

# **Geological Report**

American Warrior, Inc.  
**Ben Hinnergardt #4**  
2310' FNL & 1700' FEL  
Sec. 12 T20s R21w  
Ness County, Kansas



**American Warrior, Inc.**

## General Data

Well Data: American Warrior, Inc.  
Ben Hinnergardt #4  
2310' FNL & 1700' FEL  
Sec. 12 T20s R21w  
Ness County, Kansas  
API # 15-135-25744-0000

Drilling Contractor: Petromark Drilling, LLC. Rig #1

Geologist: Jason T Alm

Spud Date: March 3, 2014

Completion Date: March 11, 2014

Elevation: 2234' Ground Level  
2240' Kelly Bushing

Directions: Bazine KS, 4 mi East on Hwy 96 to the HH Rd. 8  
mi. South to 50 Rd. East 2 mi. to County Line Rd.  
½ mi. South, West into location.

Casing: 223' 8 5/8" surface casing  
4387' 5 1/2" production casing

Samples: 10' wet and dry, 4050' to RTD

Drilling Time: 3700' to RTD

Electric Logs: None

Drillstem Tests: Two, Trilobite Testing, Inc. "Cody Bloedorn"

Problems: None

Remarks: None

## Formation Tops

	American Warrior, Inc. Ben Hinnergardt #4 Sec. 12 T20s R21w 2310' FNL & 1700' FEL
<b>Formation</b>	
Anhydrite	1438', +802
Base	1465', +775
Heebner	3751', -1511
Lansing	3799', -1559
BKc	4135', -1895
Pawnee	4260', -2020
Fort Scott	4285', -2045
Cherokee	4303', -2063
Mississippian	4360', -2120
RTD	4388', -2148

## Sample Zone Descriptions

**Mississippian Osage (4360', -2120):** Covered in DST #1,2

Δ – Dolo – Fine sucrosic crystalline with fair inter-crystalline, very heavy slightly triptolic chert with fair to good vuggy porosity, light to good oil stain and saturation, fair show of free oil, good odor, fair to good spotted yellow fluorescents, 30-55 units hotwire.

**Drill Stem Tests**  
Trilobite Testing, Inc.  
"Cody Bloedorn"

**DST #1**

**Mississippian Osage**

Interval (4364' – 4378') Anchor Length 14'

IHP	– 2242 #	
IFP	– 30" – Built to ¼ in.	16-21 #
ISI	– 30" – Dead	1264 #
FFP	– 10" – V.W.S.B.	21-24 #
FHP	– 2169 #	
BHT	– 113°F	

Recovery: 30' SOCM 1% Oil

**DST #5**

**Mississippian Osage**

Interval (4375' – 4385') Anchor Length 10'

IHP	– 2275 #	
IFP	– 45" – Built to 1 ¾ in.	15-39 #
ISI	– 45" – W.S.B.	1252 #
FFP	– 45" – Built to ½ in.	39-57 #
FSI	– 45" – Dead	1234 #
FHP	– 2111 #	
BHT	– 119°F	

Recovery: 93' OCWM 10% Oil, 20% Water

**Structural Comparison**

<b>Formation</b>	<b>American Warrior, Inc. Ben Hinnergardt #4 Sec. 12 T20s R21w 2310' FNL &amp; 1700' FEL</b>	<b>American Warrior, Inc. Ben Hinnergardt #3 Sec. 12 T20s R21w 1750' FNL &amp; 1275' FEL</b>	<b>National Oil Co. Ben Hinnergardt #1 Sec. 12 T20s R21w C SE NE</b>	<b>NA NA (+9) (+9) NA NA (+8) NA (+14)</b>
Anhydrite	<b>1438', +802</b>	1436', +800	NA	<b>NA</b>
Base	<b>1465', +775</b>	1462', +774	NA	<b>NA</b>
Heebner	<b>3751', -1511</b>	3748', -1512	3748', -1520	<b>(+9)</b>
Lansing	<b>3799', -1559</b>	3796', -1560	3794', -1566	<b>(+9)</b>
BKc	<b>4135', -1895</b>	4133', -1897	NA	<b>NA</b>
Pawnee	<b>4260', -2020</b>	4260', -2024	NA	<b>NA</b>
Fort Scott	<b>4285', -2045</b>	4285', -2049	4285', -2057	<b>(+8)</b>
Cherokee	<b>4303', -2063</b>	4304', -2068	NA	<b>NA</b>
Mississippian	<b>4360', -2120</b>	4385', -2149	4362', -2134	<b>(+14)</b>

## **Summary**

The location for the Ben Hinnergardt #4 was found via 3-D seismic survey. The new well ran structurally higher than expected. 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 Ben Hinnergardt #4 well.

## **Recommended Perforations**

**Mississippian Osage      (4360' – 4385')      DST #1,2**

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.