



## DRILL STEM TEST REPORT

Prepared For: **TDI**

1310 Bison Rd  
Hays, KS 67601

ATTN: Herb Deines

**Haas #1**

**24-15s-19w Ellis,KS**

Start Date: 2012.03.24 @ 12:22:32

End Date: 2012.03.24 @ 18:08:02

Job Ticket #: 36073                      DST #: 1

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

Printed: 2012.03.29 @ 15:04:09

TDI  
24-15s-19w Ellis,KS  
Haas #1  
DST # 1  
LKC "B-C"  
2012.03.24



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

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

**24-15s-19w Ellis,KS**  
**Haas #1**  
Job Ticket: 36073      **DST#: 1**  
Test Start: 2012.03.24 @ 12:22:32

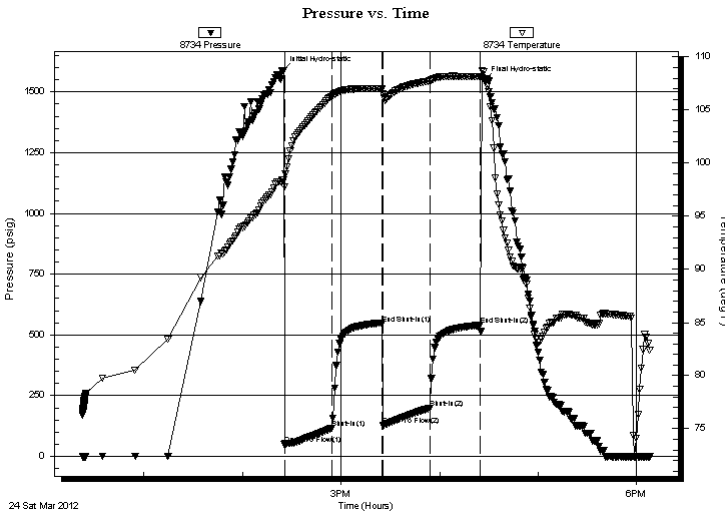
## GENERAL INFORMATION:

Formation: **LKC "B-C"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:25:32  
 Time Test Ended: 18:08:02  
**Interval: 3290.00 ft (KB) To 3314.00 ft (KB) (TVD)**  
 Total Depth: 3314.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brian Fairbank  
 Unit No: 41  
 Reference Elevations: 1996.00 ft (KB)  
 1988.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8734      Outside**  
 Press @ Run Depth: 196.87 psig @ 3291.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.03.24      End Date: 2012.03.24      Last Calib.: 2012.03.24  
 Start Time: 12:22:33      End Time: 18:08:02      Time On Btm: 2012.03.24 @ 14:24:32  
 Time Off Btm: 2012.03.24 @ 16:27:02

**TEST COMMENT:** IFP - BOB 1 min  
 ISI - BOB 3 min  
 FFP - BOB 2 min GTS 13 min  
 FSI - BOB 3 min

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1588.35	98.43	Initial Hydro-static
1	48.06	97.76	Open To Flow (1)
30	116.36	106.28	Shut-In(1)
61	545.60	106.97	End Shut-In(1)
61	129.13	106.55	Open To Flow (2)
90	196.87	107.73	Shut-In(2)
120	539.31	108.11	End Shut-In(2)
123	1548.32	108.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
50.00	GM & WCO 75%G, 15%O, 5%W, 5%M	0.70
370.00	FREE OIL 95%O, 5%M	5.19
90.00	GMO 10%G, 70%O, 20%M	1.26

## Gas Rates

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



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**DRILL STEM TEST REPORT**

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 1310 Bison Rd  
 Hays, KS 67601  
 ATTN: Herb Deines

**24-15s-19w Ellis, KS**  
**Haas #1**  
 Job Ticket: 36073      **DST#: 1**  
 Test Start: 2012.03.24 @ 12:22:32

**GENERAL INFORMATION:**

Formation: **LKC "B-C"**  
 Deviated: No    Whipstock:                      ft (KB)  
 Time Tool Opened: 14:25:32  
 Time Test Ended: 18:08:02

Interval: **3290.00 ft (KB) To 3314.00 ft (KB) (TVD)**  
 Total Depth: 3314.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches    Hole Condition: Good

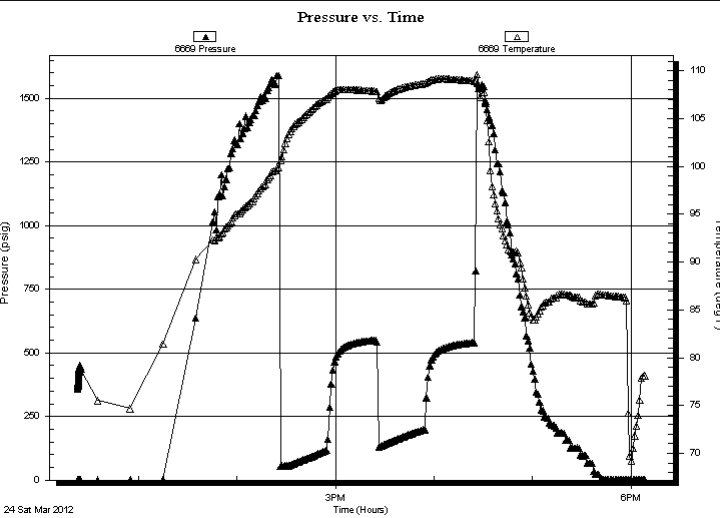
Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brian Fairbank  
 Unit No: 41

Reference Elevations: 1996.00 ft (KB)  
 1988.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 6669      Inside**

Press @ Run Depth:                      psig @    3291.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2012.03.24      End Date: 2012.03.24      Last Calib.: 1899.12.30  
 Start Time: 12:22:47      End Time: 18:08:16      Time On Btm:  
    Time Off Btm:

**TEST COMMENT:** IFP - BOB 1 min  
 ISI - BOB 3 min  
 FFP - BOB 2 min GTS 13 min  
 FSI - BOB 3 min



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

**Recovery**

Length (ft)	Description	Volume (bbl)
50.00	GM & WCO 75%G, 15%O, 5%W, 5%M	0.70
370.00	FREE OIL 95%O, 5%M	5.19
90.00	GMO 10%G, 70%O, 20%M	1.26

**Gas Rates**

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



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TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

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

**24-15s-19w Ellis,KS**  
**Haas #1**  
Job Ticket: 36073      **DST#: 1**  
Test Start: 2012.03.24 @ 12:22:32

**Tool Information**

Drill Pipe:	Length: 3300.00 ft	Diameter: 3.80 inches	Volume: 46.29 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	44000.00 lb
			<u>Total Volume: 46.29 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	38000.00 lb
Depth to Top Packer:	3290.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	44.00 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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Shut In Tool	5.00			3275.00	
Hydraulic tool	5.00			3280.00	
Packer	5.00			3285.00	20.00      Bottom Of Top Packer
Packer	5.00			3290.00	
Stubb	1.00			3291.00	
Recorder	0.00	6669	Inside	3291.00	
Recorder	0.00	8734	Outside	3291.00	
Perforations	20.00			3311.00	
Bullnose	3.00			3314.00	24.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>44.00</b>				



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI **24-15s-19w Ellis,KS**  
 1310 Bison Rd **Haas #1**  
 Hays, KS 67601 Job Ticket: 36073 **DST#: 1**  
 ATTN: Herb Deines Test Start: 2012.03.24 @ 12:22:32

## Mud and Cushion Information

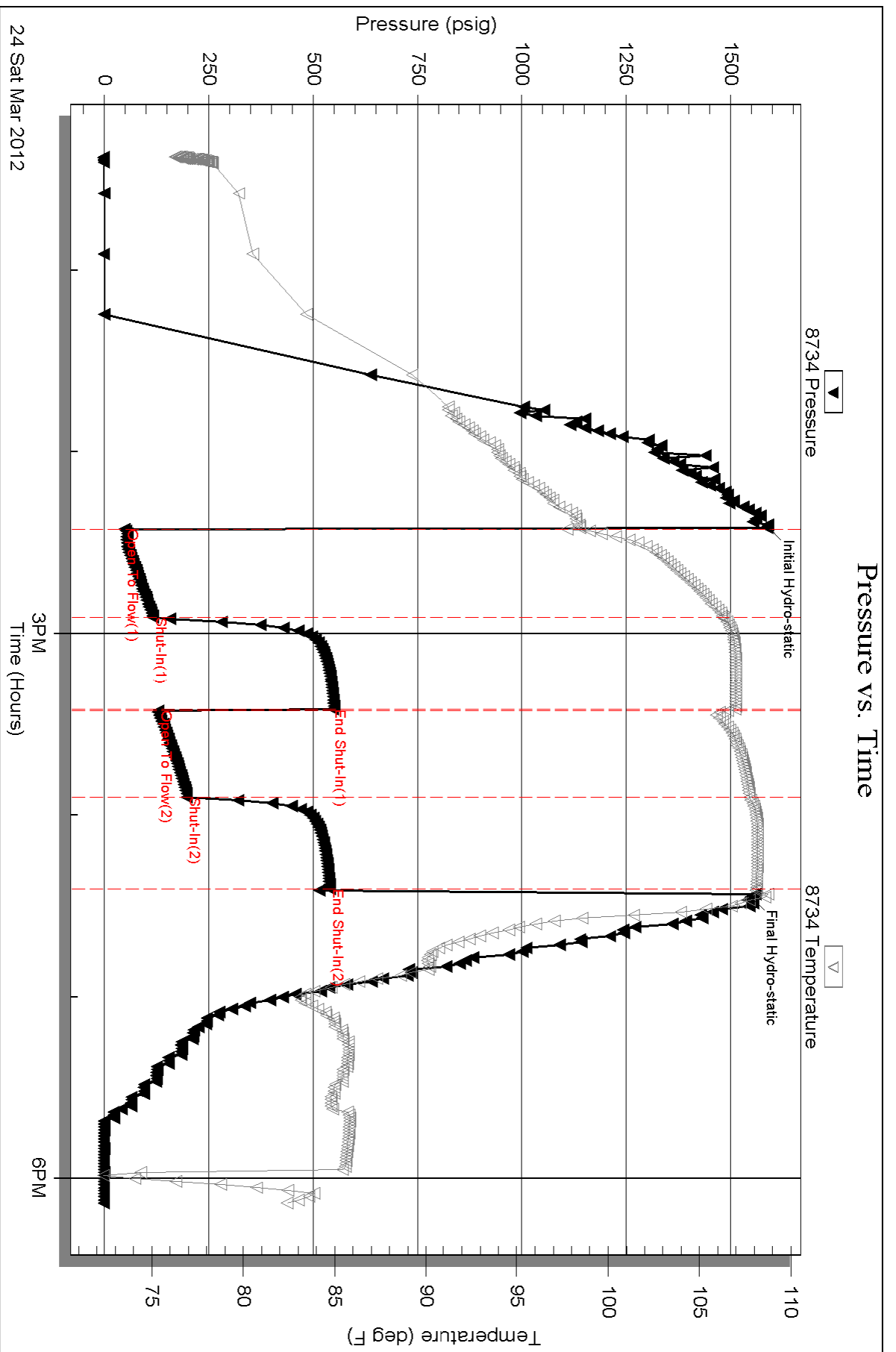
Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 40000 ppm
Viscosity: 46.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3300.00 ppm		
Filter Cake: inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	GM & WCO 75%G, 15%O, 5%W, 5%M	0.701
370.00	FREE OIL 95%O, 5%M	5.190
90.00	GMO 10%G, 70%O, 20%M	1.262

Total Length: 510.00 ft Total Volume: 7.153 bbl  
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:  
 Laboratory Name: Laboratory Location:  
 Recovery Comments: GTS 43 MIN



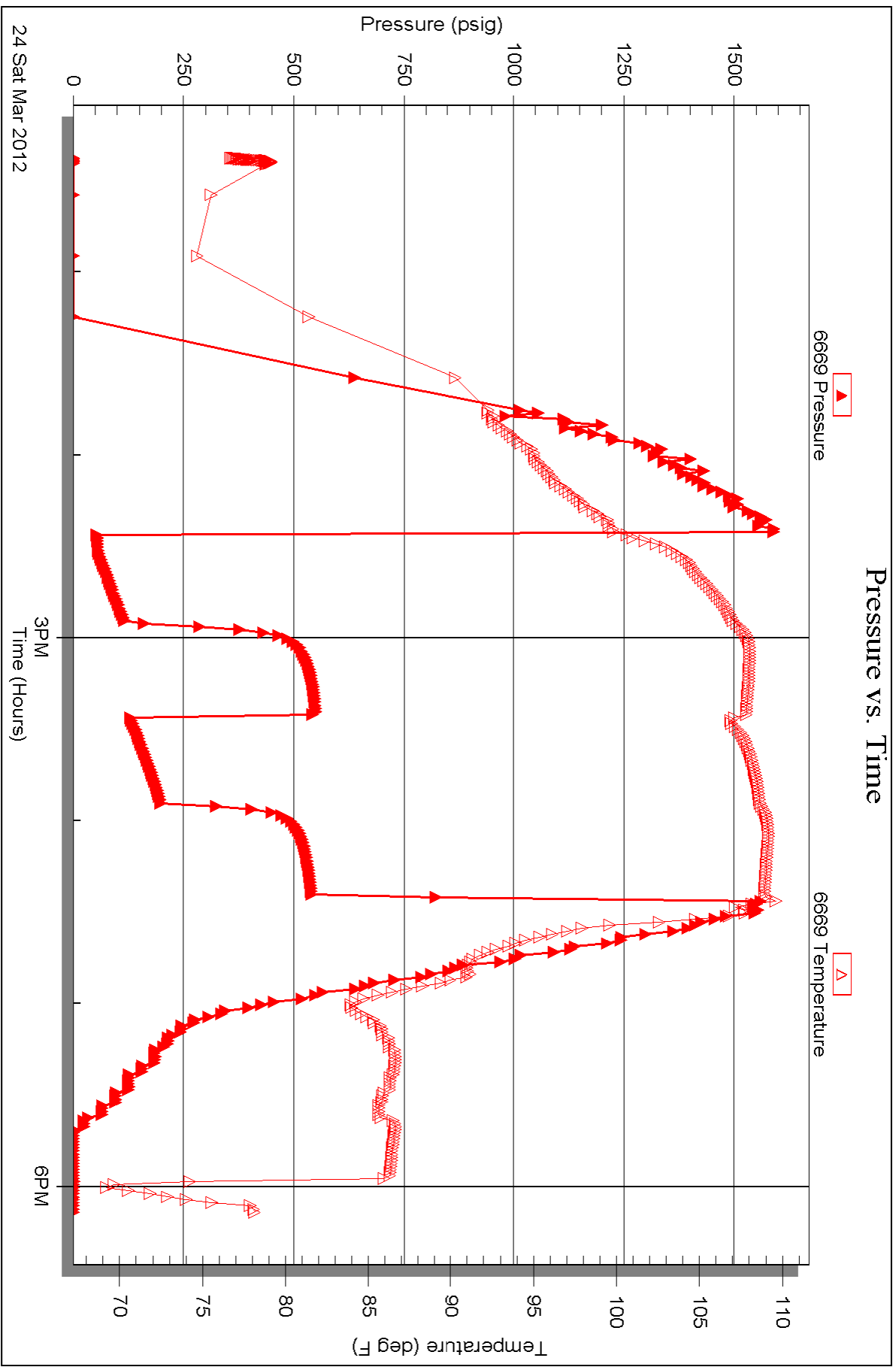
Serial #: 6669

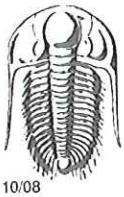
Inside

TDI

Haas #1

DST Test Number: 1





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED  
MAR 26 2012  
BY: \_\_\_\_\_

## Test Ticket

NO. 36073

Well Name & No. Hgas #1 Test No. 1 Date 3-24-12  
 Company TDI Elevation 1996 KB 1988 GL \_\_\_\_\_  
 Address 1310 Bison Rd Hays, Ki 67601  
 Co. Rep / Geo. Herb Deines Rig Southward 1  
 Location: Sec. 24 Twp. 15 Rge. 19 Co. Ellis State Ks

Interval Tested 3290-3314 Zone Tested LKC "B-C"  
 Anchor Length 24 Drill Pipe Run 3300 Mud Wt. 8.9  
 Top Packer Depth 3285 Drill Collars Run — Vis 46  
 Bottom Packer Depth 3290 Wt. Pipe Run — WL 6.0  
 Total Depth 3314 Chlorides 3300 ppm System LCM \_\_\_\_\_

Blow Description IFP-BOB 1 min  
ISI-BOB 3 min  
FFP-BOB 2 min GTS 13 min  
FSI-BOB 3 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>GMO</u>	<u>10%</u>	<u>70%</u>	<u>20%</u>	<u>0%</u>
<u>370</u>	<u>Free oil</u>	<u>0%</u>	<u>95%</u>	<u>5%</u>	<u>0%</u>
<u>50</u>	<u>G M+W CO</u>	<u>75%</u>	<u>15%</u>	<u>5%</u>	<u>5%</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total \_\_\_\_\_ BHT 109 Gravity 38 API RW .156 @ 86 ° F Chlorides 40000 ppm

(A) Initial Hydrostatic 1588  Test 1125' T-On Location 1103  
 (B) First Initial Flow 48  Jars \_\_\_\_\_ T-Started 1222  
 (C) First Final Flow 116  Safety Joint \_\_\_\_\_ T-Open 1425  
 (D) Initial Shut-In 546  Circ Sub \_\_\_\_\_ T-Pulled 1625  
 (E) Second Initial Flow 129  Hourly Standby \_\_\_\_\_ T-Out 1808  
 (F) Second Final Flow 197  Mileage 30RT 4200 Comments \_\_\_\_\_  
 (G) Final Shut-In 539  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1548  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 30  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 30  Day Standby \_\_\_\_\_ Sub Total 0  
 Sub Total 1167' Total 1167'

Approved By \_\_\_\_\_ Our Representative Brian Fairbank

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