

DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

Linus #1

14-15s-19w Ellis,KS

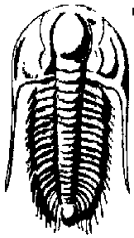
Start Date: 2012.08.07 @ 05:09:43

End Date: 2012.08.07 @ 11:17:13

Job Ticket #: 47843 DST #: 1

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

Printed: 2012.08.13 @ 10:49:55



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

14-15s-19w Ellis,KS

Linus #1

Job Ticket: 47843

DST#: 1

Test Start: 2012.08.07 @ 05:09:43

GENERAL INFORMATION:

Formation: **I-J**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 07:58:13

Time Test Ended: 11:17:13

Test Type: Conventional Bottom Hole (Initial)

Tester: Jason McLemore

Unit No: 54

Interval: 3446.00 ft (KB) To 3500.00 ft (KB) (TVD)

Total Depth: 3500.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 1991.00 ft (KB)

1981.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8366 Inside

Press@RunDepth: 30.29 psig @ 3482.00 ft (KB)

Start Date: 2012.08.07

End Date:

2012.08.07

Start Time: 05:09:45

End Time:

11:17:13

Capacity: 8000.00 psig

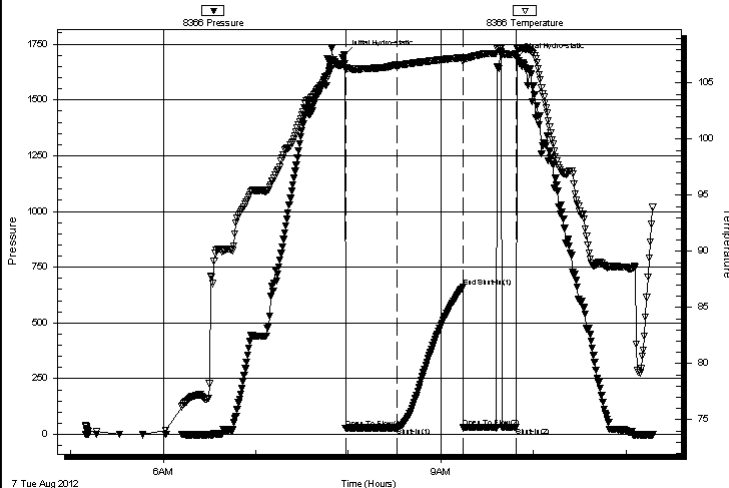
Last Calib.: 2012.08.07

Time On Btm: 2012.08.07 @ 07:57:43

Time Off Btm: 2012.08.07 @ 09:49:28

TEST COMMENT: IFP-Surge on open, Then dead
ISI-Dead
FFP-Dead, Flush tool, Surge, Then dead
FSI-Dead

Pressure vs. Time



PRESSURE SUMMARY

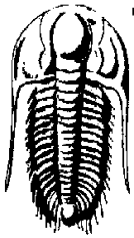
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1702.19	106.75	Initial Hydro-static
1	28.15	106.24	Open To Flow (1)
34	30.29	106.59	Shut-In(1)
77	660.47	107.27	End Shut-In(1)
77	30.34	106.90	Open To Flow (2)
111	32.09	107.57	Shut-In(2)
112	1687.64	108.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling Mud	0.07

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

14-15s-19w Ellis,KS

Linus #1

Job Ticket: 47843

DST#: 1

Test Start: 2012.08.07 @ 05:09:43

GENERAL INFORMATION:

Formation: **I-J**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 07:58:13

Time Test Ended: 11:17:13

Test Type: Conventional Bottom Hole (Initial)

Tester: Jason McLemore

Unit No: 54

Interval: 3446.00 ft (KB) To 3500.00 ft (KB) (TVD)

Reference Elevations: 1991.00 ft (KB)

Total Depth: 3500.00 ft (KB) (TVD)

1981.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3482.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.08.07

End Date:

2012.08.07

Last Calib.:

2012.08.07

Start Time: 05:09:30

End Time:

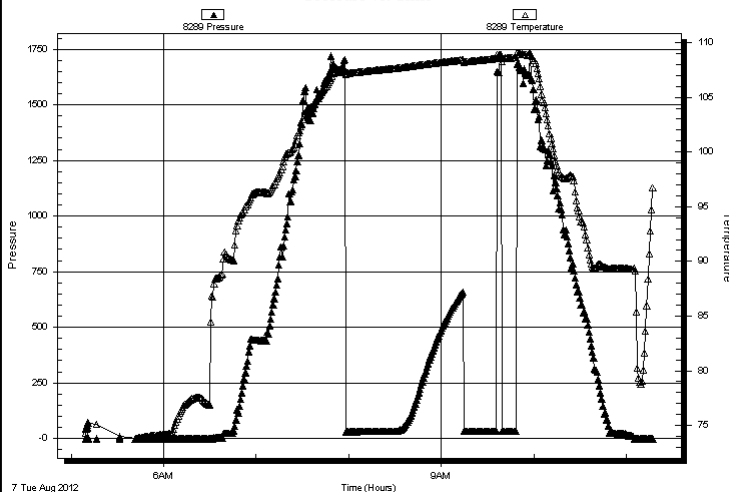
11:17:13

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP-Surge on open, Then dead
ISI-Dead
FFP-Dead, Flush tool, Surge, Then dead
FSI-Dead

Pressure vs. Time



PRESSURE SUMMARY

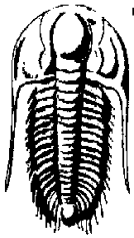
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drilling Mud	0.07

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc.

14-15s-19w Ellis,KS

1310 Bison Road
Hays, KS 67601

Linus #1

Job Ticket: 47843

DST#: 1

ATTN: Herb Deines

Test Start: 2012.08.07 @ 05:09:43

Tool Information

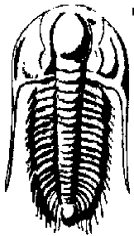
Drill Pipe:	Length:	3454.00 ft	Diameter:	3.80 inches	Volume:	48.45 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	Weight to Pull Loose:	34000.00 lb
					Total Volume:	48.45 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		29.00 ft					String Weight: Initial	30000.00 lb
Depth to Top Packer:		3446.00 ft					Final	30000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		54.00 ft						
Tool Length:		75.00 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			3426.00	
Shut In Tool	5.00			3431.00	
Hydraulic tool	5.00			3436.00	
Packer	5.00			3441.00	21.00 Bottom Of Top Packer
Packer	5.00			3446.00	
Stubb	1.00			3447.00	
Perforations	2.00			3449.00	
Change Over Sub	1.00			3450.00	
Blank Spacing	31.00			3481.00	
Change Over Sub	1.00			3482.00	
Recorder	0.00	8366	Inside	3482.00	
Recorder	0.00	8289	Outside	3482.00	
Perforations	15.00			3497.00	
Bullnose	3.00			3500.00	54.00 Bottom Packers & Anchor

Total Tool Length: 75.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc.

14-15s-19w Ellis,KS

1310 Bison Road
Hays, KS 67601

Linus #1

Job Ticket: 47843

DST#: 1

ATTN: Herb Deines

Test Start: 2012.08.07 @ 05:09:43

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: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Drilling 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:

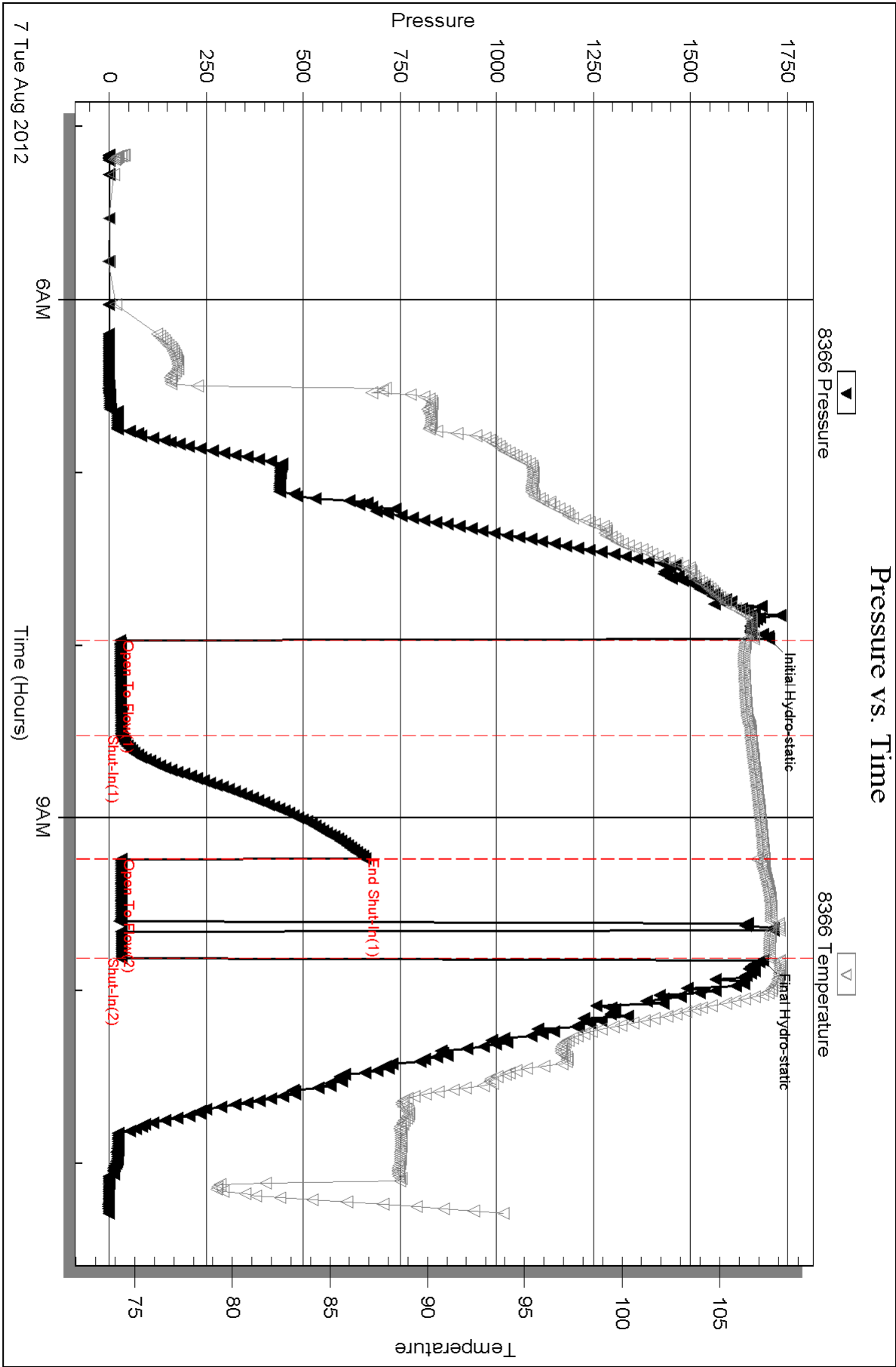
Serial #: 8366

Inside

TDI Inc.

Linus #1

DST Test Number: 1

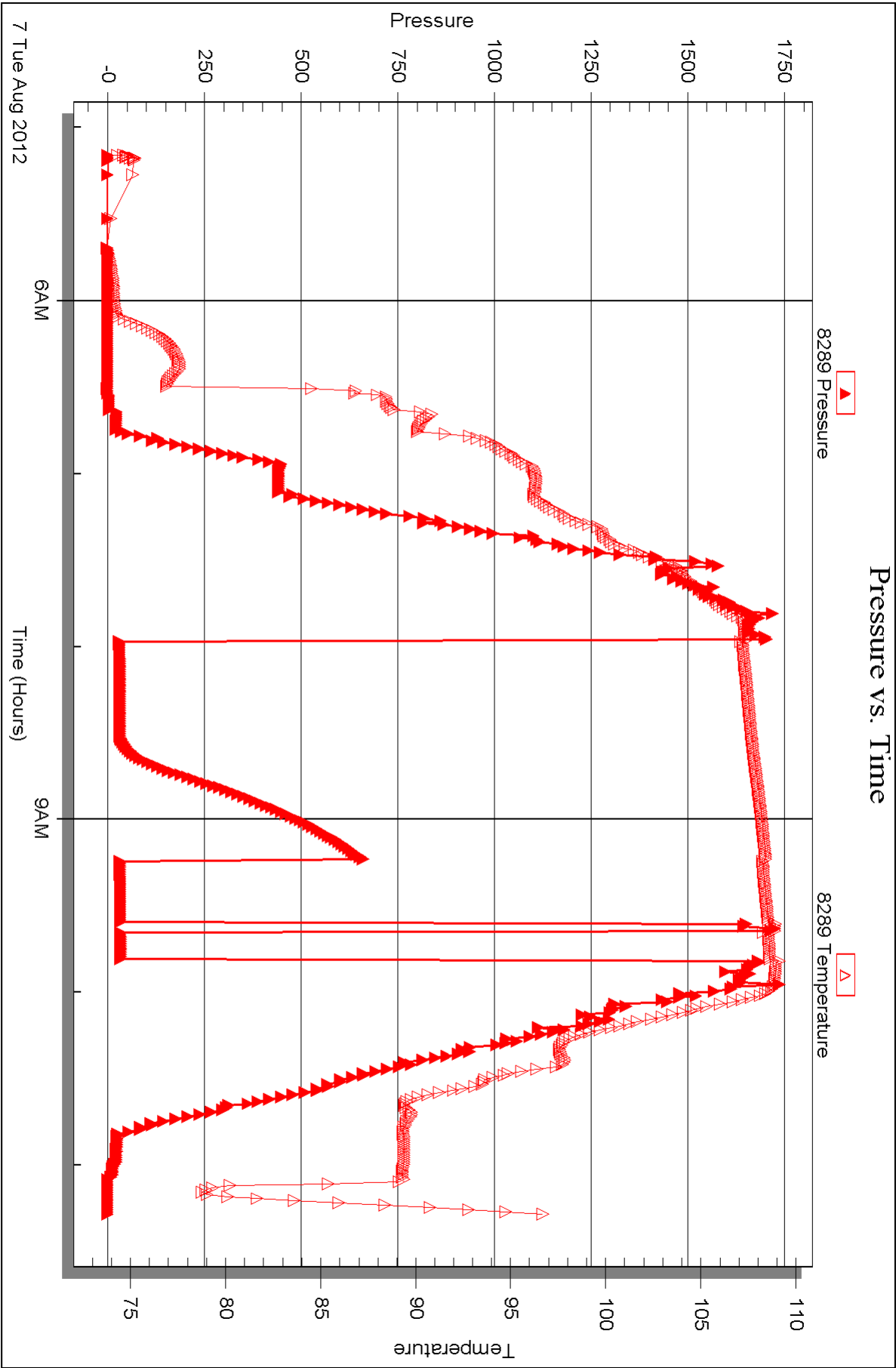


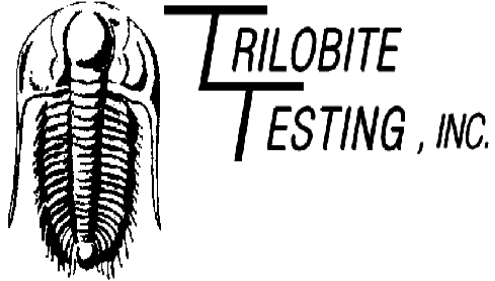
Serial #: 8289

Outside TDI Inc.

Linus #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

Linus #1

14-15s-19w Ellis,KS

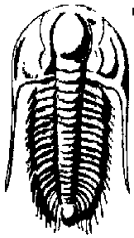
Start Date: 2012.08.07 @ 23:38:00

End Date: 2012.08.08 @ 05:20:00

Job Ticket #: 49455 DST #: 2

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

Printed: 2012.08.13 @ 10:44:27



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

14-15s-19w Ellis,KS

Linus #1

Job Ticket: 49455

DST#: 2

Test Start: 2012.08.07 @ 23:38:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 01:51:15

Time Test Ended: 05:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 54

Interval: 3540.00 ft (KB) To 3620.00 ft (KB) (TVD)

Reference Elevations: 1991.00 ft (KB)

Total Depth: 3620.00 ft (KB) (TVD)

1981.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8366 Inside

Press@RunDepth: 48.53 psig @ 3607.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.08.07

End Date:

2012.08.08

Last Calib.: 2012.08.08

Start Time: 23:38:02

End Time:

05:20:00

Time On Btm: 2012.08.08 @ 01:51:00

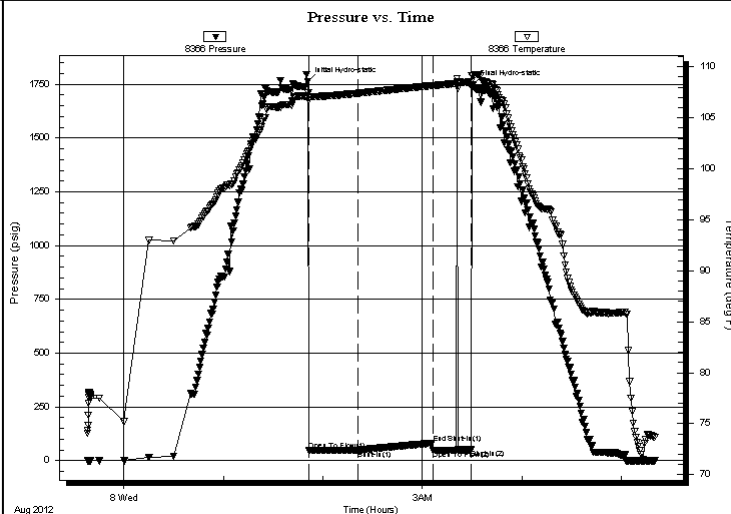
Time Off Btm: 2012.08.08 @ 03:30:15

TEST COMMENT: 30 - IF- 1/4" blow , died in 5 min.

45 - IS- No blow back

FF- No blow , waited 15 min. Flushed tool, Surged & died. Waited 10 min and pulled.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1763.20	107.49	Initial Hydro-static
1	46.88	106.71	Open To Flow (1)
30	48.53	107.40	Shut-In(1)
75	80.98	108.15	End Shut-In(1)
76	48.97	108.14	Open To Flow (2)
99	50.89	108.51	Shut-In(2)
100	1746.98	109.17	Final Hydro-static

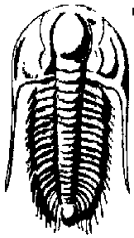
Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.14

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TDI Inc.

1310 Bison Road
Hays, KS 67601

ATTN: Herb Deines

14-15s-19w Ellis,KS

Linus #1

Job Ticket: 49455

DST#: 2

Test Start: 2012.08.07 @ 23:38:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 01:51:15

Time Test Ended: 05:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 54

Interval: 3540.00 ft (KB) To 3620.00 ft (KB) (TVD)

Reference Elevations: 1991.00 ft (KB)

Total Depth: 3620.00 ft (KB) (TVD)

1981.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8289 Outside

Press@RunDepth: psig @ 3607.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.08.07

End Date:

2012.08.08

Last Calib.:

2012.08.08

Start Time: 23:38:02

End Time:

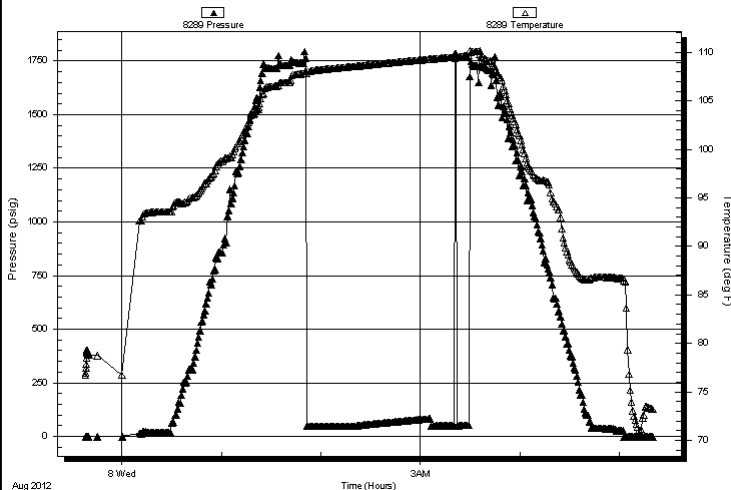
05:20:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" blow , died in 5 min.
45 - IS- No blow back
FF- No blow , waited 15 min. Flushed tool, Surged & died. Waited 10 min and pulled.

Pressure vs. Time



PRESSURE SUMMARY

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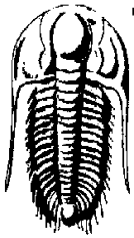
Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.14

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc.

14-15s-19w Ellis,KS

1310 Bison Road
Hays, KS 67601

Linus #1

Job Ticket: 49455

DST#: 2

ATTN: Herb Deines

Test Start: 2012.08.07 @ 23:38:00

Tool Information

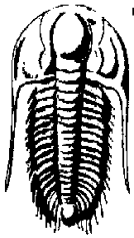
Drill Pipe:	Length:	3548.00 ft	Diameter:	3.80 inches	Volume:	49.77 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	Weight to Pull Loose:	38000.00 lb
					Total Volume:	49.77 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		29.00 ft					String Weight: Initial	32000.00 lb
Depth to Top Packer:		3540.00 ft					Final	32000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		80.00 ft						
Tool Length:		101.00 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			3520.00		
Shut In Tool	5.00			3525.00		
Hydraulic tool	5.00			3530.00		
Packer	5.00			3535.00	21.00	Bottom Of Top Packer
Packer	5.00			3540.00		
Stubb	1.00			3541.00		
Perforations	2.00			3543.00		
Change Over Sub	1.00			3544.00		
Blank Spacing	62.00			3606.00		
Change Over Sub	1.00			3607.00		
Recorder	0.00	8366	Inside	3607.00		
Recorder	0.00	8289	Outside	3607.00		
Perforations	10.00			3617.00		
Bullnose	3.00			3620.00	80.00	Bottom Packers & Anchor

Total Tool Length: 101.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc.

14-15s-19w Ellis,KS

1310 Bison Road
Hays, KS 67601

Linus #1

Job Ticket: 49455

DST#: 2

ATTN: Herb Deines

Test Start: 2012.08.07 @ 23:38:00

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: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud	0.140

Total Length: 10.00 ft

Total Volume: 0.140 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

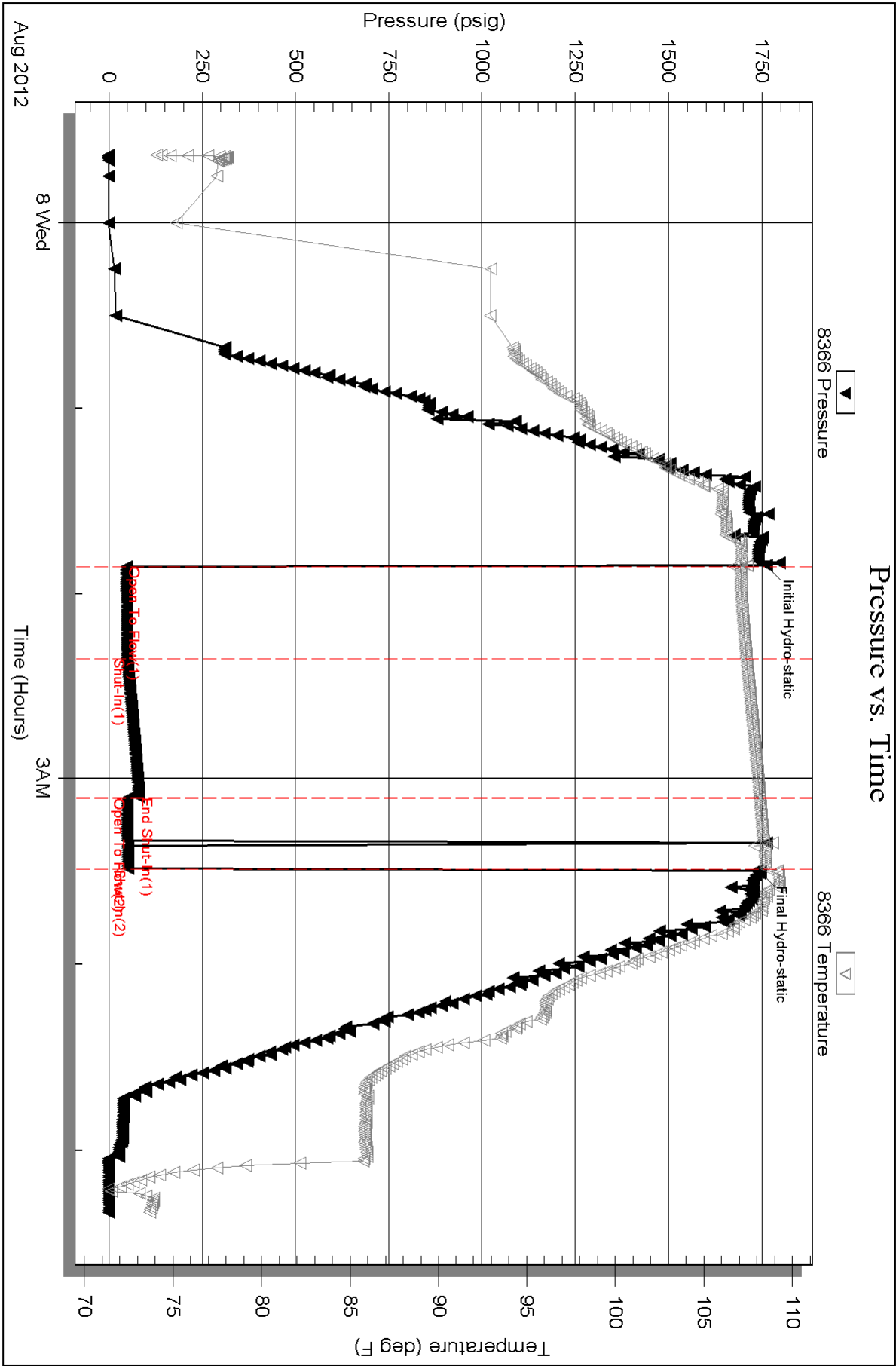
Serial #: 8366

Inside

TDI Inc.

Linus #1

DST Test Number: 2

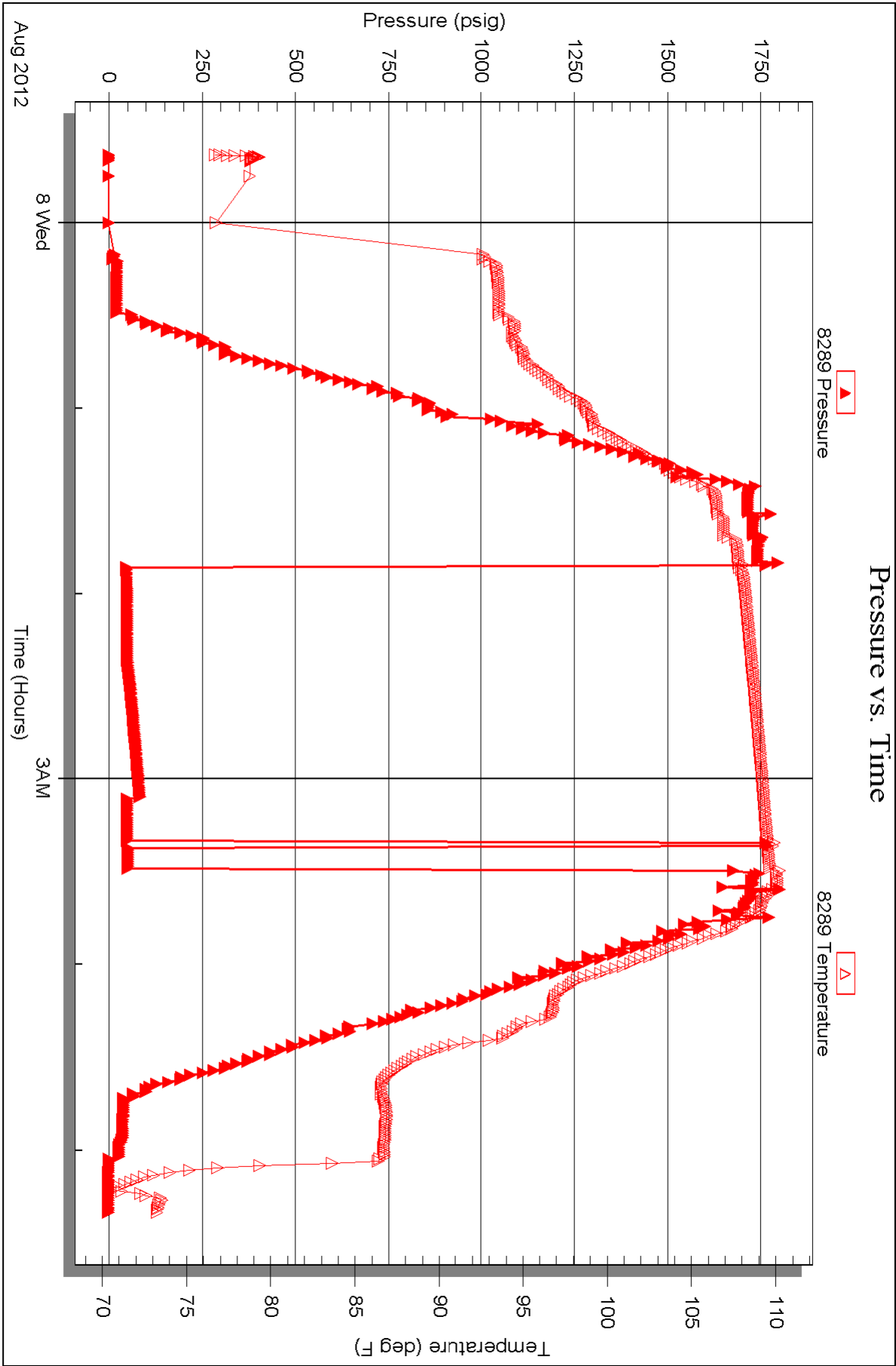


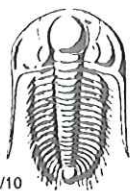
Serial #: 8289

Outside TDI Inc.

Linus #1

DST Test Number: 2





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 47843

Well Name & No. Linus #1 Test No. 1 Date 8-7-12
 Company TDI, Inc. Elevation 1995 KB 1981 GL
 Address 1310 Bison Road, Hays, KS. 67601
 Co. Rep / Geo. Herb Daines Rig Southwind #1
 Location: Sec. 14 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3446-3500 Zone Tested I-J
 Anchor Length 54' Drill Pipe Run 3454 Mud Wt. 8.9
 Top Packer Depth 3441 Drill Collars Run 0 Vis 49
 Bottom Packer Depth 3446 Wt. Pipe Run 0 WL 6.8
 Total Depth 3500 Chlorides 1300 ppm System LCM 1#

Blow Description IFP- Dead
ISI- Dead
FFP- Dead, Flush after 15 min. Surge, Then Dead
FSI- Dead

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Drilling Mud</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 108° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1702</u>	☒ Test <u>1150</u>	T-On Location <u>3:58</u>
(B) First Initial Flow <u>28</u>	☐ Jars _____	T-Started <u>5:07</u>
(C) First Final Flow <u>30</u>	☐ Safety Joint _____	T-Open <u>7:57</u>
(D) Initial Shut-In <u>660</u>	☐ Circ Sub _____	T-Pulled <u>9:37</u>
(E) Second Initial Flow <u>30</u>	☐ Hourly Standby _____	T-Out <u>11:15</u>
(F) Second Final Flow <u>32</u>	☒ Mileage <u>31 rt</u> 48.05	Comments _____
(G) Final Shut-In <u>1688</u>	☐ Sampler _____	
(H) Final Hydrostatic _____	☐ Straddle _____	☐ Ruined Shale Packer _____

Initial Open <u>30</u>	☐ Shale Packer _____	☐ Ruined Packer _____
Initial Shut-In <u>45</u>	☐ Extra Packer _____	☐ Extra Copies _____
Final Flow <u>15</u>	☐ Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>10</u>	☐ Day Standby _____	Total <u>1198.05</u>
	☐ Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1198.05</u>	

Approved By _____ Our Representative Jason McJannet *Thank You*
 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

Test Ticket

NO. 49455

Well Name & No. Linus #1 Test No. 2 Date 8-7-12
 Company TDI, Inc. Elevation 1991 KB 1981 GL
 Address 1310 Bison RD, Hays KS, 67601
 Co. Rep / Geo. Herb Deines Rig SW #1
 Location: Sec. 14 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3540-3620 Zone Tested _____
 Anchor Length 80' Drill Pipe Run 3548 Mud Wt. 8.9
 Top Packer Depth 3535 Drill Collars Run — Vis 49
 Bottom Packer Depth 3540 Wt. Pipe Run — WL 6.8
 Total Depth 3620 Chlorides 1300 ppm System LCM 1#

Blow Description ±F - 1/4" blow, died in 5 Min.
ISI - No blow
FF - No blow waited 15, flushed, surged & died. waited
FSI - 10 Min. & Pulled.

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud</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 10' BHT 108° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1763</u>	☒ Test <u>1150</u>	T-On Location <u>11:20pm</u>
(B) First Initial Flow <u>46</u>	☐ Jars	T-Started <u>11:38pm</u>
(C) First Final Flow <u>48</u>	☐ Safety Joint	T-Open <u>1:51am</u>
(D) Initial Shut-In <u>80</u>	☐ Circ Sub	T-Pulled <u>3:31am</u>
(E) Second Initial Flow <u>48</u>	☐ Hourly Standby	T-Out <u>5:20am</u>
(F) Second Final Flow	☒ Mileage <u>31 RT</u> <u>48.05</u>	Comments
(G) Final Shut-In <u>50</u>	☐ Sampler	
(H) Final Hydrostatic <u>1746</u>	☐ Straddle	

Initial Open <u>30</u>	☐ Shale Packer	☐ Ruined Shale Packer
Initial Shut-In <u>45</u>	☐ Extra Packer	☐ Ruined Packer
Final Flow <u>15 Flush, 10 Min.</u>	☐ Extra Recorder	☐ Extra Copies
Final Shut-In <u>Pull</u>	☐ Day Standby	Sub Total <u>0</u>
	☐ Accessibility	Total <u>1198.05</u>
	Sub Total <u>1198.05</u>	MP/DST Disc't

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.