



DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Ronald #1

23-15s-18w Ellis,KS

Start Date: 2013.05.20 @ 22:30:25

End Date: 2013.05.21 @ 04:14:55

Job Ticket #: 53878 DST #: 1

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

Printed: 2013.05.28 @ 14:35:35

TDI Inc. 23-15s-18w Ellis,KS Ronald #1 DST # 1 KC "A-C" 2013.05.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

23-15s-18w Ellis,KS
Ronald #1
Job Ticket: 53878 **DST#: 1**
Test Start: 2013.05.20 @ 22:30:25

GENERAL INFORMATION:

Formation: **KC "A-C"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:18:55
Time Test Ended: 04:14:55
Interval: **3264.00 ft (KB) To 3315.00 ft (KB) (TVD)**
Total Depth: 3315.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:
Test Type: Conventional Bottom Hole (Initial)
Tester: Brett Dickinson
Unit No: 59
Reference Elevations: 2004.00 ft (KB)
1996.00 ft (CF)
KB to GR/CF: 8.00 ft

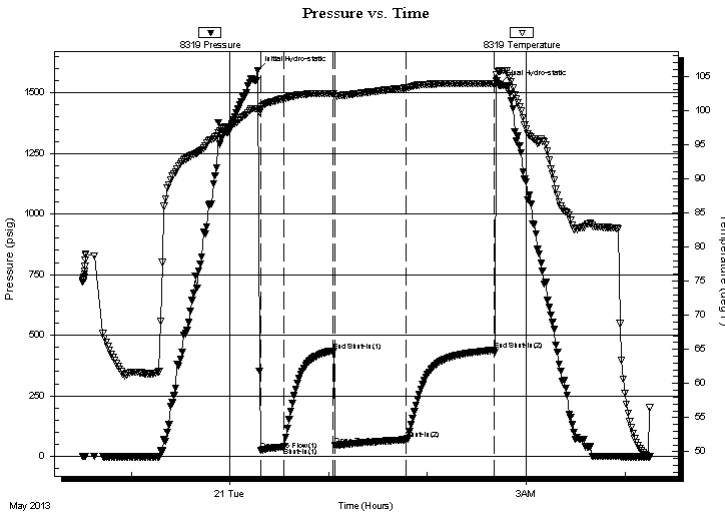
Serial #: 8319

Inside

Press @ Run Depth: 68.62 psig @ 3265.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.05.20 End Date: 2013.05.21 Last Calib.: 2013.05.21
Start Time: 22:30:30 End Time: 04:14:54 Time On Btm: 2013.05.21 @ 00:16:55
Time Off Btm: 2013.05.21 @ 02:43:25

TEST COMMENT: IF-BOB in 2 min
ISI-No blow
FF-BOB in 15 sec
FSI-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1592.50	100.30	Initial Hydro-static
2	25.30	100.50	Open To Flow (1)
16	38.93	101.68	Shut-In(1)
46	435.44	102.44	End Shut-In(1)
47	46.23	102.02	Open To Flow (2)
90	68.62	103.27	Shut-In(2)
144	438.64	103.92	End Shut-In(2)
147	1532.50	105.71	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	GSWMCO 15%G 45%O 10%W 30%M	1.75

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

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

23-15s-18w Ellis,KS
Ronald #1
Job Ticket: 53878 **DST#: 1**
Test Start: 2013.05.20 @ 22:30:25

Tool Information

Drill Pipe:	Length: 3254.00 ft	Diameter: 3.80 inches	Volume: 45.65 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 45.65 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3264.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	51.00 ft				
Tool Length:	72.00 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			3244.00	
Shut In Tool	5.00			3249.00	
Hydraulic tool	5.00			3254.00	
Packer	5.00			3259.00	21.00 Bottom Of Top Packer
Packer	5.00			3264.00	
Stubb	1.00			3265.00	
Recorder	0.00	8319	Inside	3265.00	
Recorder	0.00	8166	Outside	3265.00	
Perforations	4.00			3269.00	
Change Over Sub	1.00			3270.00	
Drill Pipe	31.00			3301.00	
Change Over Sub	1.00			3302.00	
Perforations	10.00			3312.00	
Bullnose	3.00			3315.00	51.00 Bottom Packers & Anchor

Total Tool Length: 72.00



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FLUID SUMMARY

TDI Inc. **23-15s-18w Ellis,KS**
 1310 Bison Rd **Ronald #1**
 Hays KS 67601 Job Ticket: 53878 **DST#: 1**
 ATTN: Herb Deines Test Start: 2013.05.20 @ 22:30:25

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2800.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	GSWMCO 15%G 45%O 10%W 30%M	1.753

Total Length: 125.00 ft Total Volume: 1.753 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 8319

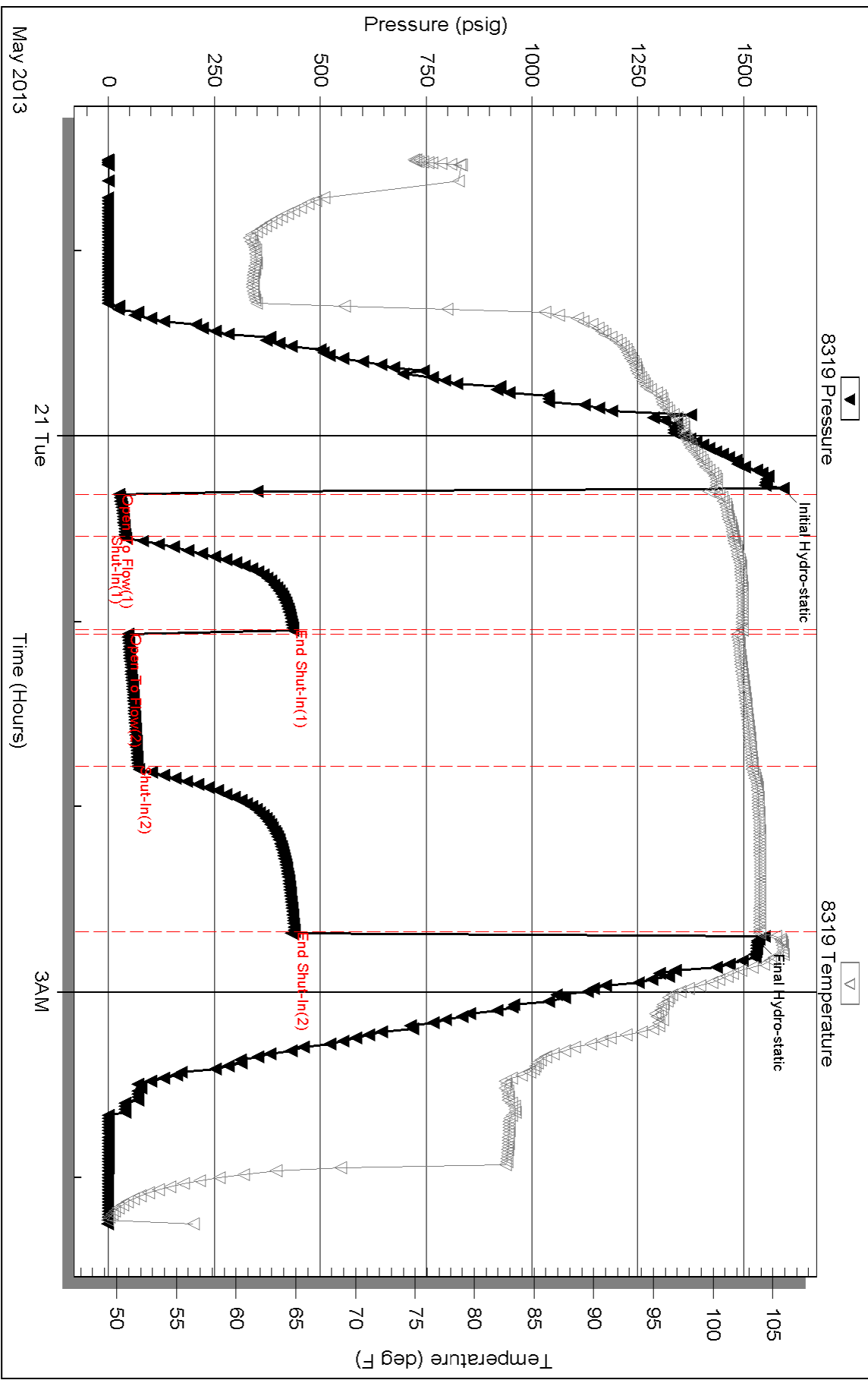
Inside

TDI Inc.

Ronald #1

DST Test Number: 1

Pressure vs. Time

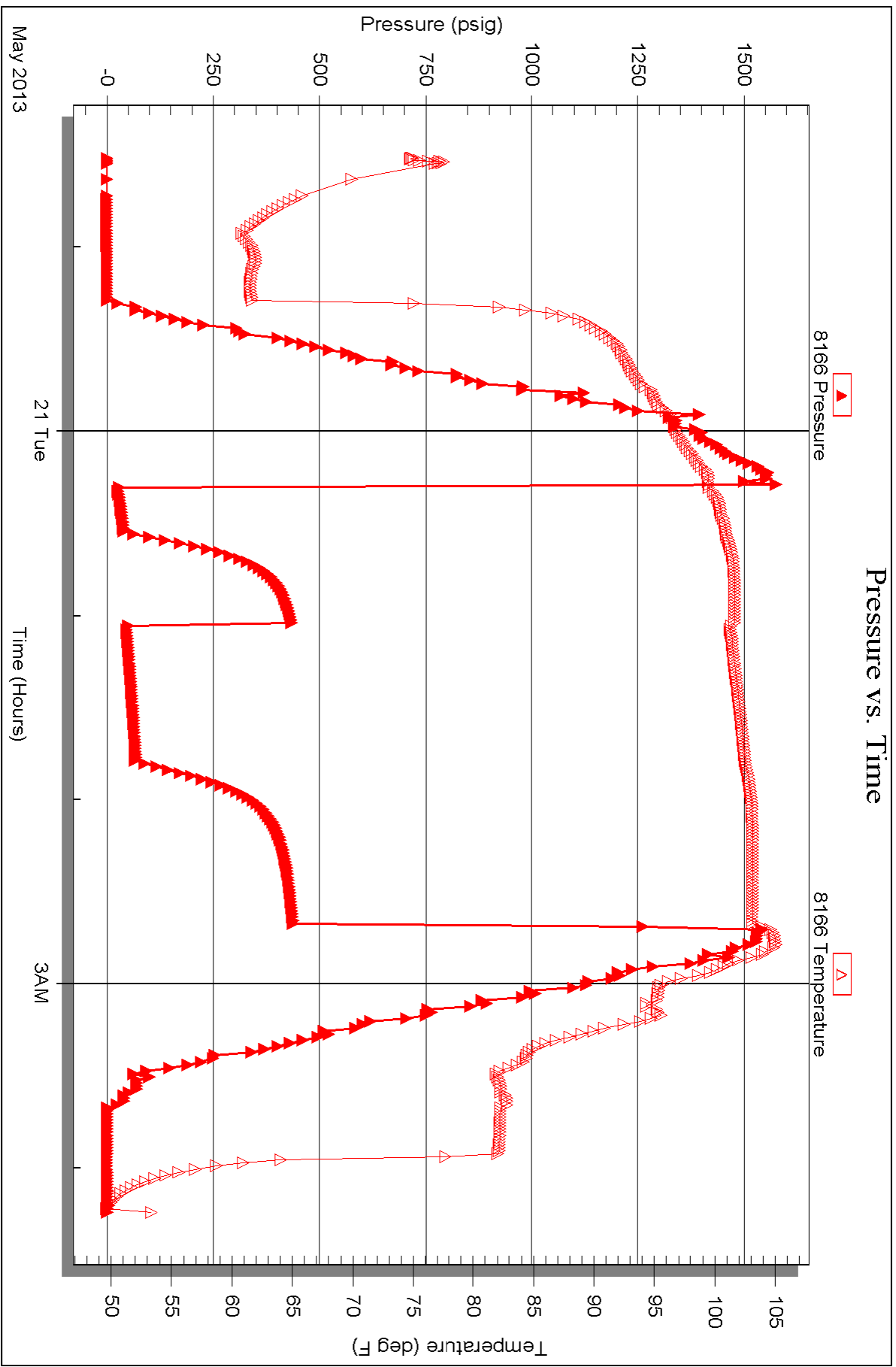


Serial #: 8166

Outside TDI Inc.

Ronald #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 53878

Printed: 2013.05.28 @ 14:35:38



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53878

Well Name & No. Ronald #1 Test No. 1 Date 5/20/13
 Company TDF, Inc Elevation 2004 KB 1996 GL
 Address 1310 Bison Rd Hays KS 67601
 Co. Rep / Geo. Herb Peines Rig Southwind #1
 Location: Sec. 23 Twp. 15S Rge. 18W Co. Ellis State KS

Interval Tested 3264-3315 Zone Tested A-C
 Anchor Length 51 Drill Pipe Run _____ Mud Wt. 8.6
 Top Packer Depth 3259 Drill Collars Run _____ Vis 60
 Bottom Packer Depth 3264 Wt. Pipe Run _____ WL 6.8
 Total Depth 3315 Chlorides 2,800 ppm System LCM 2#

Blow Description IF - BOB in 2 min
ISI - No blow
FF - BOB in 15 sec
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>GSWMC0</u>	<u>15</u>	<u>45</u>	<u>10</u>	<u>30</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 125 BHT 104 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,593 Test 1150 T-On Location 22:05
 (B) First Initial Flow 25 Jars T-Started 22:30
 (C) First Final Flow 39 Safety Joint T-Open 00:17
 (D) Initial Shut-In 435 Circ Sub T-Pulled 2:32
 (E) Second Initial Flow 46 Hourly Standby T-Out 4:15
 (F) Second Final Flow 69 Mileage 26RT 80.60 Comments _____
 (G) Final Shut-In 439 Sampler loaded tools 5/21 23:15
 (H) Final Hydrostatic 1,535 Straddle Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1230.60
 Accessibility _____ MP/DST Disc't _____

Initial Open 15
 Initial Shut-In 30
 Final Flow 43
 Final Shut-In 45
 Sub Total 1230.60

Approved By _____ Our Representative Bruce D...

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