



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Stephanie #1**

#### **10-10s-17w Rooks KS**

Start Date: 2014.05.04 @ 17:43:00

End Date: 2014.05.05 @ 00:43:45

Job Ticket #: 54038                      DST #: 1

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

Printed: 2014.05.06 @ 14:34:19



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

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

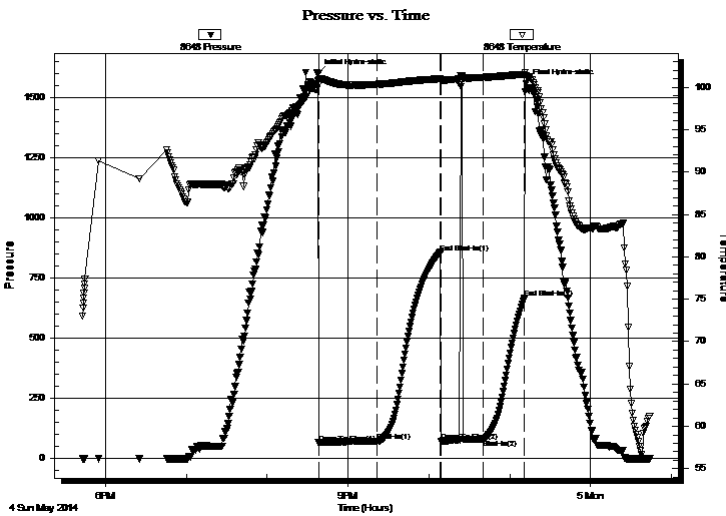
**10-10s-17w Rooks KS**  
**Stephanie #1**  
 Job Ticket: 54038 **DST#: 1**  
 Test Start: 2014.05.04 @ 17:43:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:38:00  
 Time Test Ended: 00:43:45  
 Interval: **3152.00 ft (KB) To 3270.00 ft (KB) (TVD)**  
 Total Depth: 3270.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Cody Bloedorn  
 Unit No: 73  
 Reference Elevations: 2022.00 ft (KB)  
 2012.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8648 Inside**  
 Press@RunDepth: 80.96 psig @ 3258.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.05.04 End Date: 2014.05.05 Last Calib.: 2014.05.05  
 Start Time: 17:43:05 End Time: 00:43:44 Time On Btm: 2014.05.04 @ 20:37:45  
 Time Off Btm: 2014.05.04 @ 23:12:00

TEST COMMENT: 45 - IF- 1 1/2" blow  
 45 - IS- No return  
 30 - FF- No blow for 15 minutes, flushed tool, w eak return fading in and out  
 30 - FS- No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1600.95	100.75	Initial Hydro-static
1	65.15	100.28	Open to Flow (1)
44	72.11	100.33	Shut-In(1)
91	856.87	100.98	End Shut-In(1)
92	72.54	100.79	Open To Flow (2)
123	80.96	101.16	Shut-In(2)
154	667.91	101.51	End Shut-In(2)
155	1558.85	101.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
40.00	VSOCM, 1%O, 99%M	0.56

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

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

**10-10s-17w Rooks KS**  
**Stephanie #1**  
Job Ticket: 54038      **DST#: 1**  
Test Start: 2014.05.04 @ 17:43:00

**Tool Information**

Drill Pipe:	Length: 3156.00 ft	Diameter: 3.80 inches	Volume: 44.27 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	49000.00 lb
			<u>Total Volume: 44.27 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3152.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	118.00 ft				
Tool Length:	139.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Change Over Sub	1.00			3132.00	
Shut In Tool	5.00			3137.00	
Hydraulic tool	5.00			3142.00	
Packer	5.00			3147.00	21.00      Bottom Of Top Packer
Packer	5.00			3152.00	
Stubb	1.00			3153.00	
Perforations	10.00			3163.00	
Change Over Sub	1.00			3164.00	
Drill Pipe	93.00			3257.00	
Change Over Sub	1.00			3258.00	
Recorder	0.00	8648	Inside	3258.00	
Recorder	0.00	8940	Outside	3258.00	
Perforations	9.00			3267.00	
Bullnose	3.00			3270.00	118.00      Bottom Packers & Anchor

**Total Tool Length: 139.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc **10-10s-17w Rooks KS**  
 1310 Bison Rd **Stephanie #1**  
 Hays KS 67601 Job Ticket: 54038 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2014.05.04 @ 17:43:00

## 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: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 3.00 inches			

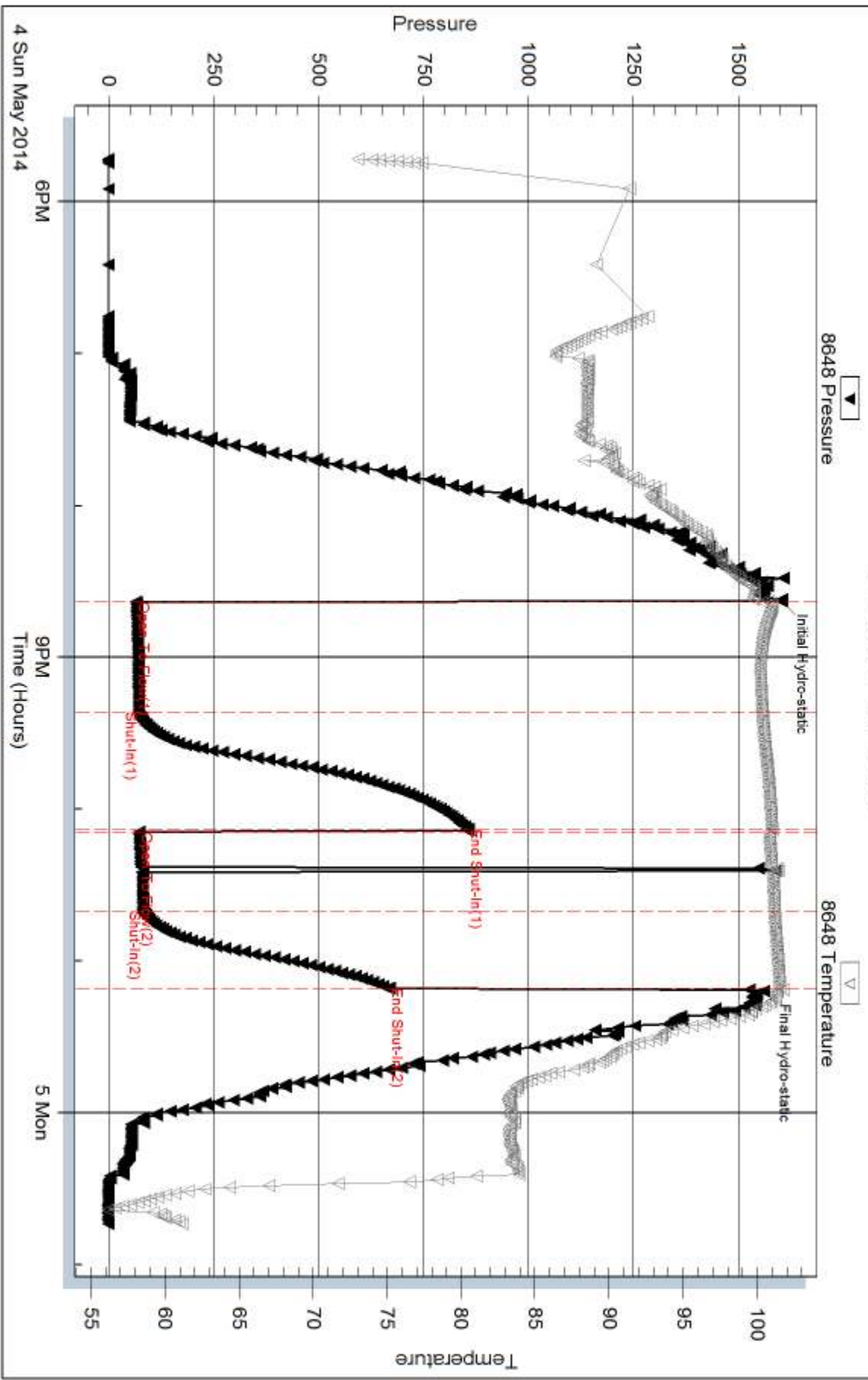
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	VSOCM, 1%O, 99%M	0.561

Total Length: 40.00 ft      Total Volume: 0.561 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time

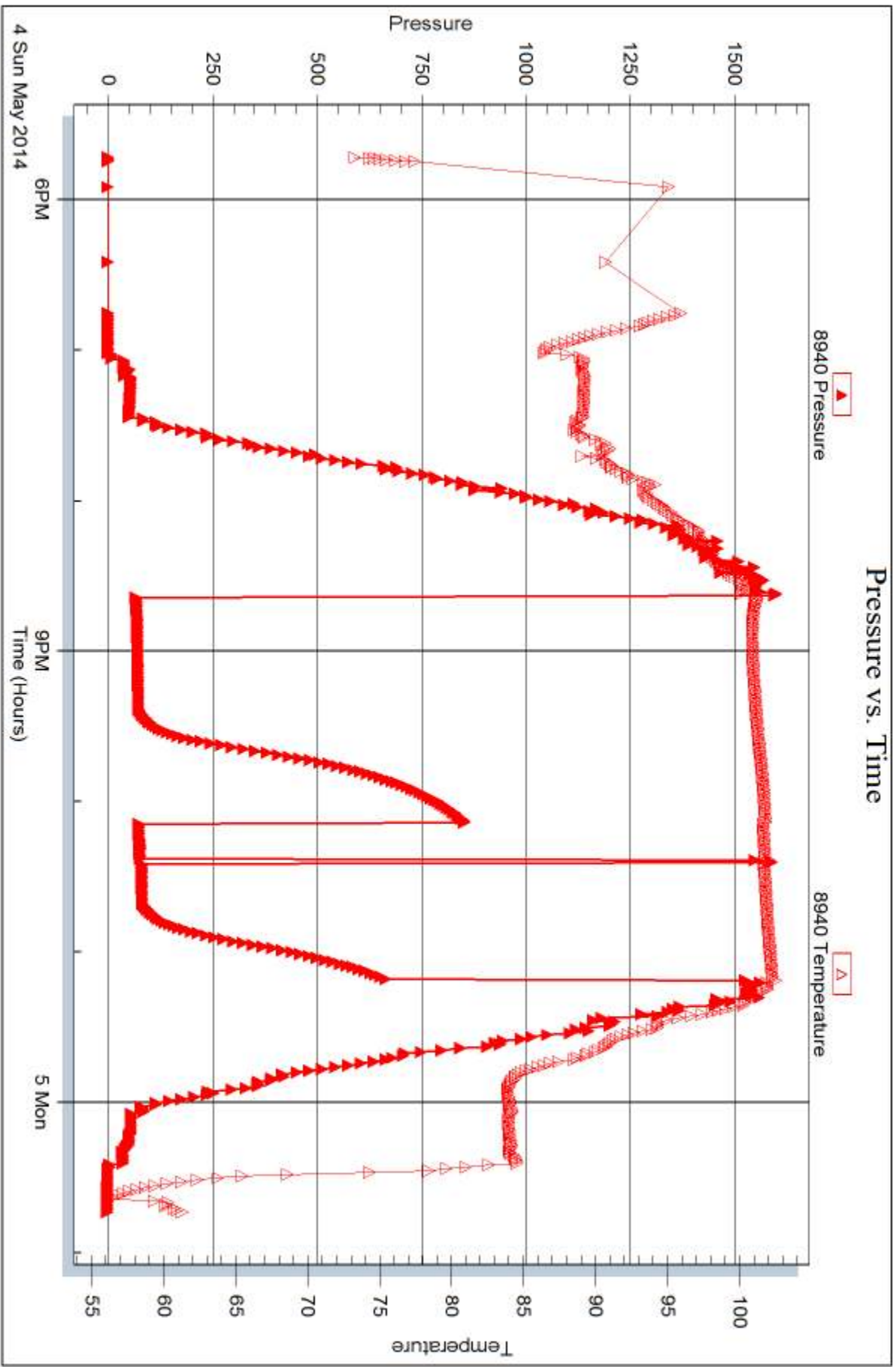


Serial #: 8940

Outside TDI Inc

Stephanie #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 54038

Printed: 2014.05.06 @ 14:34:20



## DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd  
Hays KS 67601

ATTN: Herb Deines

### **Stephanie #1**

#### **10-10s-17w Rooks KS**

Start Date: 2014.05.05 @ 13:31:00

End Date: 2014.05.05 @ 20:07:00

Job Ticket #: 54039                      DST #: 2

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

Printed: 2014.05.06 @ 14:33:47

TDI Inc  
10-10s-17w Rooks KS  
Stephanie #1  
DST # 2  
LKC "G-J"  
2014.05.05





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

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

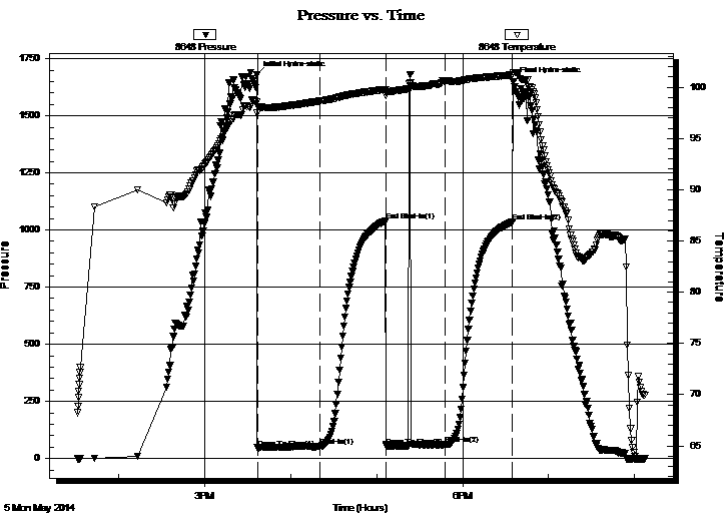
**10-10s-17w Rooks KS**  
**Stephanie #1**  
 Job Ticket: 54039 **DST#: 2**  
 Test Start: 2014.05.05 @ 13:31:00

## GENERAL INFORMATION:

Formation: **LKC "G-J"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 15:36:30 Tester: Cody Bloedorn  
 Time Test Ended: 20:07:00 Unit No: 73  
 Interval: **3298.00 ft (KB) To 3393.00 ft (KB) (TVD)** Reference Elevations: 2022.00 ft (KB)  
 Total Depth: 3393.00 ft (KB) (TVD) 2012.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 8648 Inside**  
 Press@RunDepth: 60.86 psig @ 3368.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.05.05 End Date: 2014.05.05 Last Calib.: 2014.05.05  
 Start Time: 13:31:05 End Time: 20:06:59 Time On Btm: 2014.05.05 @ 15:36:15  
 Time Off Btm: 2014.05.05 @ 18:35:30

**TEST COMMENT:** 45 - IF- 3/4" blow  
 45 - IS- No return  
 45 - FF- No blow for 15 minutes, flushed tool, surged and died  
 45 - FS- No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1677.92	98.54	Initial Hydro-static
1	46.43	97.49	Open To Flow (1)
44	52.10	98.66	Shut-In(1)
90	1040.18	99.79	End Shut-In(1)
91	55.26	99.50	Open To Flow (2)
132	60.86	100.59	Shut-In(2)
179	1035.42	101.21	End Shut-In(2)
180	1649.53	101.43	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	WM - Oil spots, 5%W, 95%M	0.28

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

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

**10-10s-17w Rooks KS**  
**Stephanie #1**  
Job Ticket: 54039 **DST#: 2**  
Test Start: 2014.05.05 @ 13:31:00

**Tool Information**

Drill Pipe:	Length: 3308.00 ft	Diameter: 3.80 inches	Volume: 46.40 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	49000.00 lb
			<u>Total Volume: 46.40 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3298.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	95.00 ft				
Tool Length:	116.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

**Tool Description**

**Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3278.00	
Shut In Tool	5.00			3283.00	
Hydraulic tool	5.00			3288.00	
Packer	5.00			3293.00	21.00 Bottom Of Top Packer
Packer	5.00			3298.00	
Stubb	1.00			3299.00	
Perforations	5.00			3304.00	
Change Over Sub	1.00			3305.00	
Drill Pipe	62.00			3367.00	
Change Over Sub	1.00			3368.00	
Recorder	0.00	8648	Inside	3368.00	
Recorder	0.00	8940	Outside	3368.00	
Perforations	22.00			3390.00	
Bullnose	3.00			3393.00	95.00 Bottom Packers & Anchor

**Total Tool Length: 116.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

TDI Inc **10-10s-17w Rooks KS**  
 1310 Bison Rd **Stephanie #1**  
 Hays KS 67601 Job Ticket: 54039 **DST#: 2**  
 ATTN: Herb Deines Test Start: 2014.05.05 @ 13:31:00

### Mud and Cushion Information

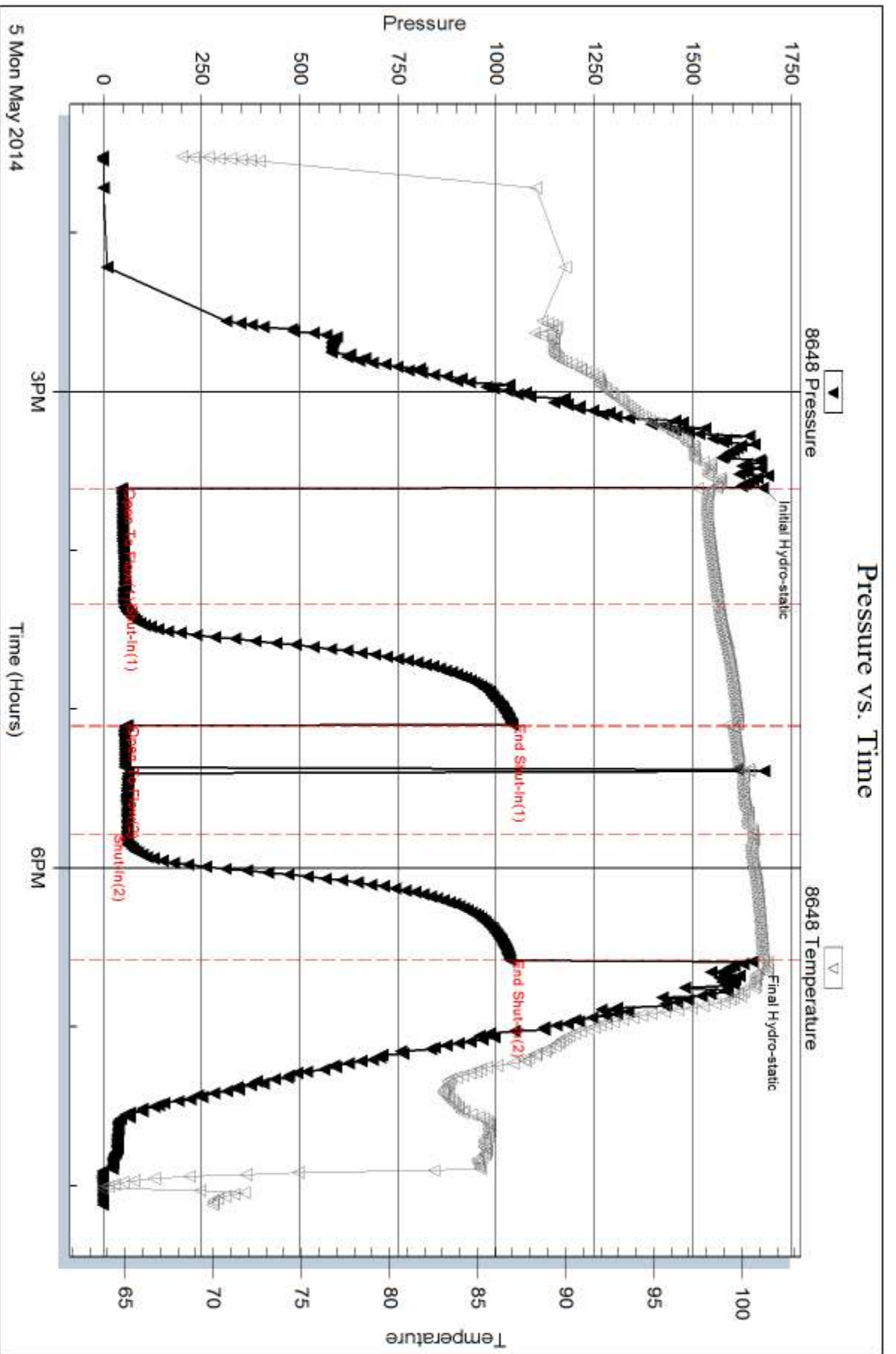
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3300.00 ppm			
Filter Cake: 3.00 inches			

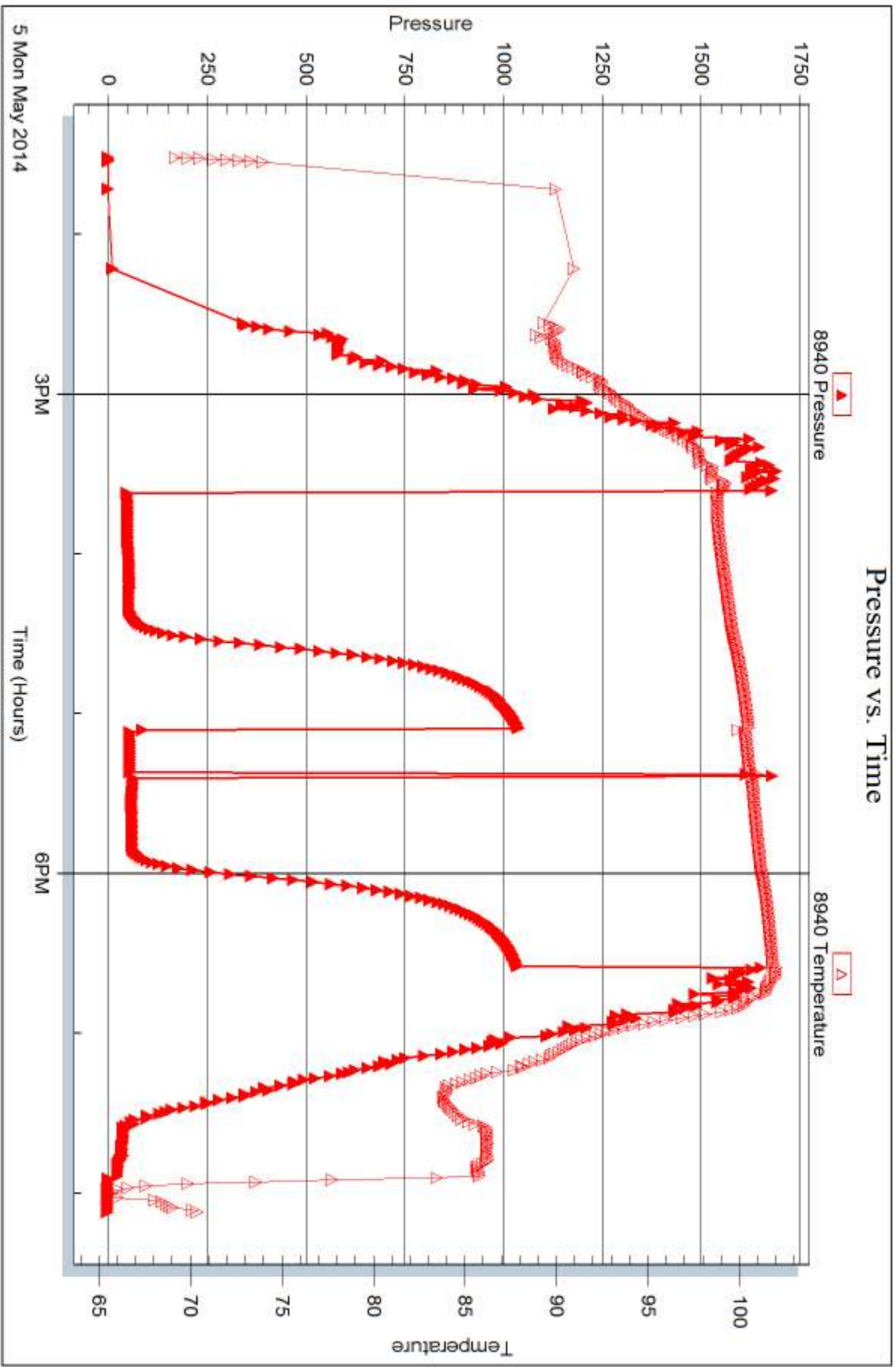
### Recovery Information

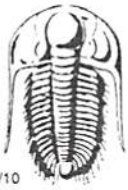
Recovery Table

Length ft	Description	Volume bbl
20.00	WM - Oil spots, 5%W, 95%M	0.281

Total Length: 20.00 ft      Total Volume: 0.281 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54038

Well Name & No. Stephanie #1 Test No. 1 Date 5-4-14  
 Company TDI Inc Elevation 20<sup>22</sup> KB 20<sup>12</sup> GL  
 Address 1310 Bison Rd, Hays KS, 67601  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 10 Twp. 10s Rge. 17w Co. Rooks State KS

Interval Tested 3152-3270 Zone Tested Toronto - 2KC "D"  
 Anchor Length 118' Drill Pipe Run 3156' Mud Wt. 9.0  
 Top Packer Depth 3147 Drill Collars Run — Vis 57  
 Bottom Packer Depth 3152 Wt. Pipe Run — WL 6.4  
 Total Depth 3270 Chlorides 2,500 ppm System LCM 3#

Blow Description IF- 1 1/2" blow  
ISI- No return  
FF- No blow for 15 min. Flushed tool. Weak surface blow  
FSI- No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>USOCM</u>	<u>1</u>		<u>99</u>	
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 1010 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>1600</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1723</u>
(B) First Initial Flow <u>65</u>	<input type="checkbox"/> Jars <u>—</u>	T-Started <u>1743</u>
(C) First Final Flow <u>72</u>	<input type="checkbox"/> Safety Joint <u>—</u>	T-Open <u>2038</u>
(D) Initial Shut-In <u>856</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>2312</u>
(E) Second Initial Flow <u>72</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>1243</u>
(F) Second Final Flow <u>80</u>	<input checked="" type="checkbox"/> Mileage <u>61RT</u> <u>94.55</u>	Comments <u>—</u>
(G) Final Shut-In <u>667</u>	<input type="checkbox"/> Sampler <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
(H) Final Hydrostatic <u>1558</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u>—</u>	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	Total <u>1244.55</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby <u>—</u>	MP/DST Disc't <u>—</u>
	<input type="checkbox"/> Accessibility <u>—</u>	
	Sub Total <u>1244.55</u>	

Approved By \_\_\_\_\_ Our Representative Cody Black

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. 54039

Well Name & No. Stephanie #1 Test No. 2 Date 5-5-14  
 Company TDI Inc Elevation 2022 KB 2012 GL  
 Address 1310 Bison Rd, Hays KS, 67601  
 Co. Rep / Geo. Herb Demes Rig Southwind #1  
 Location: Sec. 10 Twp. 10s Rge. 17w Co. Rooks State KS

Interval Tested 3298-3393 Zone Tested LKC "6-5"  
 Anchor Length 95' Drill Pipe Run 3308' Mud Wt. 9.1  
 Top Packer Depth 3293 Drill Collars Run — Vis 45  
 Bottom Packer Depth 3298 Wt. Pipe Run — WL 7.6  
 Total Depth 3393 Chlorides 3,300 ppm System LCM 3

Blow Description IF- 3/4" blow  
ISI - No return  
FF - No blow for 15 min. Flushed tool. Surged & died  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>W.M. <del>100</del> - oil spots</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 20' BHT 101° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1677  Test 1150 T-On Location 1309  
 (B) First Initial Flow 46  Jars — T-Started 1331  
 (C) First Final Flow 52  Safety Joint — T-Open 1537'  
 (D) Initial Shut-In 1040  Circ Sub — T-Pulled 1837  
 (E) Second Initial Flow 55  Hourly Standby — T-Out 2008  
 (F) Second Final Flow 60  Mileage 61 RTx2 189.10 Comments Loaded tools  
 (G) Final Shut-In 1035  Sampler — 5-6-14 @ 11:54 am  
 (H) Final Hydrostatic 1649  Straddle —  
 Ruined Shale Packer —  
 Shale Packer —  
 Ruined Packer —  
 Extra Packer —  
 Extra Copies —

Initial Open 45  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45  
 Extra Recorder —  
 Day Standby —  
 Accessibility —  
 Sub Total 1339.10  
 Sub Total 1339.10  
 Sub Total 0  
 Total 1339.10  
 MP/DST Disc't —

Approved By \_\_\_\_\_ Our Representative Cody Bloodon

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.