



DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays, KS 67601

ATTN: Herb Deines

Raymond Trust #1

7-13s-20w Ellis,Ks

Start Date: 2013.10.10 @ 12:20:00

End Date: 2013.10.10 @ 20:06:00

Job Ticket #: 54448 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

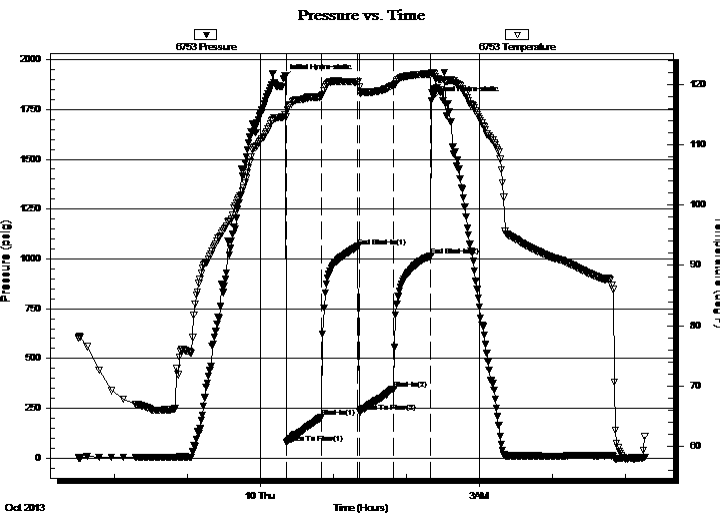
7-13s-20w Ellis, Ks
Raymond Trust #1
Job Ticket: 54448 **DST#: 1**
Test Start: 2013.10.10 @ 12:20:00

GENERAL INFORMATION:

Formation: **Marmaton, Cong. SD**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:11:00
 Time Test Ended: 20:06:00
 Interval: **3762.00 ft (KB) To 3853.00 ft (KB) (TVD)**
 Total Depth: 3890.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Brett Dickinson/Tim
 Unit No: 59
 Reference Elevations: 2148.00 ft (KB)
 2140.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6753 Outside
 Press @ RunDepth: 346.31 psig @ 3849.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.10.09 End Date: 2013.10.10 Last Calib.: 2013.10.10
 Start Time: 21:30:05 End Time: 05:15:59 Time On Btm: 2013.10.10 @ 00:19:00
 Time Off Btm: 2013.10.10 @ 02:20:30

TEST COMMENT: IFP-30-BOB in 4 min.
 ISI-30-Blow back built to 4 in. in 18 min died back
 FF-30-BOB in 3 min
 FSI-30-Built to 2 in. in 12 min died back to 1 in.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1903.78	114.59	Initial Hydro-static
2	76.37	114.68	Open To Flow (1)
31	206.61	118.02	Shut-In(1)
61	1062.11	120.39	End Shut-In(1)
62	232.81	119.54	Open To Flow (2)
91	346.31	119.77	Shut-In(2)
121	1015.73	121.60	End Shut-In(2)
122	1793.95	121.88	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
370.00	GO 20%G 80%O	5.19
560.00	GMCO 20%G 20%M 60%O	7.86
0.00	120ft GIP	0.00

Gas Rates

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



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TOOL DIAGRAM

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7-13s-20w Ellis, Ks
Raymond Trust #1
Job Ticket: 54448 **DST#: 1**
Test Start: 2013.10.10 @ 12:20:00

Tool Information

Drill Pipe:	Length: 3753.00 ft	Diameter: 3.80 inches	Volume: 52.64 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: 45000.00 lb
			<u>Total Volume: 52.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3762.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	3853.00 ft			
Interval between Packers:	91.00 ft			
Tool Length:	242.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3743.00	
Shut In Tool	5.00			3748.00	
Hydraulic tool	5.00			3753.00	
Packer	4.00			3757.00	20.00 Bottom Of Top Packer
Packer	5.00			3762.00	
Stubb	1.00			3763.00	
Perforations	2.00			3765.00	
change Over Sub	1.00			3766.00	
Drill Pipe	63.00			3829.00	
Change Over Sub	1.00			3830.00	
Perforations	19.00			3849.00	
Recorder	0.00	8736	Inside	3849.00	
Recorder	0.00	6753	Outside	3849.00	
Blank Off Sub	4.00			3853.00	91.00 Tool Interval
Packer	4.00			3857.00	
Stubb	1.00			3858.00	
Recorder	0.00	8319	Below	3858.00	
perforations	1.00			3859.00	
Change Over Sub	1.00			3860.00	
Drill Pipe	124.00			3984.00	131.00 Bottom Packers & Anchor

Total Tool Length: 242.00



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FLUID SUMMARY

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Raymond Trust #1
Job Ticket: 54448
Test Start: 2013.10.10 @ 12:20:00

DST#: 1

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 37 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.98 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1600.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

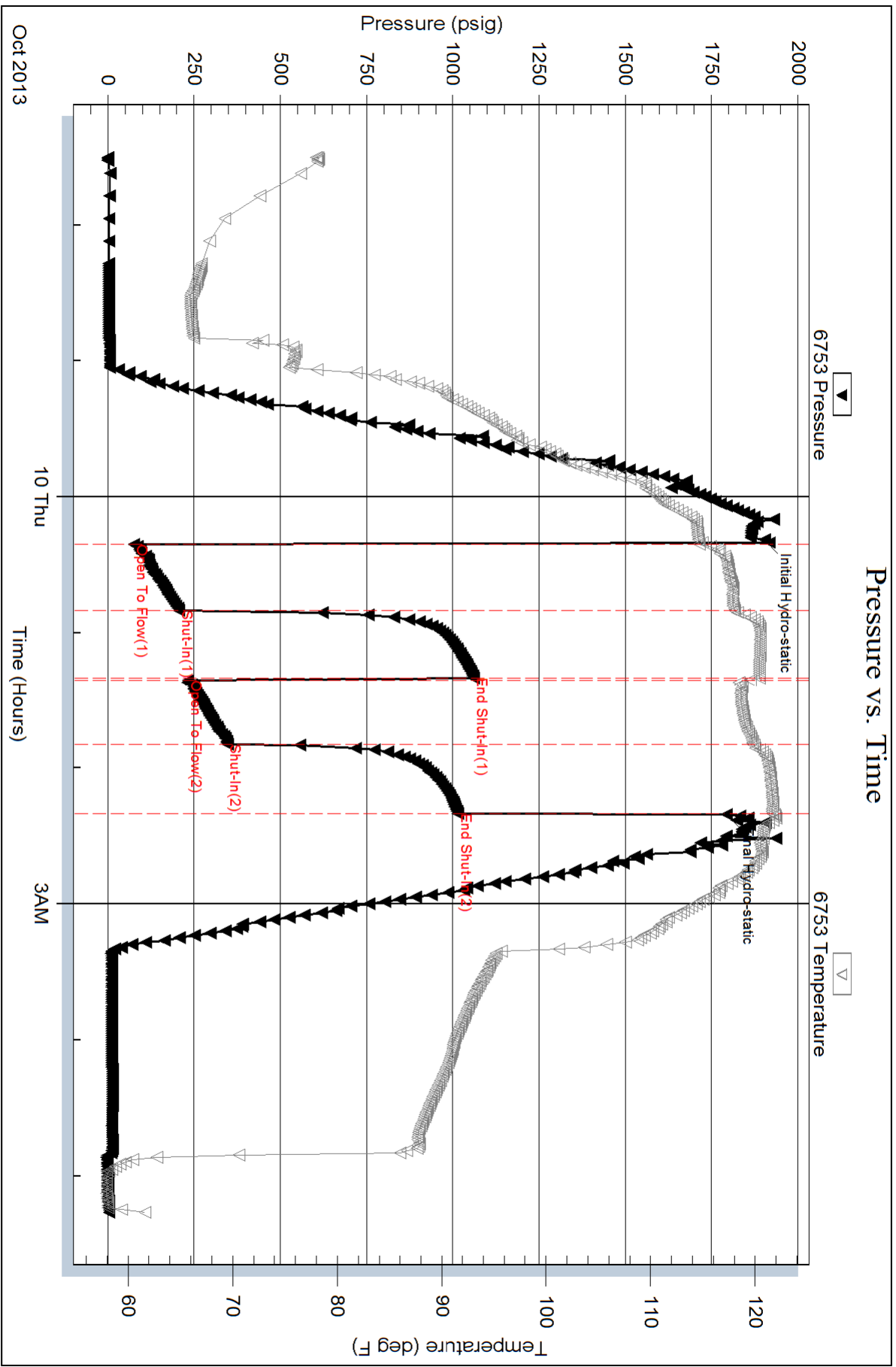
Length ft	Description	Volume bbl
370.00	GO 20%G 80%O	5.190
560.00	GMCO 20%G 20%M 60%O	7.855
0.00	120ft GIP	0.000

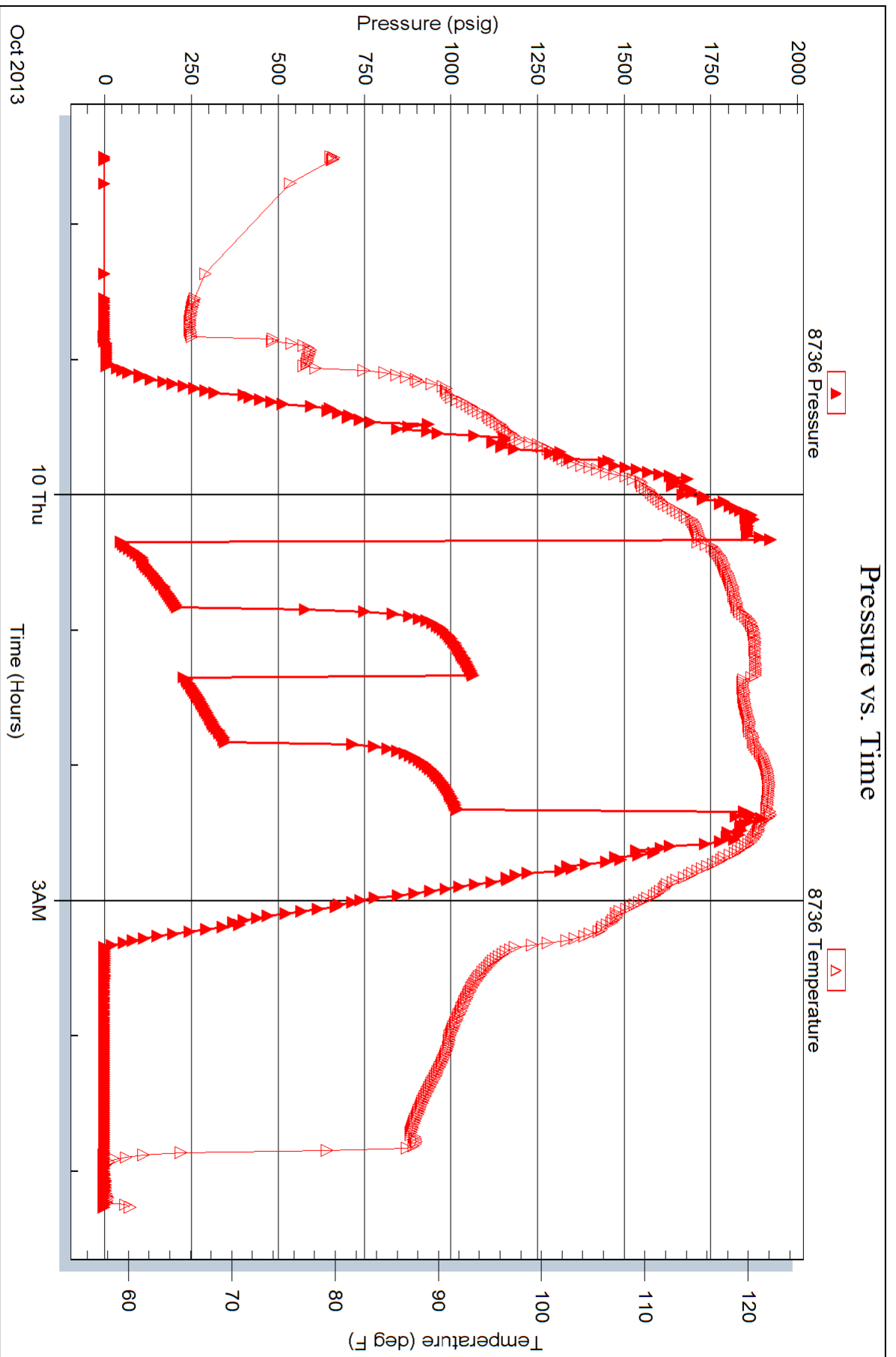
Total Length: 930.00 ft Total Volume: 13.045 bbl

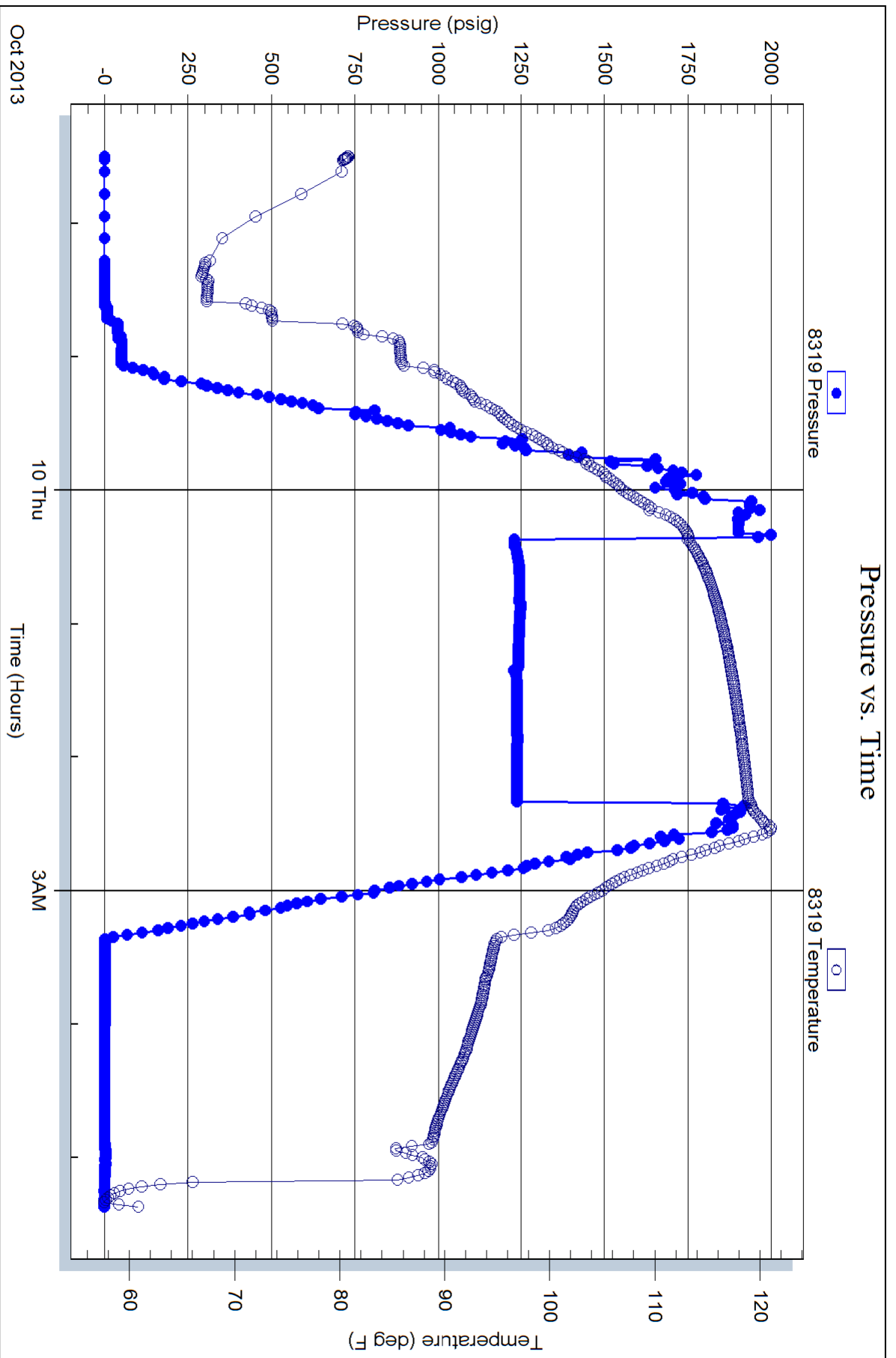
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

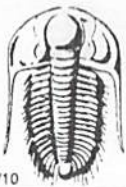
Laboratory Name: Laboratory Location:

Recovery Comments:









TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54448

Well Name & No. Raymond Trust #1 Test No. 1 Date 10/09/2013
 Company TDI Inc Elevation 2148 KB 2140 GL
 Address 1310 Bison Rd Hays KS 67601
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 7 Twp. 13 S Rge. 20 W Co. Ellis State KS

Interval Tested 3762 - 3853 Zone Tested Marmaton & Congl
 Anchor Length 91' Drill Pipe Run 3753 Mud Wt. 9.2
 Top Packer Depth 3757, 3762 Drill Collars Run 0 Vis 52
 Bottom Packer Depth 3853 Wt. Pipe Run 0 WL 6.0
 Total Depth 3890 Chlorides 1400 ppm System LCM 2#

Blow Description IIF-30-BOB IN 4min
ISI-30- Blowback built to 4in. IN 18min Died back
FF-30-BOB IN 3min
FSI-30-Built to 2in. IN 12min Died back

Rec	Feet of	%gas	%oil	%water	%mud
<u>370</u>	<u>GD 20%G</u>	<u>20</u>	<u>80</u>		
<u>560</u>	<u>GMCO</u>	<u>20</u>	<u>60</u>		<u>20</u>
<u>0</u>	<u>120 ft GIP</u>				

Rec Total 930 BHT 122 Gravity 37 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1904 Test 1150 T-On Location 82028
 (B) First Initial Flow 76 Jars _____ T-Started 2130
 (C) First Final Flow 206 Safety Joint _____ T-Open 0020
 (D) Initial Shut-In 1062 Circ Sub _____ T-Pulled 0220
 (E) Second Initial Flow 232 Hourly Standby _____ T-Out 0516
 (F) Second Final Flow 346 Mileage 40 R/T 62 Comments _____
 (G) Final Shut-In 1015 Sampler _____
 (H) Final Hydrostatic 1794 Straddle 600 Ruined Shale Packer _____

Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1812
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1812

Approved By _____ Our Representative [Signature] / Dan Phillips

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