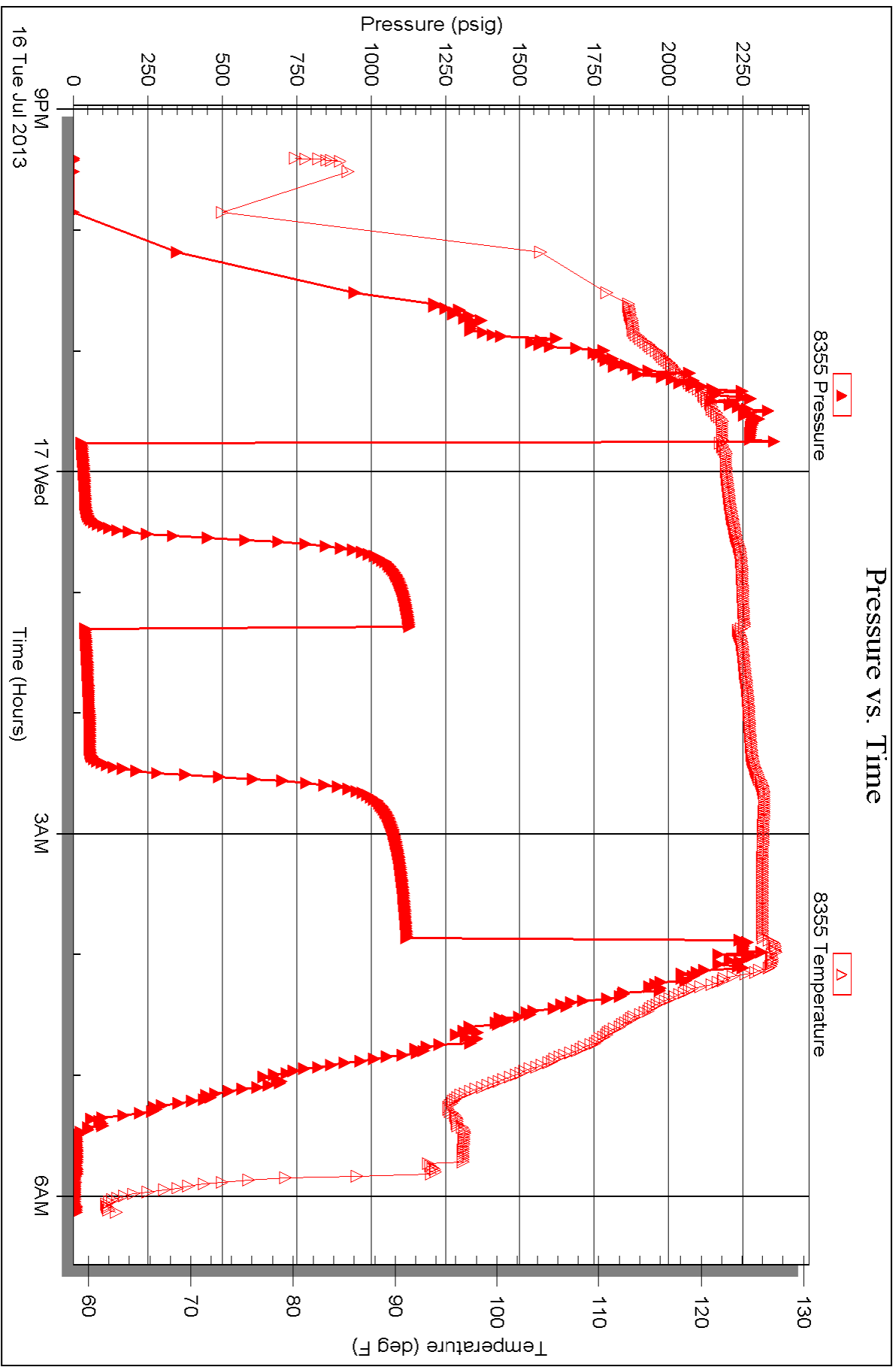


Serial #: 8355

Outside Murfin Drilling Co.

Munk Unit #1-29

DST Test Number: 1





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49084

Well Name & No. Munk Unit #1-29 Test No. DST #1 Date 7-16-13
 Company Murfin Drilling Co. Elevation 3022 KB 3011 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Tom Funk Rig Murfin 22
 Location: Sec. 29 Twp. 12S Rge. 32W Co. Logan State KS

Interval Tested 4548-4590 Zone Tested Johnson
 Anchor Length 42 Drill Pipe Run 4324 Mud Wt. 9.3
 Top Packer Depth 4544 Drill Collars Run 236 Vis 60
 Bottom Packer Depth 4548 Wt. Pipe Run 0 WL 5-2
 Total Depth 4590 Chlorides 4900 ppm System LCM 415
 Blow Description IF- Weak Surface Blow Built to 1 1/2"
ISJ- No Blow
FF- Weak Surface Blow in 15 min
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>60CM</u>	<u>4</u>	<u>16</u>	<u>81</u>	
<u>62</u>	<u>58' weak GSEP</u>				

Rec Total 62 BHT 122 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2331 Test 1250 T-On Location 20:22
 (B) First Initial Flow 15 Jars _____ T-Started 21:24
 (C) First Final Flow 25 Safety Joint _____ T-Open 23:44
 (D) Initial Shut-In 1131 Circ Sub NIC T-Pulled 3:51
 (E) Second Initial Flow 29 Hourly Standby _____ T-Out 6:06
 (F) Second Final Flow 45 Mileage 80 RIT X 2 Comments _____
 (G) Final Shut-In 1124 Sampler _____ loaded tools 7/18 3:00
 (H) Final Hydrostatic 2179 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1498

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

MP/DST Disc't _____

Approved By [Signature] Our Representative Will Muel
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