



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1193700  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1193700

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing    Pumping    Gas Lift    Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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CHARGE TO: American Warrior  
 ADDRESS:  
 CITY, STATE, ZIP CODE:

TICKET 25758

PAGE 1 OF 2

SERVICE LOCATIONS  
 1. Ness City KS WELL/PROJECT NO. 6-8 LEASE White COUNTY/PARISH Ellsworth STATE KS CITY Holly Road DATE 1 Dec 13 OWNER  
 2. TICKET TYPE  SERVICE  SALES CONTRACTOR DKK RIG NAME/NO. 8 SHIPPED VIA CT DELIVERED TO location ORDER NO.  
 3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE cement long string WELL PERMIT NO. WELL LOCATION 8-16-10  
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE TRK 114	80	mi			600	480.00
578		1			Pump Charge	1	ea			1500.00	1500.00
402		1			Controlizer	5 1/2	in	8	ea	70.00	560.00
403		1			Cement Basket	5 1/2	in	1	ea	300.00	300.00
406		1			Latch down plug & baffle	5 1/2	in	1	ea	275.00	275.00
407		1			insert float shoe w/ AUTO FILL	5 1/2	in	1	ea	375.00	375.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X [Signature]  
 DATE SIGNED TIME SIGNED  A.M.  P.M.  
1930

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				1	3990.00
WE UNDERSTOOD AND MET YOUR NEEDS?				2	5964.00
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				subtotal	9954.00
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				Ellsworth TAX 7.15%	456.99
ARE YOU SATISFIED WITH OUR SERVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO				TOTAL	9911.49
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND					



PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 25758

CUSTOMER American Warrior WELL White 6-8 DATE 1 Dec 13 PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY.		UM		UNIT PRICE	AMOUNT
		LOC	ACCT	DF			QTY.	UM	QTY.	UM		
325		1				STANDARD cement (for 4-2)	175	sk			14.50	2537.50
284		1				Calseal	800	lb	8	sk	35.00	280.00
283		1				SALT	900	lb			0.20	180.00
292		1				Latad-322	125	lb			8.00	1000.00
276		1				Flocele	50	lb			2.50	125.00
281		1				mudflush	500	gal			1.25	625.00
221		1				KCL liquid	2	gal			25.00	50.00
290		1				D-AIR	2	gal			42.00	84.00
581		1				SERVICE CHARGE	175				2.00	350.00
583		1				MILEAGE CHARGE	TOTAL WEIGHT 18325	LOADED MILES 80			1.00	733.00

CONTINUATION TOTAL 5964.50

JOB LOG

SWIFT Services, Inc.

DATE Dec 13 PAGE NO. 1

CUSTOMER American Warrior WELL NO. 6-8 LEASE White JOB TYPE Cement long string TICKET NO. 25758

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								175 sk SA-2 cement w/ $\frac{1}{2}$ " floccule 82jts 5 $\frac{1}{2}$ " x 15.5 casing, 3456' TD 3460' 3jts out shoe, +42' Cont 1,2,3,4,6,8,10,12 Basket 5
	1400							on loc TRK 114
	1410							start 5 $\frac{1}{2}$ " x 15.5" casing in well
	1515							Drop ball - circulate
	1615	4 $\frac{1}{2}$	12			200		Pump 500 gal mud flush
		4 $\frac{1}{2}$	20			200		Pump 20 bbl KCH flush
	1620		7					Plug RH - 30sts
	1630	4 $\frac{3}{4}$	36			200		mix SA-2 cement 145 <sup>sk</sup> @ 15.3 ppg
								wash out pump & line
								Drop latch down plug
	1645	6 $\frac{3}{4}$				200		Displace plug
		6 $\frac{3}{4}$	76			750		
	1700	6 $\frac{3}{4}$	86			1500		Land plug
								Release pressure to truck - dried up
	1705							wash truck
								Rack up
	1735							job complete Truck Dave, Brian & First



## DRILL STEM TEST REPORT

Prepared For: **American Warrior Inc**

PO Box 399  
Graden City KS 67846

ATTN: Jim Musgrove

**White #6-3**

**8-16s-10w Ellsworth,KS**

Start Date: 2013.11.30 @ 10:44:00

End Date: 2013.11.30 @ 19:11:00

Job Ticket #: 55361                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.12.04 @ 09:58:20





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

American Warrior Inc  
PO Box 399  
Graden City KS 67846  
ATTN: Jim Musgrove

**8-16s-10w Ellsworth, KS**

**White #6-3**

Job Ticket: 55361 **DST#: 1**

Test Start: 2013.11.30 @ 10:44:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:28:30  
 Time Test Ended: 19:11:00  
 Interval: **3285.00 ft (KB) To 3360.00 ft (KB) (TVD)**  
 Total Depth: 3360.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Cody Bloedorn  
 Unit No: 53  
 Reference Elevations: 1868.00 ft (KB)  
 1858.00 ft (CF)  
 KB to GR/CF: 10.00 ft

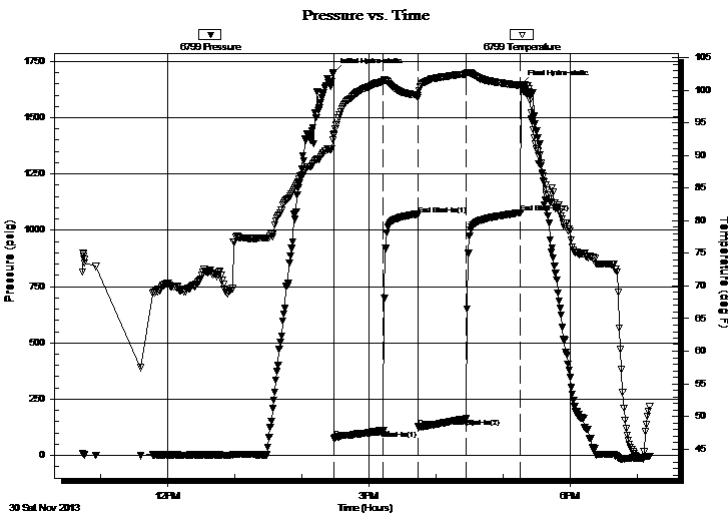
## Serial #: 6799

Inside

Press@RunDepth: 162.92 psig @ 3352.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.11.30 End Date: 2013.11.30 Last Calib.: 2013.11.30  
 Start Time: 10:44:05 End Time: 19:10:59 Time On Btm: 2013.11.30 @ 14:28:15  
 Time Off Btm: 2013.11.30 @ 17:15:45

TEST COMMENT: 45 - IF- 9 1/2" blow  
 30 - IS- No return  
 45 - FF- 5" blow  
 45 - FS- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1701.35	93.23	Initial Hydro-static
1	76.73	93.00	Open To Flow (1)
45	111.50	101.33	Shut-In(1)
76	1070.18	99.20	End Shut-In(1)
76	126.73	98.89	Open To Flow (2)
119	162.92	102.49	Shut-In(2)
167	1077.42	100.73	End Shut-In(2)
168	1648.70	100.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	SOCMW, 10%O, 30%M, 60%W	0.87
186.00	GHOCM, 10%G, 30%O, 60%M	2.61
45.00	GO, 40%G, 60%O	0.63
0.00	186' of G.I.P.	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

American Warrior Inc  
PO Box 399  
Graden City KS 67846  
ATTN: Jim Musgrove

**8-16s-10w Ellsworth,KS**  
**White #6-3**  
Job Ticket: 55361      **DST#: 1**  
Test Start: 2013.11.30 @ 10:44:00

**Tool Information**

Drill Pipe:	Length: 3286.00 ft	Diameter: 3.80 inches	Volume: 46.09 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	36000.00 lb
			<u>Total Volume: 46.09 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	30000.00 lb
Depth to Top Packer:	3285.00 ft			Final	32000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	75.00 ft				
Tool Length:	96.00 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			3265.00	
Shut In Tool	5.00			3270.00	
Hydraulic tool	5.00			3275.00	
Packer	5.00			3280.00	21.00      Bottom Of Top Packer
Packer	5.00			3285.00	
Stubb	1.00			3286.00	
Perforations	2.00			3288.00	
Change Over Sub	1.00			3289.00	
Drill Pipe	62.00			3351.00	
Change Over Sub	1.00			3352.00	
Recorder	0.00	6799	Inside	3352.00	
Recorder	0.00	8648	Outside	3352.00	
Perforations	5.00			3357.00	
Bullnose	3.00			3360.00	75.00      Bottom Packers & Anchor

**Total Tool Length: 96.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

American Warrior Inc  
PO Box 399  
Graden City KS 67846  
ATTN: Jim Musgrove

**8-16s-10w Ellsworth,KS**  
**White #6-3**  
Job Ticket: 55361      **DST#: 1**  
Test Start: 2013.11.30 @ 10:44:00

## 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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.39 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: inches			

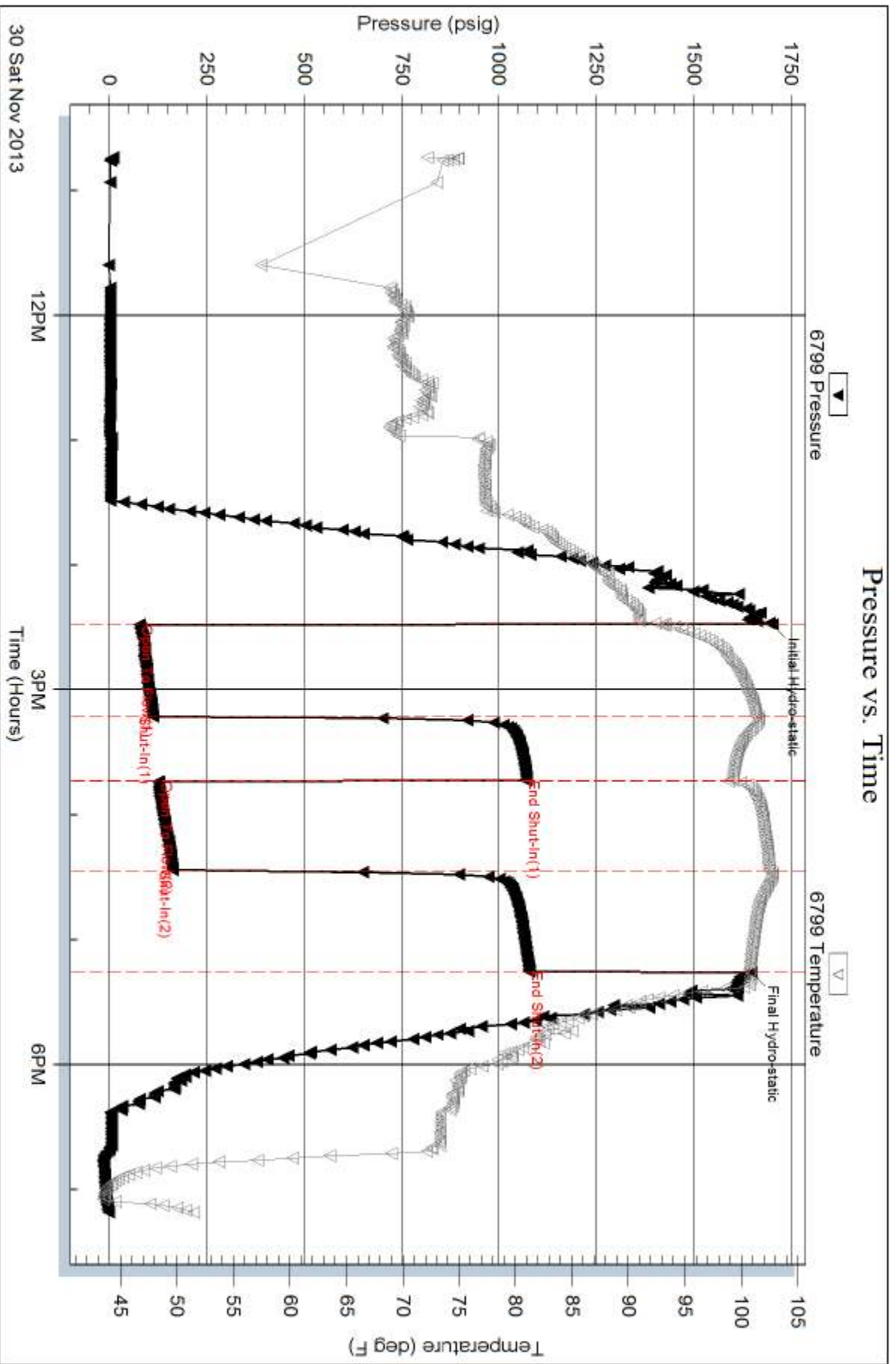
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	SOCMW, 10%O, 30%M, 60%W	0.870
186.00	GHOCM, 10%G, 30%O, 60%M	2.609
45.00	GO, 40%G, 60%O	0.631
0.00	186' of G.I.P.	0.000

Total Length: 293.00 ft      Total Volume: 4.110 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

### Pressure vs. Time

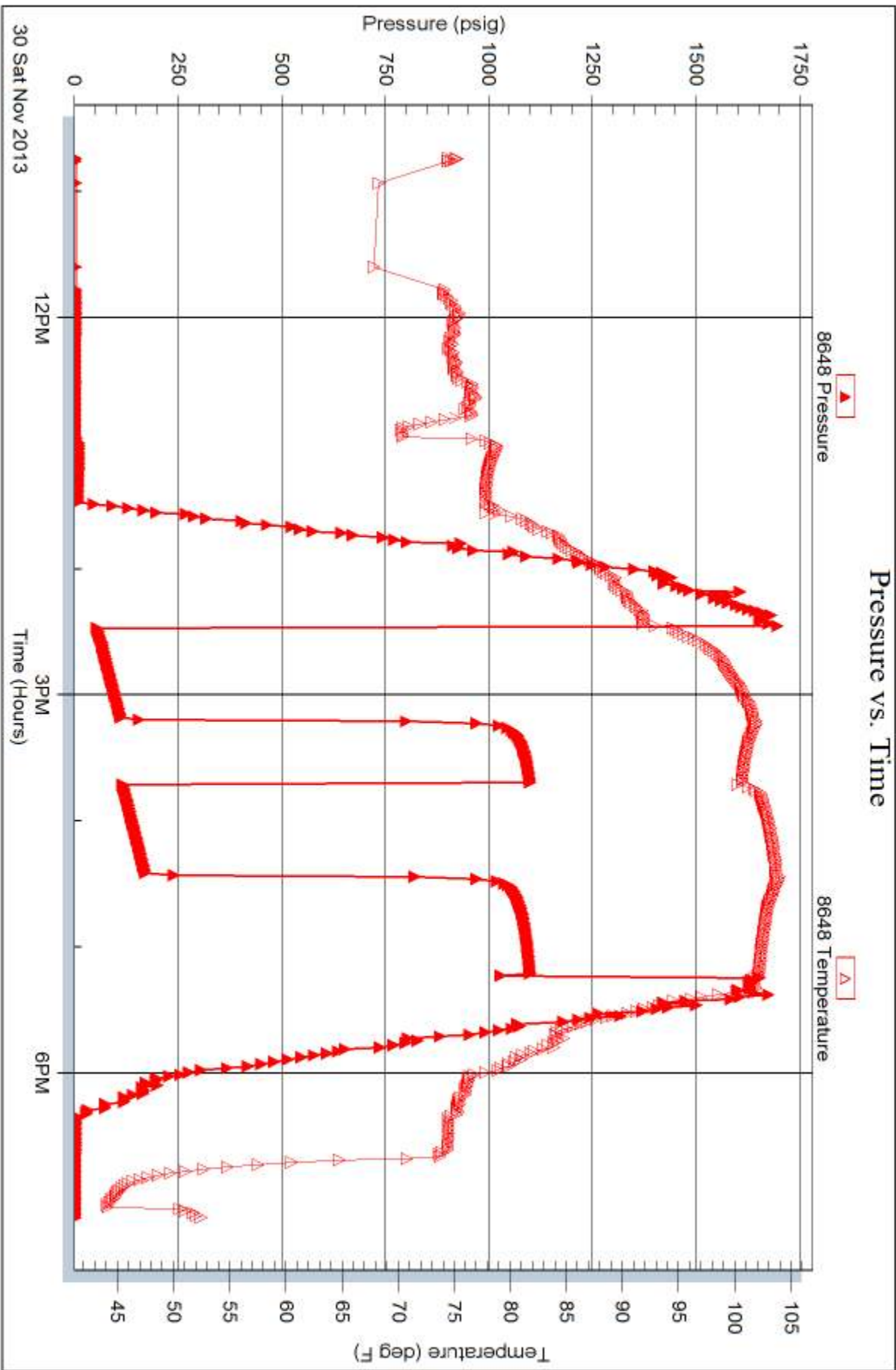


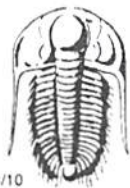
Serial #: 8648

Outside American Warrior Inc

White #6-3

DST Test Number: 1





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 55361

Well Name & No. White #6-3 Test No. 1 Date 11-30-13  
 Company American Warrior INC Elevation 1868 KB 1858 GL  
 Address 3118 Cummings Rd Garden City KS, 67846  
 Co. Rep / Geo. Jim Musgrave Rig Duke #8  
 Location: Sec. 8 Twp. 16s Rge. 10w Co. Ellsworth State KS

Interval Tested 3285 - 3360 Zone Tested Arbuckle  
 Anchor Length 75' Drill Pipe Run 3286' Mud Wt. 9.05  
 Top Packer Depth 3280 Drill Collars Run — Vis 55  
 Bottom Packer Depth 3285 Wt. Pipe Run — WL 6.4  
 Total Depth 3360 Chlorides 4.600 ppm System LCM —

Blow Description IF - 9 1/2" blow  
ISI - No return  
FF - 5" blow  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>50 CMW</u>	<u>10</u>	<u>60</u>	<u>30</u>	<u>—</u>
<u>186</u>	<u>640 CM</u>	<u>10</u>	<u>30</u>	<u>60</u>	<u>—</u>
<u>45</u>	<u>60</u>	<u>40</u>	<u>60</u>	<u>—</u>	<u>—</u>
Rec	Feet of <u>186' G.I.P.</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec Total	<u>293'</u> BHT <u>100°</u>	Gravity	API RW	@	° F Chlorides

- (A) Initial Hydrostatic 1701
- (B) First Initial Flow 76
- (C) First Final Flow 111
- (D) Initial Shut-In 1070
- (E) Second Initial Flow 126
- (F) Second Final Flow 162
- (G) Final Shut-In 1077
- (H) Final Hydrostatic 1648

Initial Open 45  
 Initial Shut-In 30  
 Final Flow 45  
 Final Shut-In 45

- Test 1150
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 118 RT 182.90
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1332.90

T-On Location 10:14am  
 T-Started 10:41 am  
 T-Open ~~10:41~~ 14:30  
 T-Pulled 1715  
 T-Out 1913  
 Comments

- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1332.90
- MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Cody B...

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.

**JAMES C. MUSGROVE**

Petroleum Geologist  
212 Main Street  
P.O. Box 215  
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

American Warrior Inc.  
White #6-8  
SW-NW-SE-NW  
(1062' FNL & 1388' FWL)  
Section 8-16s-10w  
Ellsworth County, Kansas  
Page 1

**5 1/2" Production Casing Set**

**Contractor:** Southwind Drilling Co. (Rig #8)  
**Commenced:** November 24, 2013  
**Completed:** December 1, 2013  
**Elevation:** 1876' K.B; 1874' D.F; 1868' G.L.  
**Casing program:** Surface; 8 5/8" @ 376'  
Production; 5 1/2" @ 3459'  
**Sample:** Samples saved and examined 2600' to the Rotary Total Depth.  
**Drilling time:** One (1) foot drilling time recorded and kept 2600 ft. to the Rotary Total Depth.  
**Measurements:** All depths measured from the Kelly Bushing.  
**Drill Stem Tests:** There was one (1) Drill Stem Test ran by Trilobite Testing Co.  
**Electric Log:** By Pioneer Energy Services; Dual Induction, Dual Compensated Porosity Log, and Microresistivity Logs.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	681	+1195
Base Anhydrite	708	+1168
Heebner	2901	-1025
Toronto	2921	-1045
Douglas	2931	-1055
Brown Lime	3002	-1126
Lansing	3015	-1139
Base Kansas City	3311	-1435
Conglomerate	3330	-1454
Arbuckle	3345	-1469
Rotary Total Depth	3460	-1584
Log Total Depth	3459	-1583

(All tops and zones corrected to Electric Log measurements).



SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

2800-2904' Several zones of well-developed porosity encountered in the drilling of the Topeka Section but no shows of oil and/or gas was noted.

TORONTO SECTION

2921-2930' Limestone; white, cream, finely crystalline, chalky, poor visible porosity, no shows.

DOUGLAS SAND SECTION

2940-2951' Sand; gray/grayish green, very fine grained, micaceous, sub rounded, friable, fair intergranular porosity, questionable stain, no show of free oil and no odor in fresh samples.

LANSING SECTION

3015-3025' Limestone; white, cream, oolitic, scattered questionable stain, no free oil and no odor in fresh samples.

3050-3060' Limestone; white, oolitic, oomoldic, chalky, scattered oomoldic porosity, brown and black stain, show of free oil (heavy-black) and faint odor in fresh samples.

3065-3078' Limestone; gray, oolitic, dense, plus white/gray, oolitic, opaque chert.

3100-3110' Limestone; gray, finely oolitic, chalky, dense, no shows.

3112-3137' Limestone; white, tan, oomoldic, good oomoldic porosity (barren).

3165-3180' Limestone; white, gray, tan, oolitic, sub oomoldic, chalky, no shows.

3196-3215' Limestone; gray, white, oolitic, chalky, scattered porosity, poorly developed, no shows.

3240-3250' Limestone; white, tan, chalky, (dense) plus gray, white and amber colored chert.

CONGLOMERATE SECTION

3330-3345' Abundant white boney chert in matrix of varied colored shale.

ARBUCKLE SECTION

3345-3350' Dolomite; tan, very finely crystalline, sucrosic, scattered pinpoint porosity, trace stain, show of fee oil and faint odor in fresh samples.

3350-3360' Dolomite; as above, increase in porosity, fair stain, show of free oil and fair odor in fresh samples, plus white chert.

Drill Stem Test #1 3285-3360'

Times: 45-30-45-45

Blow: Fair

Recovery: 186' gas in pipe  
45' clean gassy oil  
186' heavy oil and gas cut mud  
(10% gas, 30% oil, 60% mud)  
62' slightly oil and gas cut muddy water  
(10% oil, 60% water, 30% mud)

Pressures: ISIP 1070 psi  
FSIP 1077 psi  
IFP 76-111 psi  
FFP 126-162 psi  
HSH 1701-1648 psi

3360-3380' Dolomite; as above, fair stain, show of free oil and good odor in fresh samples, plus white, boney, opaque chert.

3380-3396' Dolomite; as above, plus iron pyrite.

3400-3425' Dolomite; gray, tan, medium crystalline, good intercrystalline porosity, few sub oomoldic, no shows.

3425-3440' Dolomite; white/tan and gray, finely crystalline, sucrosic, poor to fair pinpoint porosity, plus abundant white/gray boney chert.


3440-3460' Dolomite; as above, plus white chalk.

Rotary Total Depth 3460  
Log Total Depth 3459

**Recommendations:**

5 1/2" production casing was set and cemented on the White #6-8.

Respectfully submitted;

  
James C. Musgrove  
Petroleum Geologist

