



## DRILL STEM TEST REPORT

Prepared For: **American Warrior**

3118 Cummings Rd  
Garden City, KS 67846

ATTN: Jason Alm

### **Raymond #1-21 Unit**

### **21-18s-21w Ness,KS**

Start Date: 2013.11.02 @ 06:41:43

End Date: 2013.11.02 @ 13:01:43

Job Ticket #: 54963                      DST #: 1

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

Printed: 2013.11.06 @ 10:49:21

American Warrior  
21-18s-21w Ness,KS  
Raymond #1-21 Unit  
DST # 1  
Cherokee A Sand  
2013.11.02



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

American Warrior  
 3118 Cummings Rd  
 Garden City, KS 67846  
 ATTN: Jason Alm

**21-18s-21w Ness, KS**  
**Raymond #1-21 Unit**  
 Job Ticket: 54963 **DST#: 1**  
 Test Start: 2013.11.02 @ 06:41:43

## GENERAL INFORMATION:

Formation: **Cherokee A Sand**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 09:06:13 Tester: Brandon Turley  
 Time Test Ended: 13:01:43 Unit No: 60  
 Interval: **4146.00 ft (KB) To 4180.00 ft (KB) (TVD)** Reference Elevations: 2147.00 ft (KB)  
 Total Depth: 4180.00 ft (KB) (TVD) 2141.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 6.00 ft

## Serial #: 8373

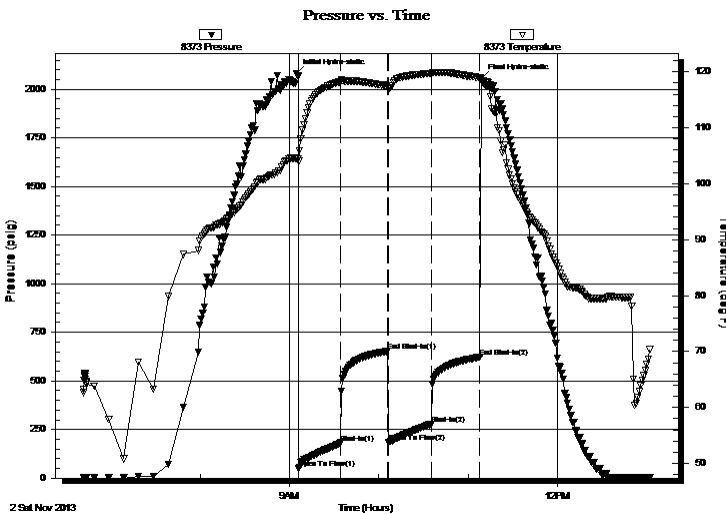
Inside

Press @ Run Depth: 277.52 psig @ 4147.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.11.02 End Date: 2013.11.02 Last Calib.: 2013.11.02  
 Start Time: 06:41:48 End Time: 13:01:42 Time On Btm: 2013.11.02 @ 09:04:43  
 Time Off Btm: 2013.11.02 @ 11:08:43

TEST COMMENT: IF: BOB in 8 min.  
 IS: No return.  
 FF: BOB in 11 min.  
 FS: No return.

## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2081.86	104.51	Initial Hydro-static
2	51.44	104.02	Open To Flow (1)
30	180.81	118.29	Shut-In(1)
61	652.63	117.49	End Shut-In(1)
62	182.52	117.11	Open To Flow (2)
91	277.52	119.72	Shut-In(2)
123	622.29	118.98	End Shut-In(2)
124	2055.04	118.35	Final Hydro-static

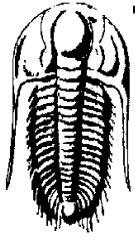


## Recovery

Length (ft)	Description	Volume (bbl)
372.00	mcw 95%w 5%m	4.14
155.00	w cm 20%w 80%m	2.17

## Gas Rates

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



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

American Warrior  
 3118 Cummings Rd  
 Garden City, KS 67846  
 ATTN: Jason Alm

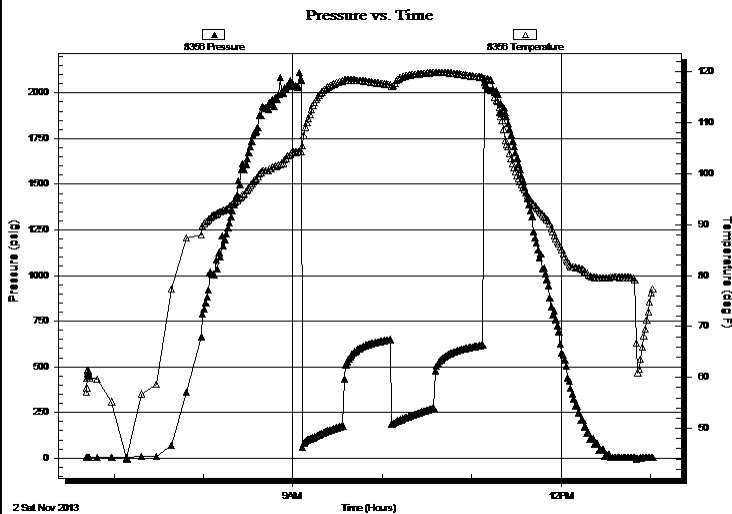
**21-18s-21w Ness, KS**  
**Raymond #1-21 Unit**  
 Job Ticket: 54963 **DST#: 1**  
 Test Start: 2013.11.02 @ 06:41:43

**GENERAL INFORMATION:**

Formation: **Cherokee A Sand**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 09:06:13 Tester: Brandon Turley  
 Time Test Ended: 13:01:43 Unit No: 60  
 Interval: **4146.00 ft (KB) To 4180.00 ft (KB) (TVD)** Reference Elevations: 2147.00 ft (KB)  
 Total Depth: 4180.00 ft (KB) (TVD) 2141.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 6.00 ft

**Serial #: 8356 Outside**  
 Press @ Run Depth: psig @ 4147.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.11.02 End Date: 2013.11.02 Last Calib.: 2013.11.02  
 Start Time: 06:41:36 End Time: 13:01:30 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF: BOB in 8 min.  
 IS: No return.  
 FF: BOB in 11 min.  
 FS: No return.



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
372.00	mcw 95%w 5%m	4.14
155.00	w cm 20%w 80%m	2.17

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

American Warrior  
3118 Cummings Rd  
Garden City, KS 67846  
ATTN: Jason Alm

**21-18s-21w Ness, KS**  
**Raymond #1-21 Unit**  
Job Ticket: 54963 **DST#: 1**  
Test Start: 2013.11.02 @ 06:41:43

**Tool Information**

Drill Pipe:	Length: 4030.00 ft	Diameter: 3.80 inches	Volume: 56.53 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 118.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 57.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4146.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	62.00 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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Stubb	1.00			4119.00	
Shut In Tool	5.00			4124.00	
Hydraulic tool	5.00			4129.00	
Jars	5.00			4134.00	
Safety Joint	3.00			4137.00	
Packer	5.00			4142.00	28.00 Bottom Of Top Packer
Packer	4.00			4146.00	
Stubb	1.00			4147.00	
Recorder	0.00	8373	Inside	4147.00	
Recorder	0.00	8356	Outside	4147.00	
Perforations	28.00			4175.00	
Bullnose	5.00			4180.00	34.00 Bottom Packers & Anchor

**Total Tool Length: 62.00**



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TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

American Warrior

**21-18s-21w Ness, KS**

3118 Cummings Rd  
Garden City, KS 67846

**Raymond #1-21 Unit**

Job Ticket: 54963

**DST#: 1**

ATTN: Jason Alm

Test Start: 2013.11.02 @ 06:41:43

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

36000 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
372.00	mcw 95%w 5%m	4.143
155.00	w cm 20%w 80%m	2.174

Total Length: 527.00 ft      Total Volume: 6.317 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .21@68=36000

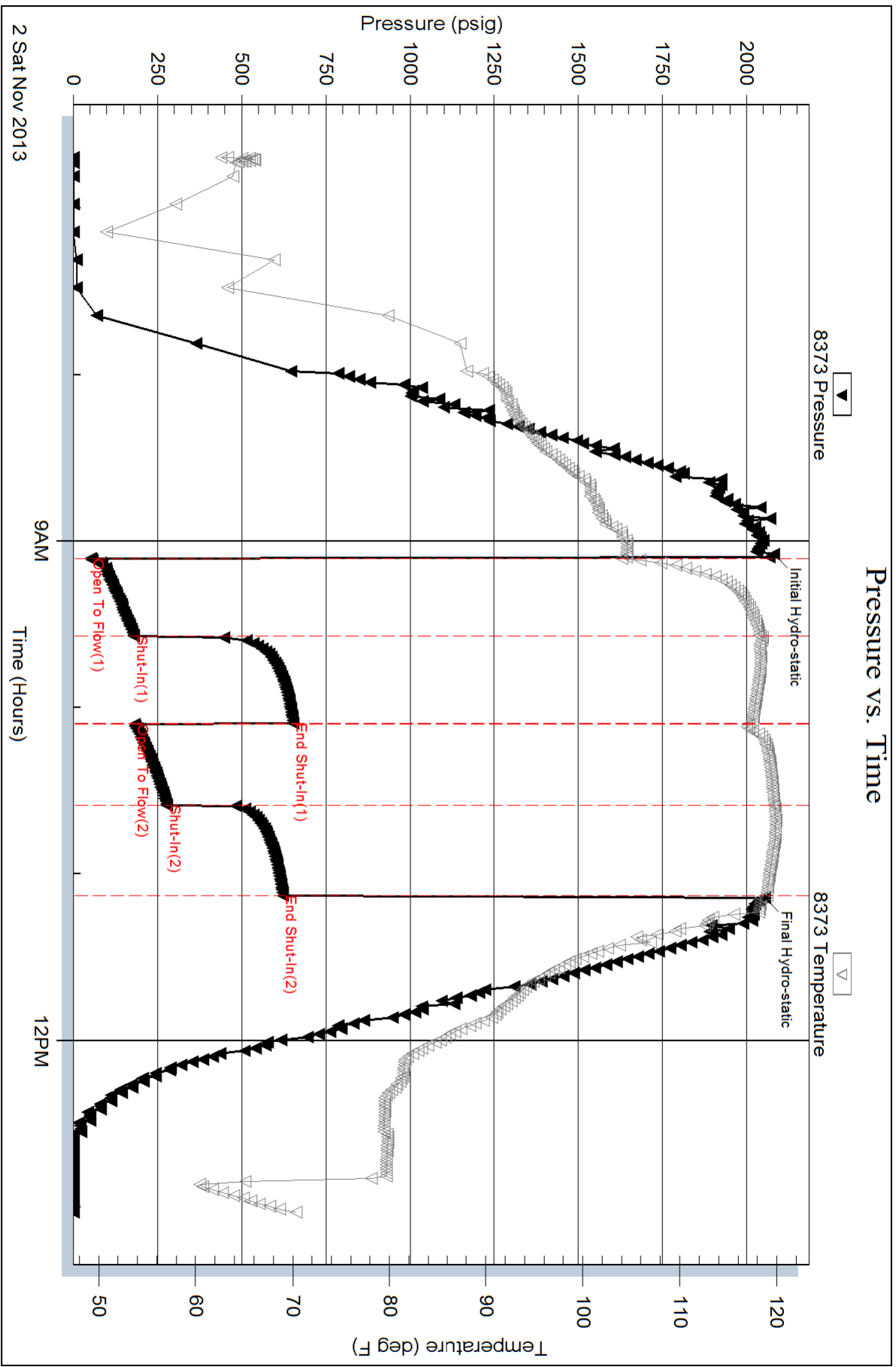
Serial #: 8373

Inside

American Warrior

Raymond #1-21 Unit

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 54963

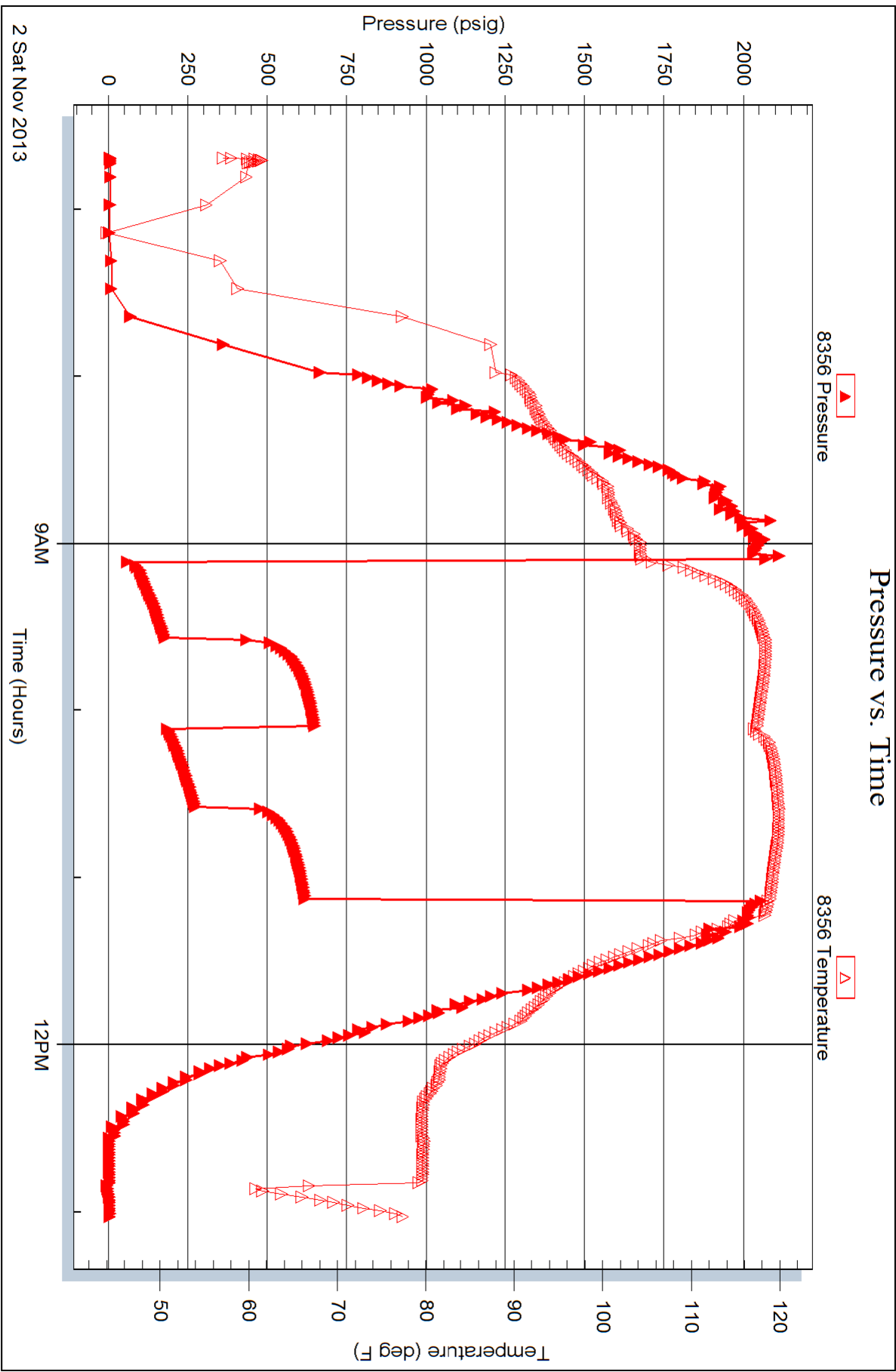
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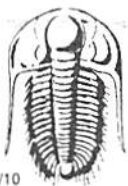
Serial #: 8356

Outside American Warrior

Raymond #1-21 Unit

DST Test Number: 1





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 54963

Well Name & No. Raymond #1-21 unit Test No. 1 Date 11-2-13  
 Company American Warrior Elevation 2147 KB 2141 GL  
 Address 3118 Cummings Rd Garden City, KS 67846  
 Co. Rep / Geo. Jason Alm Rig Petromark  
 Location: Sec. 21 Twp. 18S Rge. 25W Co. Ne55 State KS

Interval Tested 4146 4180 Zone Tested Cher A Sand  
 Anchor Length 34 Drill Pipe Run 4030 Mud Wt. 9.3  
 Top Packer Depth 4141 Drill Collars Run 118 Vis 46  
 Bottom Packer Depth 4146 Wt. Pipe Run — WL 8.8  
 Total Depth 4180 Chlorides 6300 ppm System LCM 0

Blow Description IF: BoB in 8 min.  
FS: No return.  
FF: BoB in 11 min.  
FS: NO return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>155</u>	<u>wcm</u>		<u>20</u>	<u>80</u>	
<u>372</u>	<u>MLW</u>		<u>95</u>	<u>5</u>	
Rec Total	<u>527</u>	BHT	<u>119</u>	Gravity	<u>—</u> API RW <u>.21</u> @ <u>68</u> ° F Chlorides <u>36,000</u> ppm

(A) Initial Hydrostatic 2081  Test 1250 T-On Location 5:27  
 (B) First Initial Flow 51  Jars 250 T-Started 6:41  
 (C) First Final Flow 180  Safety Joint 75 T-Open 9:05  
 (D) Initial Shut-In 652  Circ Sub NIL T-Pulled 11:05  
 (E) Second Initial Flow 182  Hourly Standby T-Out 13:00  
 (F) Second Final Flow 277  Mileage 160 - 100rt x2 310 Comments out of town pry  
 (G) Final Shut-In 622  Sampler loaded tools 11/3 2:30  
 (H) Final Hydrostatic 2055  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1885  
 Accessibility MP/DST Disc't  
 Sub Total 1885

Approved By \_\_\_\_\_ Our Representative

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