



## DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd.  
Hays, KS 67601

ATTN: Herb Deines

### **Schrant #1**

#### **30-14s-15w Russell,KS**

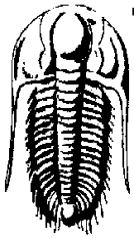
Start Date: 2011.12.10 @ 16:58:15

End Date: 2011.12.10 @ 21:34:45

Job Ticket #: 44223                      DST #: 1

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

Printed: 2011.12.13 @ 15:59:49



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

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

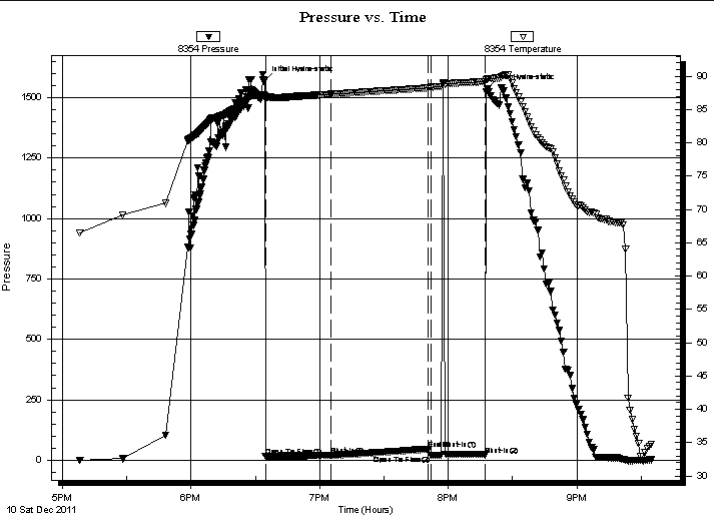
**30-14s-15w Russell, KS**  
**Schrant #1**  
Job Ticket: 44223      **DST#: 1**  
Test Start: 2011.12.10 @ 16:58:15

## GENERAL INFORMATION:

Formation: **LKC "A-B"**  
Deviated: No Whipstock:      ft (KB)  
Time Tool Opened: 18:35:05  
Time Test Ended: 21:34:45  
Interval: **3050.00 ft (KB) To 3095.00 ft (KB) (TVD)**  
Total Depth: 3085.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 1834.00 ft (KB)  
1825.00 ft (CF)  
KB to GR/CF: 9.00 ft  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Dustin Rash  
Unit No: 38

**Serial #: 8354      Inside**  
Press @ Run Depth: 19.50 psig @ 3077.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.12.10      End Date: 2011.12.10      Last Calib.: 2011.12.10  
Start Time: 17:08:15      End Time: 21:34:45      Time On Btm: 2011.12.10 @ 18:34:35  
Time Off Btm: 2011.12.10 @ 20:18:15

**TEST COMMENT:** IF-Weak 1/4 inch blow. Died @ 19 minutes 30 seconds.  
IS-No Return.  
FF-No Blow. Flushed Tool. Surface blow for 6 minutes. Pulled Tool.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1569.28	87.12	Initial Hydro-static
1	16.65	86.83	Open To Flow (1)
31	19.50	87.28	Shut-In(1)
77	46.67	88.23	End Shut-In(1)
78	20.36	88.30	Open To Flow (2)
103	21.17	89.19	Shut-In(2)
104	1536.37	89.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
20.00	100%Mud	0.28

## 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

**30-14s-15w Russell, KS**  
**Schrant #1**  
Job Ticket: 44223      **DST#: 1**  
Test Start: 2011.12.10 @ 16:58:15

**Tool Information**

Drill Pipe:	Length: 3040.00 ft	Diameter: 3.80 inches	Volume: 42.64 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: 5000.00 lb
			<u>Total Volume: 42.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 34000.00 lb
Depth to Top Packer:	3040.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	65.00 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			3021.00	
Shut In Tool	5.00			3026.00	
Hydraulic tool	5.00			3031.00	
Packer	5.00			3036.00	20.00      Bottom Of Top Packer
Packer	4.00			3040.00	
Stubb	1.00			3041.00	
Perforations	3.00			3044.00	
Change Over Sub	1.00			3045.00	
Drill Pipe	31.00			3076.00	
Change Over Sub	1.00			3077.00	
Recorder	0.00	8354	Inside	3077.00	
Recorder	0.00	8520	Outside	3077.00	
Perforations	5.00			3082.00	
Bullnose	3.00			3085.00	45.00      Bottom Packers & Anchor

**Total Tool Length: 65.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

TDI, Inc.

**30-14s-15w Russell,KS**

1310 Bison Rd.  
Hays, KS 67601

**Schrant #1**

Job Ticket: 44223

**DST#: 1**

ATTN: Herb Deines

Test Start: 2011.12.10 @ 16:58:15

**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:

bbbl

Water Loss: 7.97 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
20.00	100%Mud	0.281

Total Length: 20.00 ft      Total Volume: 0.281 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

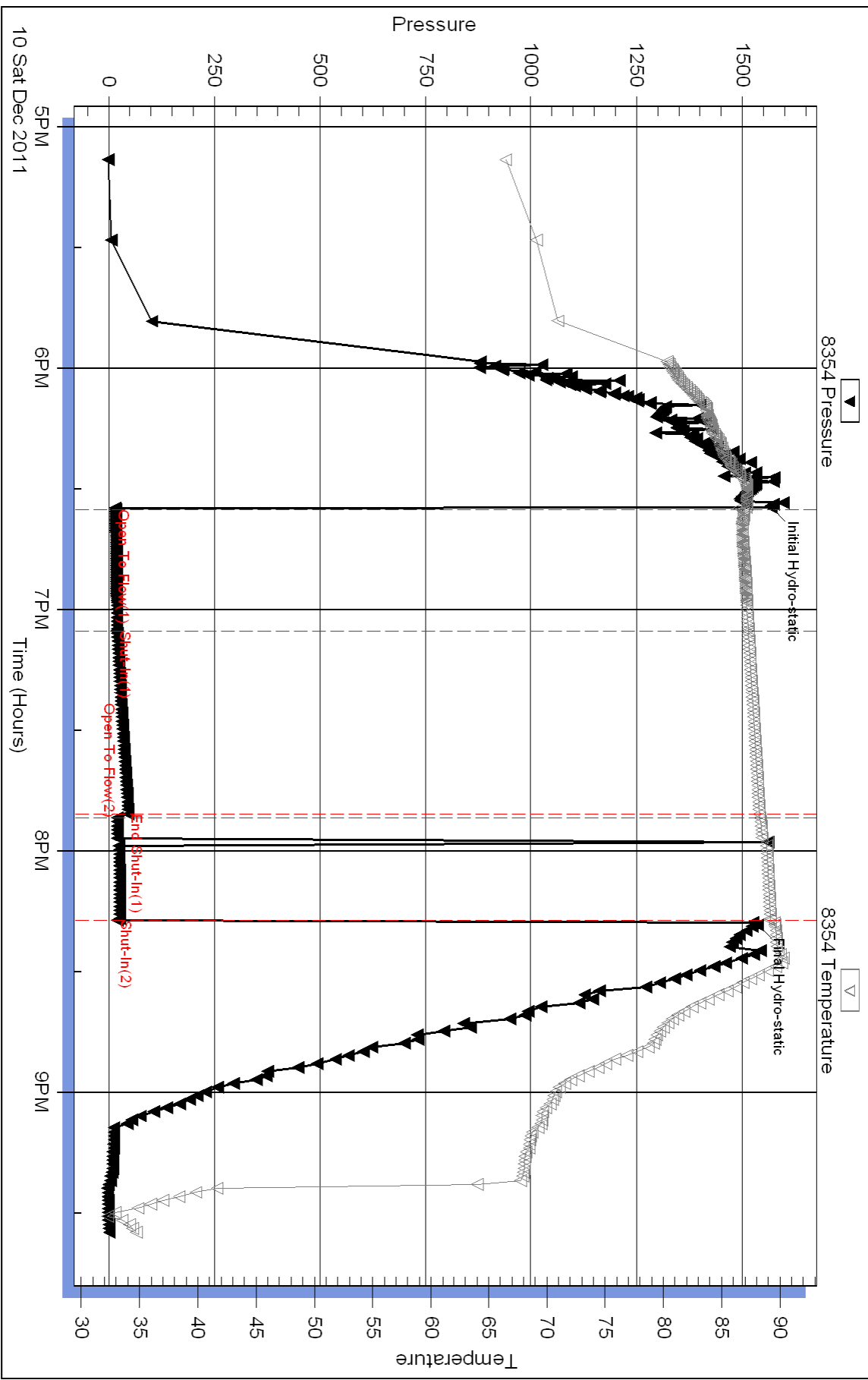
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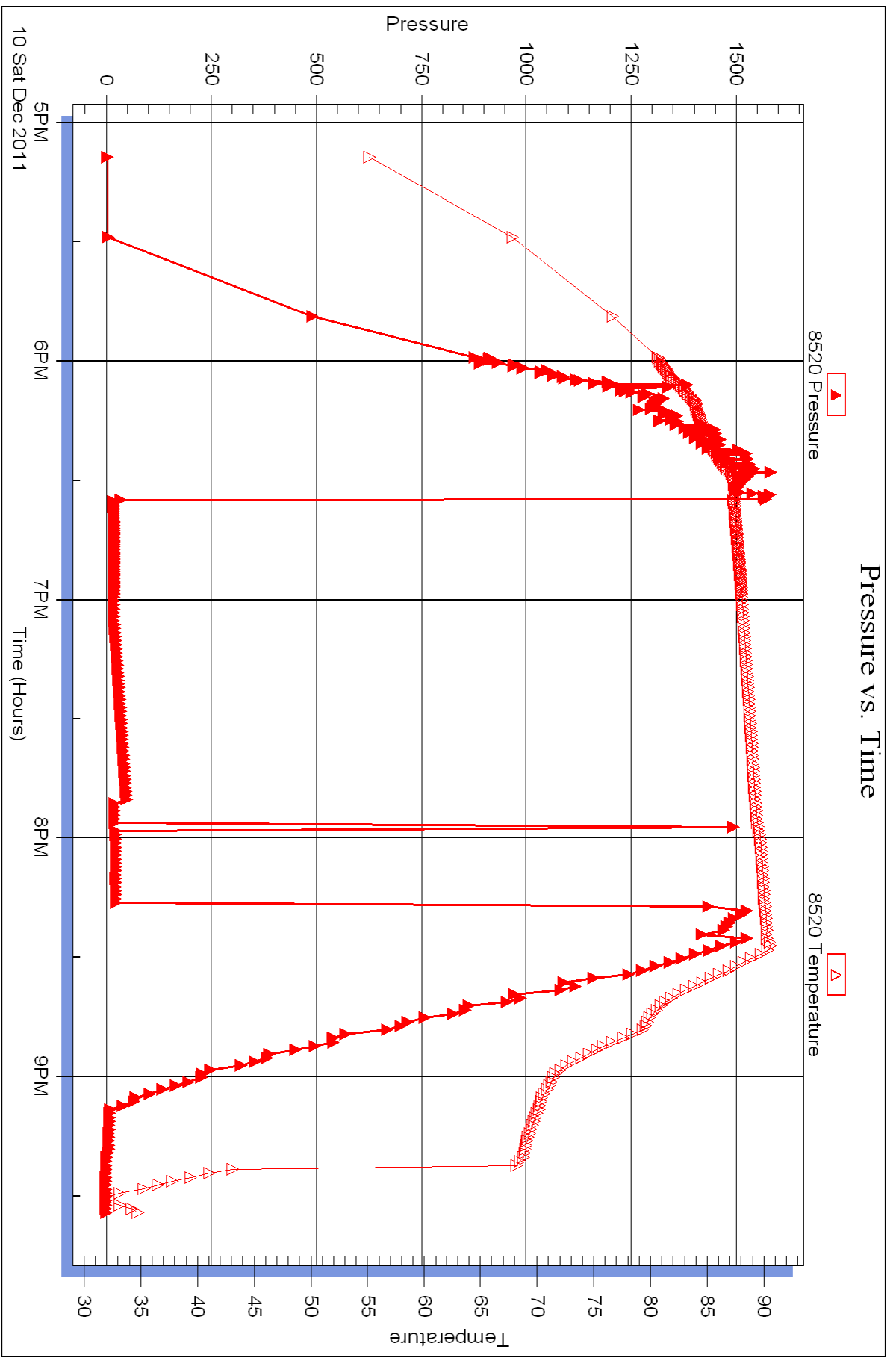
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd.  
Hays, KS 67601

ATTN: Herb Deines

### **Schrant #1**

#### **30-14s-15w Russell,KS**

Start Date: 2011.12.11 @ 20:30:30

End Date: 2011.12.12 @ 01:22:30

Job Ticket #: 44224                      DST #: 2

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

Printed: 2011.12.13 @ 15:58:12





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

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

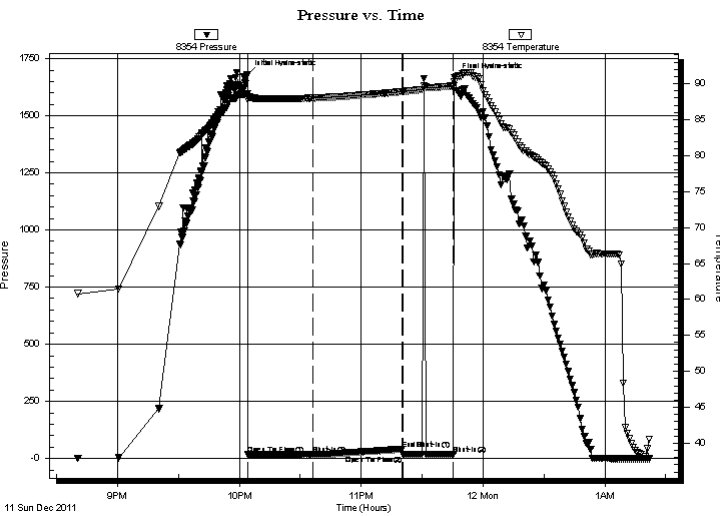
**30-14s-15w Russell, KS**  
**Schrant #1**  
Job Ticket: 44224      **DST#: 2**  
Test Start: 2011.12.11 @ 20:30:30

## GENERAL INFORMATION:

Formation: **Pleasanton**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 22:04:10  
Time Test Ended: 01:22:30  
Interval: **3270.00 ft (KB) To 3308.00 ft (KB) (TVD)**  
Total Depth: 3308.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Dustin Rash  
Unit No: 38  
Reference Elevations: 1834.00 ft (KB)  
1825.00 ft (CF)  
KB to GR/CF: 9.00 ft

**Serial #: 8354      Inside**  
Press @ Run Depth: 17.05 psig @ 3272.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2011.12.11      End Date: 2011.12.12      Last Calib.: 2011.12.12  
Start Time: 20:40:30      End Time: 01:22:30      Time On Btm: 2011.12.11 @ 22:04:00  
Time Off Btm: 2011.12.11 @ 23:46:00

**TEST COMMENT:** IF-Surging 1/4 inch blow .  
ISI-No Return  
FF-No Blow . Flushed Tool. Few Bubbles. Pulled Tool.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1680.35	88.58	Initial Hydro-static
1	17.53	87.83	Open To Flow (1)
32	17.05	87.99	Shut-In(1)
76	40.80	88.88	End Shut-In(1)
77	16.03	88.88	Open To Flow (2)
102	18.07	89.68	Shut-In(2)
102	1667.30	90.32	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	100%Mud	0.07

## 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

**30-14s-15w Russell, KS**  
**Schrant #1**  
Job Ticket: 44224      **DST#: 2**  
Test Start: 2011.12.11 @ 20:30:30

**Tool Information**

Drill Pipe:	Length: 3266.00 ft	Diameter: 3.80 inches	Volume: 45.81 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:	5000.00 lb
			<u>Total Volume: 45.81 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	36000.00 lb
Depth to Top Packer:	3270.00 ft			Final	36000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	38.00 ft				
Tool Length:	58.00 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>
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Change Over Sub	1.00			3251.00	
Shut In Tool	5.00			3256.00	
Hydraulic tool	5.00			3261.00	
Packer	5.00			3266.00	20.00      Bottom Of Top Packer
Packer	4.00			3270.00	
Stubb	1.00			3271.00	
Perforations	1.00			3272.00	
Recorder	0.00	8354	Inside	3272.00	
Recorder	0.00	8520	Outside	3272.00	
Perforations	33.00			3305.00	
Bullnose	3.00			3308.00	38.00      Bottom Packers & Anchor

**Total Tool Length: 58.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI, Inc.

**30-14s-15w Russell, KS**

1310 Bison Rd.  
Hays, KS 67601

**Schrant #1**

Job Ticket: 44224

**DST#: 2**

ATTN: Herb Deines

Test Start: 2011.12.11 @ 20:30:30

## 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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6700.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100%Mud	0.070

Total Length: 5.00 ft      Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

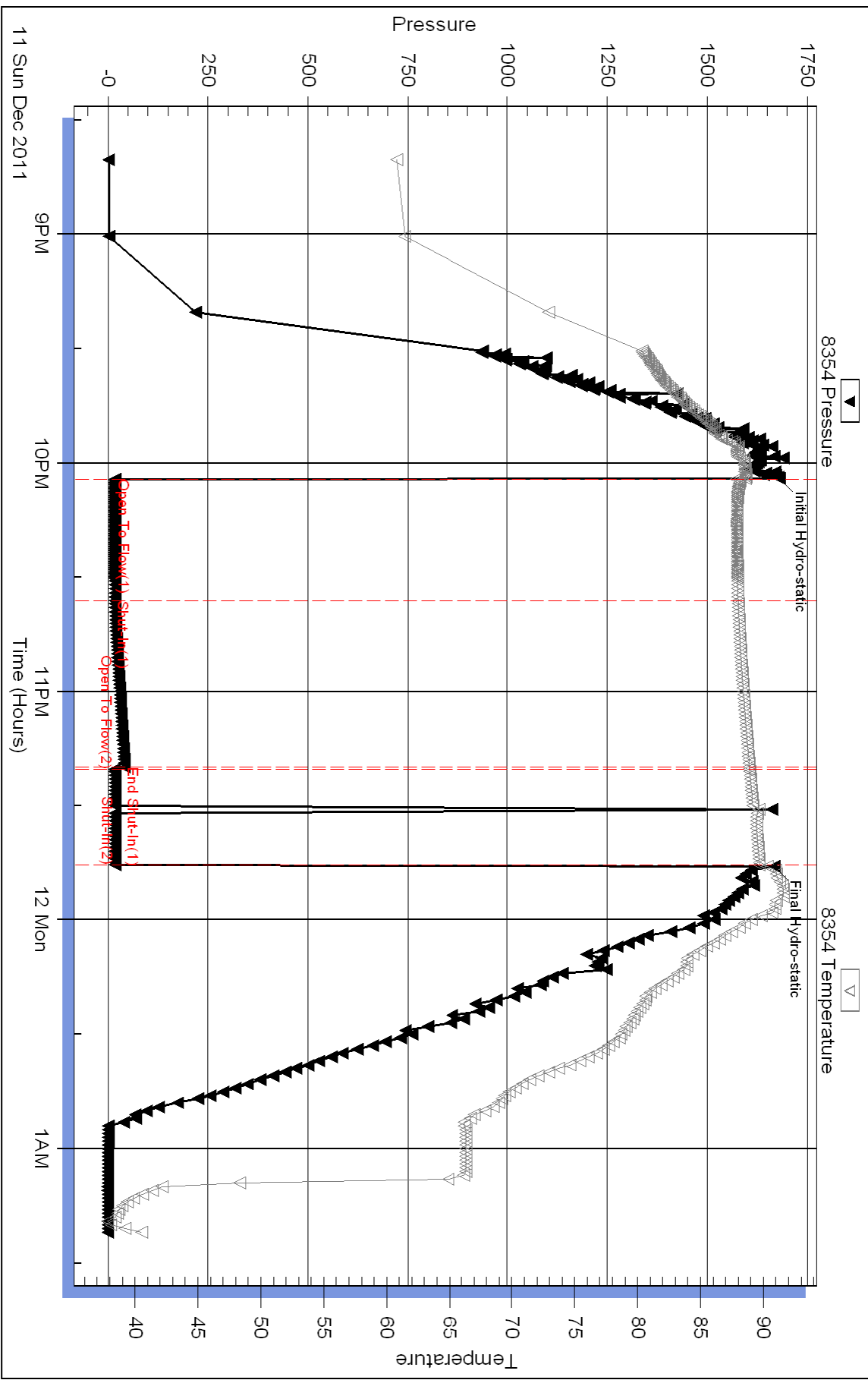
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time

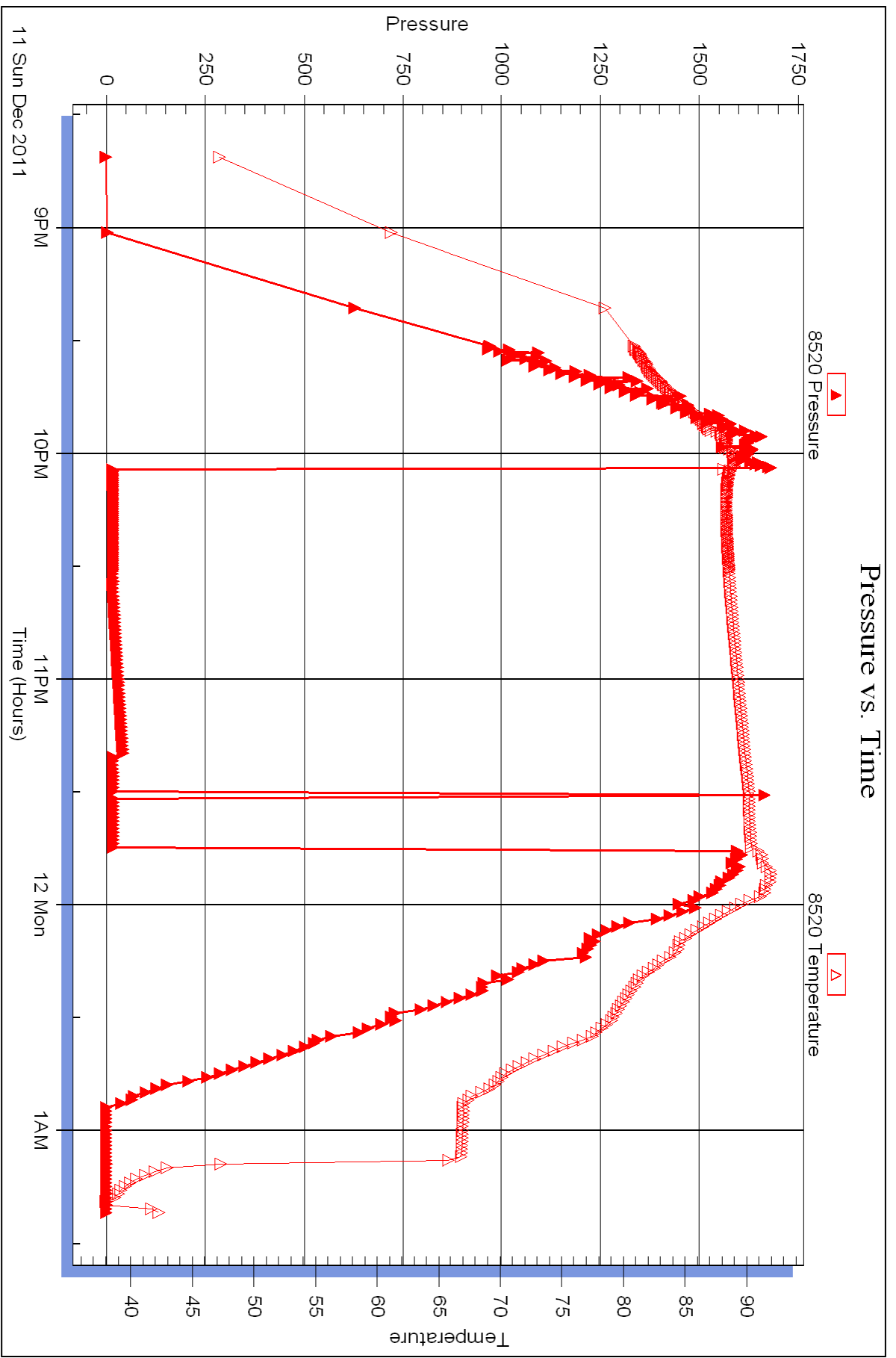


Serial #: 8520

Outside TDI, Inc.

Schirant #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 44224

Printed: 2011.12.13 @ 15:58:15



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
DEC 13 2011

## Test Ticket

NO. 44223

Well Name & No. Schwartz #1 Test No. 2 Date 12-10-11  
 Company TDI Inc. Elevation 1834 KB 1825 GL  
 Address 1310 Bison Rd. Hays, KS 67601  
 Co. Rep / Geo. Herb Dienes Rig Southwind 2  
 Location: Sec. 30 Twp. 14S Rge. 15W Co. Russell State KS

Interval Tested 3040-3095 Zone Tested LKC "A-B"  
 Anchor Length 45' Drill Pipe Run 3040 Mud Wt. 9.3  
 Top Packer Depth 3035 Drill Collars Run 0 Vis 51  
 Bottom Packer Depth 3040 Wt. Pipe Run 0 WL 8.0  
 Total Depth 3095 Chlorides 6500 ppm System LCM 2#

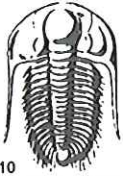
Blow Description IF - Weak 1/4 inch blow, Died @ 19 minutes 30 seconds.  
ISZ - No Return.  
FF - No blow, Flushed Tool, Surface blow 16 minutes, Pulled Tool.

Rec	Feet of	%gas	%oil	%water	%mud

Rec Total \_\_\_\_\_ BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1569  Test 1125' T-On Location 1430  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 1700  
 (C) First Final Flow 20  Safety Joint \_\_\_\_\_ T-Open 1835  
 (D) Initial Shut-In 47  Circ Sub \_\_\_\_\_ T-Pulled 2015  
 (E) Second Initial Flow 20  Hourly Standby \_\_\_\_\_ T-Out 2130  
 (F) Second Final Flow \_\_\_\_\_  Mileage 20X2 50.00 Comments Bar - 1658  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1536  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1181'  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1181'

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.



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
DEC 13 2011

## Test Ticket

NO. 44224

BY: \_\_\_\_\_

Well Name & No. Schiant #2 Test No. 2 Date 12-11-11  
 Company TDI, Inc. Elevation 1834 KB 1825 GL  
 Address 1310 Bison Rd. Hays, KS 67601  
 Co. Rep / Geo. Herb Dienes Rig Southwind 1  
 Location: Sec. 30 Twp. 14S Rge. 15W Co. Russell State KS

Interval Tested 3270-3308 Zone Tested Pleasanton  
 Anchor Length 38' Drill Pipe Run 3266 Mud Wt. 9.4  
 Top Packer Depth 3265 Drill Collars Run 0 Vis 53  
 Bottom Packer Depth 3270 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3308 Chlorides 6,700 ppm System LCM 2#

Blow Description IF - Surging 1/4 inch blow,  
ISI - No Return,  
FF - No blow. Flushed Tool, Few bubbles. Pulled Tool

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>			<u>100</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 5 BHT 90 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1680  Test 1125' T-On Location ~~1630~~ 1930  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 2045  
 (C) First Final Flow 17  Safety Joint \_\_\_\_\_ T-Open 2204  
 (D) Initial Shut-In 41  Circ Sub \_\_\_\_\_ T-Pulled 2345  
 (E) Second Initial Flow 16  Hourly Standby \_\_\_\_\_ T-Out 0115  
 (F) Second Final Flow \_\_\_\_\_  Mileage 20x2 50' Comments BHT-2030  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1667  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow Pulled  Day Standby \_\_\_\_\_ Total 1181'  
 Final Shut-In \_\_\_\_\_  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1181'

Approved By \_\_\_\_\_ Our Representative D. Rash

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.