

# **Geological Report**

American Warrior, Inc.  
**Hinnergardt #12 Unit**  
1535' FNL & 2615' FWL  
Sec. 12 T20s R21w  
Ness County, Kansas



**American Warrior, Inc.**

## General Data

Well Data: American Warrior, Inc.  
Hinnergardt #12 Unit  
1535' FNL & 2615' FWL  
Sec. 12 T20s R21w  
Ness County, Kansas  
API # 15-135-25929-0000

Drilling Contractor: Discovery Drilling Rig #3

Geologist: Jason T Alm

Spud Date: October 18, 2016

Completion Date: October 25, 2016

Elevation: 2230' Ground Level  
2238' Kelly Bushing

Directions: Bazine KS, 4 mi East on Hwy 96 to the HH Rd. 8  
mi South to 50 Rd. East 1 ½ mi, South into location.

Casing: 220' 8 5/8" surface casing  
4371' 5 1/2" production casing

Samples: 10' wet and dry, 4000' to RTD

Drilling Time: 3700' to RTD

Electric Logs: None

Drillstem Tests: One, Trilobite Testing, Inc. "Leal Cason"

Problems: None

Remarks: None

## Formation Tops

	<b>American Warrior, Inc.</b> <b>Hinnergardt #12 Unit</b> <b>Sec. 12 T20s R21w</b> <b>1535' FNL &amp; 2615' FWL</b>
<b>Formation</b>	
Anhydrite	<b>1436' +802</b>
Base	<b>1464' +774</b>
Heebner	<b>3746' -1508</b>
Lansing	<b>3794' -1556</b>
BKc	<b>4100' -1862</b>
Pawnee	<b>4256' -2018</b>
Fort Scott	<b>4280' -2042</b>
Cherokee	<b>4301' -2063</b>
Mississippian	<b>4357' -2119</b>
LTD	<b>4371' -2133</b>
RTD	<b>4372' -2134</b>

## Sample Zone Descriptions

**Mississippian Osage (4357', -2119):**      **Covered in DST #1**  
 Δ – White, weathered with good vuggy porosity, dolo in part with poor inter-crystalline and vuggy porosity, light to good oil stain and saturation, good odor, fair show of free oil, good yellow fluorescents, 35 units hotwire.

**Drill Stem Tests**  
Trilobite Testing, Inc.  
“Leal Cason”

**DST #1      Mississippian Osage**

Interval (4359' – 4372') Anchor Length 13'  
 IHP – 2291 #  
 IFP – 10” – B.O.B. 1 min.                      490-532 #  
 ISI – 30” – Built to 2 in.                      1311 #  
 FFP – 10” – B.O.B. 45 sec.                      692-724 #  
 FSI – 30” – Built to 1 in.                      1309 #  
 FHP – 2194 #  
 BHT – 125°F

Recovery:      120' GIP  
                     1700' GCO                      33° API

**Structural Comparison**

	American Warrior, Inc. Hinnergardt #12 Unit Sec. 12 T20s R21w 1535' FNL & 2615' FWL	American Warrior, Inc. Hinnergardt #3-12 Sec. 12 T20s R21w 1008' FNL & 2213' FWL		American Warrior, Inc. Hinnergardt Ben #4 Sec. 12 T20s R21w 2310' FNL & 1700' FEL	
<b>Formation</b>					
Anhydrite	<b>1436' +802</b>	1449' +799	<b>(+3)</b>	1438' +802	<b>FL</b>
Base	<b>1464' +774</b>	1477' +771	<b>(+3)</b>	1465' +775	<b>(-1)</b>
Heebner	<b>3746' -1508</b>	3763' -1515	<b>(+7)</b>	3751' -1511	<b>(+3)</b>
Lansing	<b>3794' -1556</b>	3814' -1566	<b>(+10)</b>	3799' -1559	<b>(+3)</b>
BKC	<b>4100' -1862</b>	NA	<b>NA</b>	NA	<b>NA</b>
Pawnee	<b>4256' -2018</b>	4272' -2024	<b>(+6)</b>	4260' -2020	<b>(+2)</b>
Fort Scott	<b>4280' -2042</b>	4300' -2052	<b>(+10)</b>	4285' -2045	<b>(+3)</b>
Cherokee	<b>4301' -2063</b>	4316' -2068	<b>(+5)</b>	4303' -2063	<b>FL</b>
Mississippian	<b>4357' -2119</b>	4374' -2126	<b>(+7)</b>	4360' -2120	<b>(+1)</b>

## **Summary**

The location for the Hinnergardt #12 Unit was found via 3-D seismic survey. The new well ran structurally as expected via the survey. One Drill Stem Test was conducted 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 Hinnergardt #12 Unit well.

## **Recommended Perforations**

**Primary:**

**Mississippian Osage**

**(4357' – 4367')**

**DST #1**

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.