

# **Geological Report**

American Warrior, Inc.  
**Melvin Unit #2-16**  
900' FSL & 2675' FWL  
Sec. 16 T18s R21w  
Ness County, Kansas



**American Warrior, Inc.**

## General Data

Well Data: American Warrior, Inc.  
Melvin Unit #2-16  
900' FSL & 2675' FWL  
Sec. 16 T18s R21w  
Ness County, Kansas  
API # 15-135-25885-0000

Drilling Contractor: Discovery Drilling Co. Inc. Rig #3

Geologist: Jason T Alm

Spud Date: August 24, 2015

Completion Date: August 30, 2015

Elevation: 2167' Ground Level  
2175' Kelly Bushing

Directions: Bazine KS, East 2 mi on Hwy 96 to FF Rd, North 2 mi to 150 Rd, East ½ mi, North into location.

Casing: 220' 8 5/8" surface casing  
4260' 5 1/2" production casing

Samples: 10' wet and dry, 3900' to RTD

Drilling Time: 3600' to RTD

Electric Logs: Pioneer Energy Services "J. Hendrickson"  
CNL/CDL, DIL

Drillstem Tests: Two, Trilobite Testing, Inc. "Ken Swinney"

Problems: None

Remarks: Slight plugging action during initial flow of DST #1.

## Formation Tops

	<b>American Warrior, Inc.</b> <b>Melvin Unit #2-16</b> <b>Sec. 16 T18s R21w</b> <b>900' FSL &amp; 2675' FWL</b>
<b>Formation</b>	
Anhydrite	<b>1421', +754</b>
Base	<b>1454', +721</b>
Heebner	<b>3630', -1455</b>
Lansing	<b>3676', -1501</b>
BKC	<b>4002', -1827</b>
Pawnee	<b>4069', -1894</b>
Fort Scott	<b>4148', -1973</b>
Cherokee	<b>4166', -1991</b>
Mississippian	<b>4240', -2065</b>
LTD	<b>4261', -2086</b>
RTD	<b>4265', -2090</b>

## Sample Zone Descriptions

**Fort Scott (4148', -1973): Not Tested**  
 Ls – Fine crystalline with poor to fair scattered inter-crystalline porosity, light spotted oil stain in porosity, no saturation, very slight show of free oil when broken, no odor, fair to good cut fluorescents, 75 units hotwire.

**Mississippian Osage (4240', -2065): Covered in DST #1,2**  
 Chert – Dolo – Weathered in part, slightly triptolic with fair to good vuggy porosity, dolomitic – fine crystalline with scattered poor inter-crystalline and vuggy porosity, light to fair oil stain in porosity with light spotted saturation, slight show of free oil, light to fair odor, fair to good yellow fluorescents, 90 units hotwire.

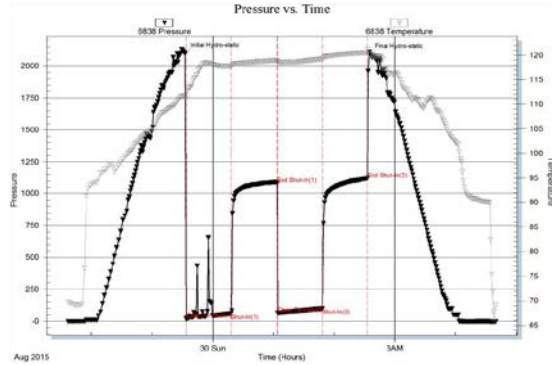
## Drill Stem Tests

Trilobite Testing, Inc.  
"Ken Swinney"

### DST #1      Mississippian Osage

Interval (4251' – 4265') Anchor Length 9'

IHP	– 2098 #	
IFP	– 45" – B.O.B. 42 min.	18-59 #
ISI	– 45" – Built to ¼ in.	1081 #
FFP	– 45" – Built to 8 ½ in.	64-99 #
FSI	– 45" – W.S.B.	1121 #
FHP	– 2089 #	
BHT	– 120°F	

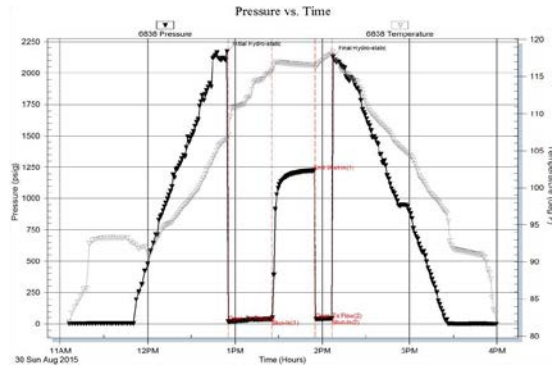


Recovery:      209' GIP  
                   202' GCO      Gravity 35° API  
                   30' MCWO      80% Oil, 15% Water

### DST #2      Mississippian Osage

Interval (4259' – 4265') Anchor Length 6'

IHP	– 2168 #	
IFP	– 30" – Built to ½ in.	17-38 #
ISI	– 30" – Dead	1223 #
FFP	– 10" – Dead	38-42 #
FHP	– 2131 #	
BHT	– 118°F	



Recovery:      3' CO  
                   60' OCMW      5% Oil, 60% Water

## Structural Comparison

	American Warrior, Inc. Melvin Unit #2-16 Sec. 16 T18s R21w 900' FSL & 2675' FWL	American Warrior, Inc. Melvin #1-16 Sec. 16 T18s R21w 1910' FSL & 940' FWL		American Warrior, Inc. Triple M #1 Sec. 15 T18s R21w 2304' FSL & 125' FWL	
<b>Formation</b>					
Anhydrite	1421', +754	1432', +749	(+5)	1418', +753	(+1)
Base	1454', +721	1463', +718	(+3)	1450', +721	FL
Heebner	3630', -1455	3648', -1467	(+12)	3644', -1473	(+18)
Lansing	3676', -1501	3692', -1511	(+10)	3680', -1509	(+8)
BKC	4002', -1827	4017', -1836	(+9)	NA	NA
Pawnee	4069', -1894	4084', -1903	(+9)	4061', -1890	(-4)
Fort Scott	4148', -1973	4162', -1981	(+8)	4139', -1968	(-5)
Cherokee	4166', -1991	4181', -2000	(+9)	4158', -1987	(-4)
Mississippian	4240', -2065	4264', -2083	(+18)	4232', -2061	(-4)

## Summary

The location for the Melvin Unit #2-16 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Two Drill Stem Tests were conducted, one of which recovered commercial amounts of oil from the Mississippian Osage Formation. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Melvin Unit #2-16 well.

## Recommended Perforations

### Primary:

Mississippian Osage	(4244' – 4254')	DST #1
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### Before Abandonment:

Fort Scott	(4154' – 4157')	Not Tested
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Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.