

**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd  
Hays KS 67601-9696

ATTN: Herb Deines

### **Augustine #1**

#### **15-13s-17w Ellis,KS**

Start Date: 2012.05.23 @ 07:43:05

End Date: 2012.05.23 @ 14:22:39

Job Ticket #: 47332                      DST #: 1

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

Printed: 2012.05.24 @ 09:29:01

TDI Inc. 15-13s-17w Ellis,KS Augustine #1 DST # 1 Arbuckle 2012.05.23



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**15-13s-17w Ellis,KS**  
**Augustine #1**  
Job Ticket: 47332      **DST#: 1**  
Test Start: 2012.05.23 @ 07:43:05

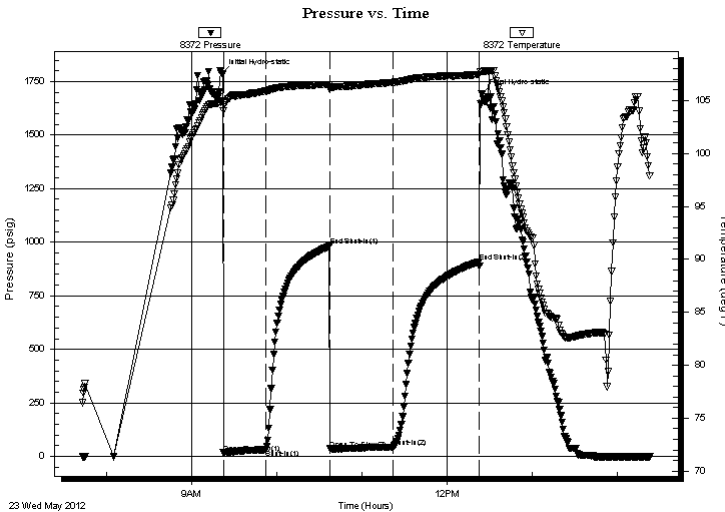
## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 09:22:10  
Time Test Ended: 14:22:39  
Interval: **3536.00 ft (KB) To 3596.00 ft (KB) (TVD)**  
Total Depth: 3732.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Straddle (Initial)  
Tester: Andy Carreira  
Unit No: 39  
Reference Elevations: 2018.00 ft (KB)  
2011.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8372      Outside**  
Press @ Run Depth: 44.08 psig @ 3539.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2012.05.23      End Date: 2012.05.23      Last Calib.: 2012.05.23  
Start Time: 07:43:05      End Time: 14:22:40      Time On Btm: 2012.05.23 @ 09:20:50  
Time Off Btm: 2012.05.23 @ 12:24:20

**TEST COMMENT:** IF:(30min) Fair 3" blow  
IS:(45min) No Return  
FF:(45min) 1" blow  
FS:(60min) No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1788.17	104.93	Initial Hydro-static
2	17.24	104.05	Open To Flow (1)
32	31.25	105.88	Shut-In(1)
77	981.82	106.53	End Shut-In(1)
77	35.89	106.06	Open To Flow (2)
121	44.08	106.71	Shut-In(2)
182	908.81	107.44	End Shut-In(2)
184	1691.78	107.74	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM o=5% m=95%	0.84
10.00	CO o=100%	0.14

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

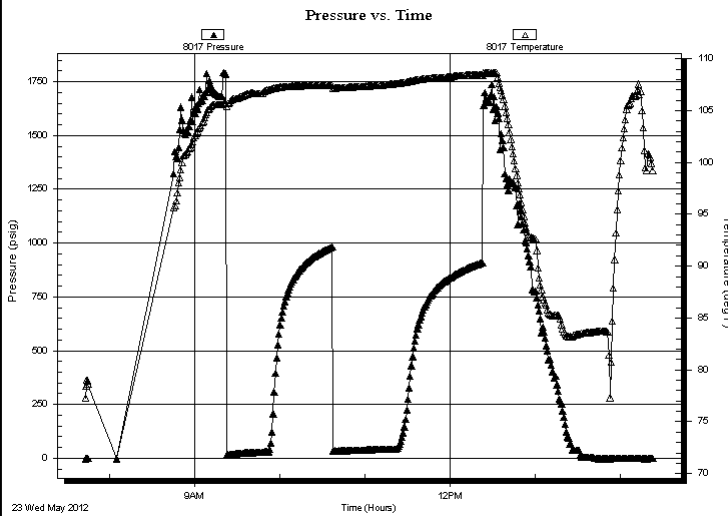
**15-13s-17w Ellis, KS**  
**Augustine #1**  
Job Ticket: 47332      **DST#: 1**  
Test Start: 2012.05.23 @ 07:43:05

## GENERAL INFORMATION:

Formation: <b>Arbuckle</b>				Test Type: Conventional Straddle (Initial)
Deviated: No Whipstock:	ft (KB)			Tester: Andy Carreira
Time Tool Opened: 09:22:10				Unit No: 39
Time Test Ended: 14:22:39				Reference Elevations: 2018.00 ft (KB)
<b>Interval: 3536.00 ft (KB) To 3596.00 ft (KB) (TVD)</b>				2011.00 ft (CF)
Total Depth: 3732.00 ft (KB) (TVD)				KB to GR/CF: 7.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair			

<b>Serial #: 8017</b>	<b>Inside</b>			Capacity: 8000.00 psig
Press @ Run Depth: psig @ 3539.00 ft (KB)				Last Calib.: 2012.05.23
Start Date: 2012.05.23	End Date: 2012.05.23			Time On Btm:
Start Time: 07:43:05	End Time: 14:22:50			Time Off Btm:

TEST COMMENT: IF:(30min) Fair 3" blow  
IS:(45min) No Return  
FF:(45min) 1" blow  
FS:(60min) No Return



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

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	OCM o=5% m=95%	0.84
10.00	CO o=100%	0.14

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



**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

TDI Inc.  
1310 Bison Rd  
Hays KS 67601-9696  
ATTN: Herb Deines

**15-13s-17w Ellis, KS**  
**Augustine #1**  
Job Ticket: 47332      **DST#: 1**  
Test Start: 2012.05.23 @ 07:43:05

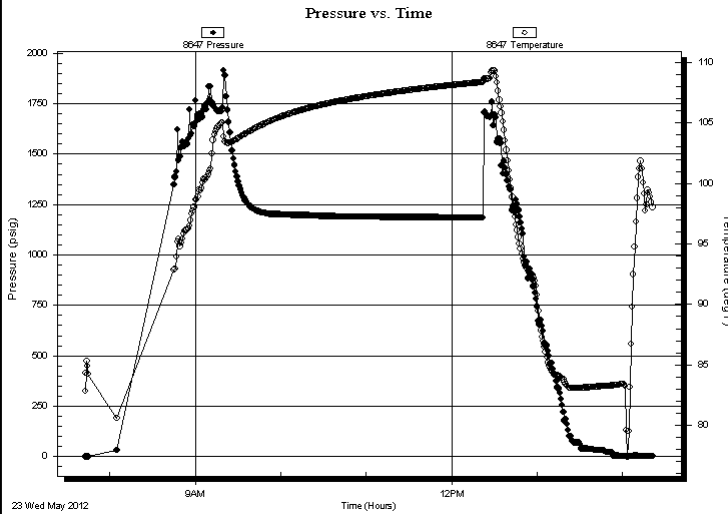
### GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 09:22:10  
Time Test Ended: 14:22:39  
Interval: **3536.00 ft (KB) To 3596.00 ft (KB) (TVD)**  
Total Depth: 3732.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Straddle (Initial)  
Tester: Andy Carreira  
Unit No: 39  
Reference Elevations: 2018.00 ft (KB)  
2011.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8647 Below (Straddle)**  
Press @ Run Depth: psig @ 3605.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2012.05.23 End Date: 2012.05.23 Last Calib.: 2012.05.23  
Start Time: 07:43:05 End Time: 14:21:10 Time On Btm:  
Time Off Btm:

TEST COMMENT: IF:(30min) Fair 3" blow  
IS:(45min) No Return  
FF:(45min) 1" blow  
FS:(60min) No Return



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM o=5% m=95%	0.84
10.00	CO o=100%	0.14

### 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 67601-9696  
ATTN: Herb Deines

**15-13s-17w Ellis,KS**  
**Augustine #1**  
Job Ticket: 47332      **DST#: 1**  
Test Start: 2012.05.23 @ 07:43:05

**Tool Information**

Drill Pipe:	Length: 3540.00 ft	Diameter: 3.80 inches	Volume: 49.66 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 49.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3536.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3596.00 ft			
Interval between Packers:	60.00 ft			
Tool Length:	220.00 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			3517.00	
Shut In Tool	5.00			3522.00	
Hydraulic tool	5.00			3527.00	
Packer	5.00			3532.00	20.00 Bottom Of Top Packer
Packer	4.00			3536.00	
Stubb	1.00			3537.00	
Perforations	1.00			3538.00	
Change Over Sub	1.00			3539.00	
Recorder	0.00	8017	Inside	3539.00	
Recorder	0.00	8372	Outside	3539.00	
Drill Pipe	31.00			3570.00	
Change Over Sub	1.00			3571.00	
Perforations	20.00			3591.00	
Blank Spacing	4.00			3595.00	
Blank Off Sub	1.00			3596.00	60.00 Tool Interval
Packer	4.00			3600.00	
Stubb	1.00			3601.00	
Perforations	3.00			3604.00	
Change Over Sub	1.00			3605.00	
Recorder	0.00	8647	Below	3605.00	
Drill Pipe	126.00			3731.00	
Change Over Sub	1.00			3732.00	
Perforations	2.00			3734.00	
Bullnose	2.00			3736.00	140.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>220.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI Inc. **15-13s-17w Ellis,KS**  
 1310 Bison Rd **Augustine #1**  
 Hays KS 67601-9696 Job Ticket: 47332 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2012.05.23 @ 07:43:05

## Mud and Cushion Information

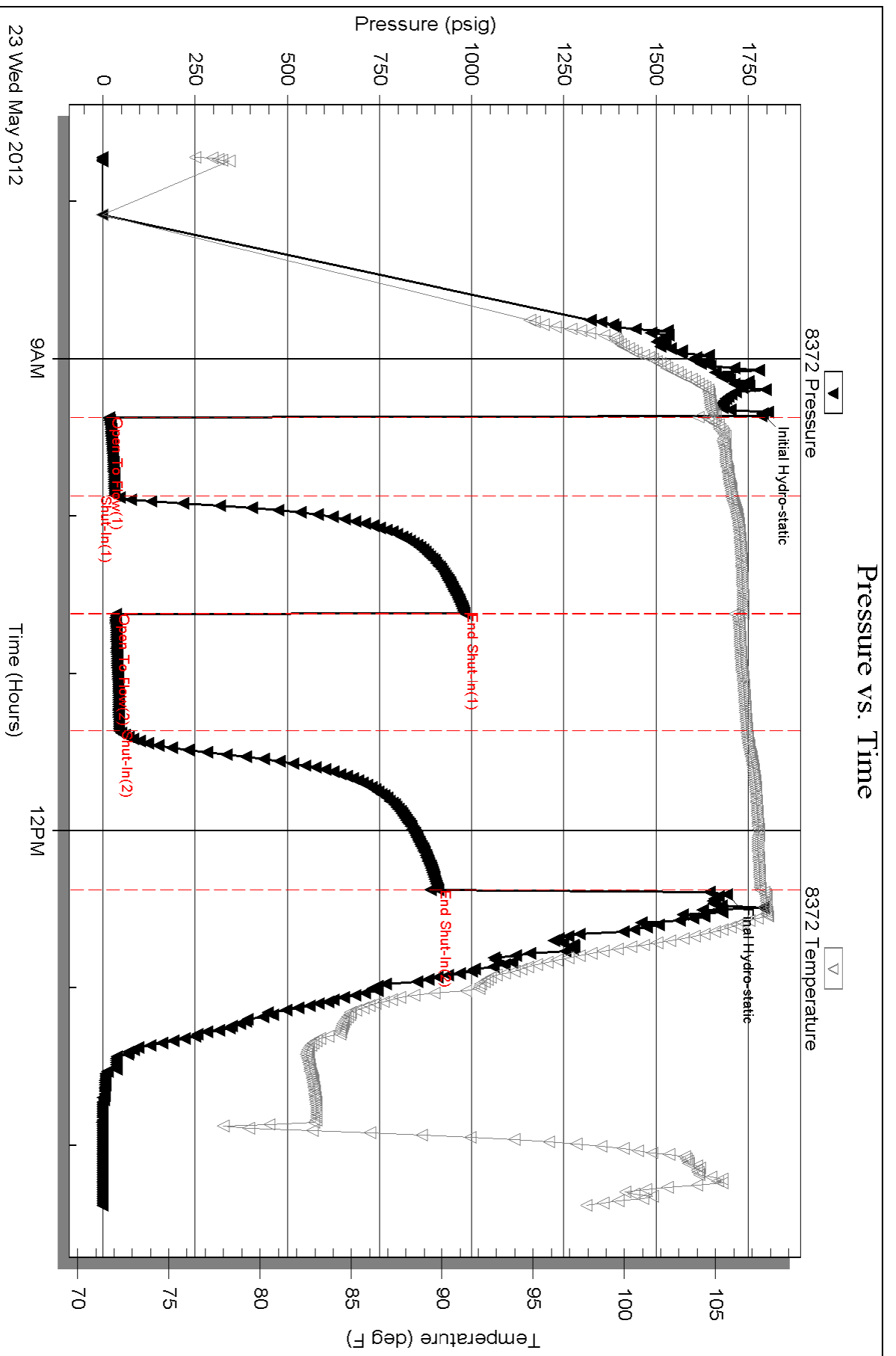
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6500.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM o=5% m=95%	0.842
10.00	CO o=100%	0.140

Total Length: 70.00 ft      Total Volume: 0.982 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



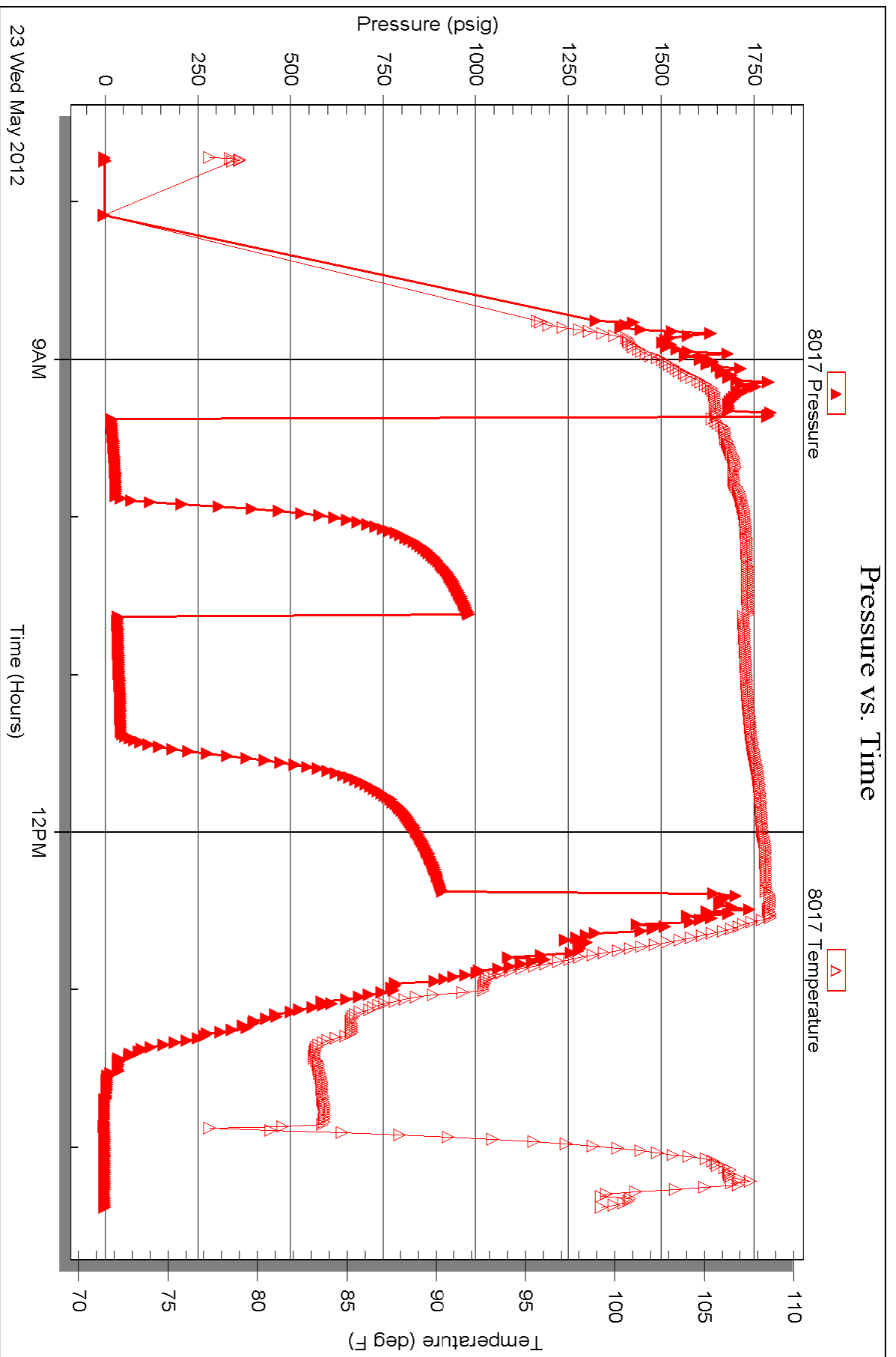
Serial #: 8017

Inside

TDI Inc.

Augustine #1

DST Test Number: 1

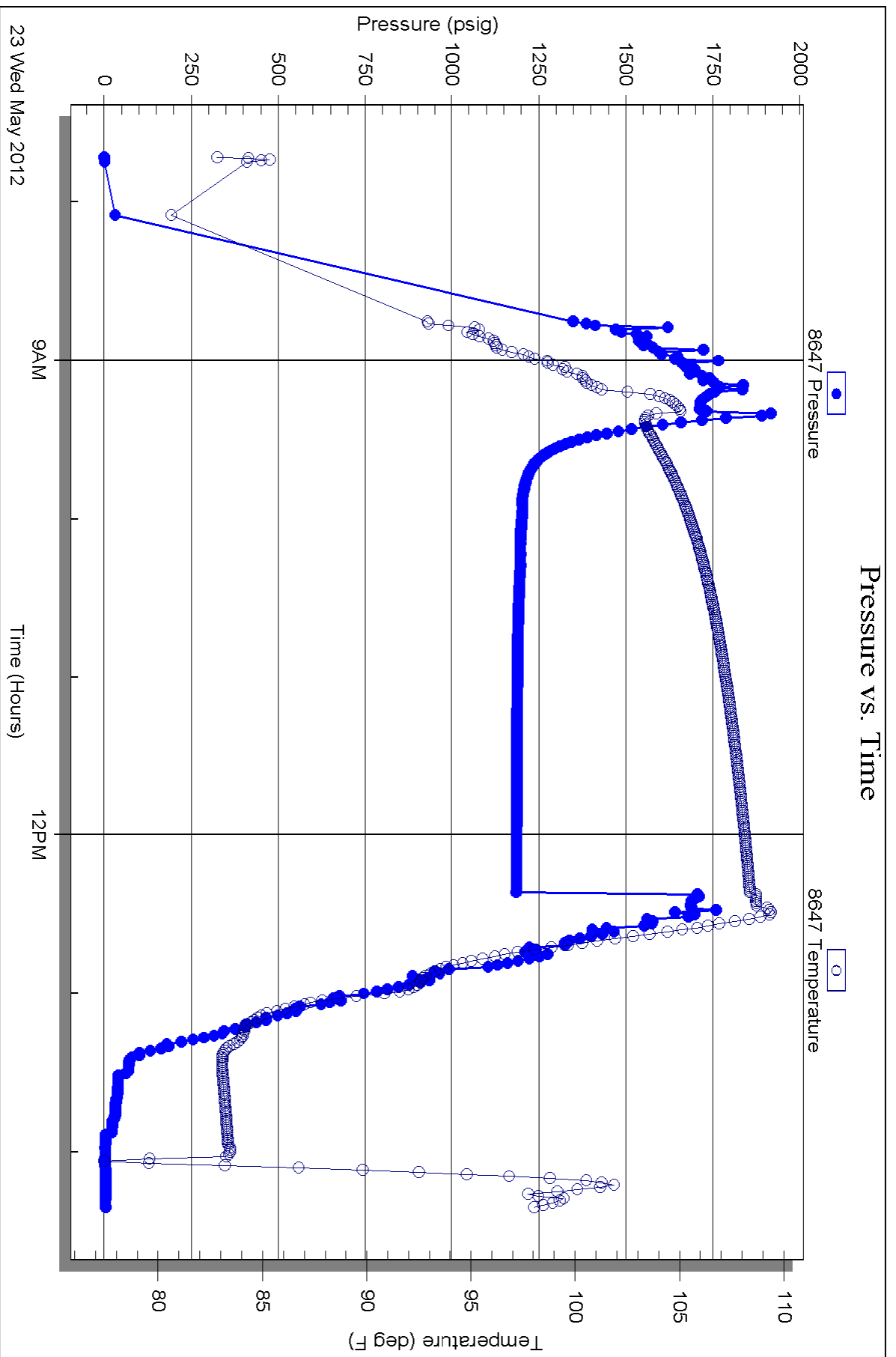


Triobite Testing, Inc

Ref. No: 473332

Printed: 2012.05.24 @ 09:29:05







# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 47332

Well Name & No. Augustine #1 Test No. 1 Date 5-23-12  
 Company TDI inc Elevation 2018 KB 2011 GL  
 Address 1310 BISON RD Hays, Ks. 67601 + 9696  
 Co. Rep / Geo. Herb Deines Rig Southwind #1  
 Location: Sec. 15 Twp. 13S Rge. 17W Co. Ellis State K5

Interval Tested 3536-3596 Zone Tested Arbuckle  
 Anchor Length 60 Drill Pipe Run 3540 Mud Wt. 9.1  
 Top Packer Depth 3536 Drill Collars Run 0 Vis 57  
 Bottom Packer Depth 3596 Wt. Pipe Run 0 WL 6.8  
 Total Depth 3732 Chlorides 6500 ppm System LCM 2

Blow Description IF: FAIR 3" blow  
ISI: NO RETURN  
FF: 1" blow  
FST: NO RETURN

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>CO</u>		<u>100</u>		
<u>60</u>	<u>OCM</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 Total 70' BHT Gravity 24 API RW @      °F Chlorides      ppm

(A) Initial Hydrostatic 1788  Test ← 1150 T-On Location 06:30  
 (B) First Initial Flow 17  Jars T-Started 07:43  
 (C) First Final Flow 31  Safety Joint T-Open 09:22  
 (D) Initial Shut-In 981  Circ Sub T-Pulled 12:22  
 (E) Second Initial Flow 35  Hourly Standby T-Out 14:23  
 (F) Second Final Flow 44  Mileage ← 19RT 29.45 Comments  
 (G) Final Shut-In 908  Sampler  
 (H) Final Hydrostatic 1691  Straddle ← 600  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1779.45  
 Accessibility MP/DST Disc't

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60  
 Sub Total 1779.45

Approved By \_\_\_\_\_ Our Representative [Signature]  
 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.