

# **Geological Report**

**Lewis #1-26**  
1379' FSL & 1626' FWL  
Sec. 26 T15s R30w  
Gove County, Kansas



**American Warrior, Inc.**

## General Data

Well Data: American Warrior, Inc.  
Lewis #1-26  
1379' FSL & 1626' FWL  
Sec. 26 T15s R30w  
Gove County, Kansas  
API # 15-063-22294-0000

Drilling Contractor: Discovery Drilling Co. Inc. Rig #2

Geologist: Jason T Alm

Spud Date: August 29, 2016

Completion Date: September 5, 2016

Elevation: 2637' Ground Level  
2645' Kelly Bushing

Directions: Healy KS, at the intersection of Dodge Rd and Hwy  
4, North 8 miles to Gove Co C Rd, West 1 mi,  
South and East into location.

Casing: 233' 8 5/8" surface casing  
4399' 5 1/2" production casing

Samples: 10' wet and dry, 3600'' to RTD

Drilling Time: 3300' to RTD

Electric Logs: Pioneer Energy Services "Tim Martin"  
CNL/CDL, DIL, MEL, BHCS

Drillstem Tests: Three, Trilobite Testing, Inc. "Mike Roberts"

Problems: None

Remarks: There was H2S gas present in the recovery for DST  
#2. Be Careful when completing that zone.

## Formation Tops

<b>Formation</b>	<b>American Warrior, Inc. Lewis #1-26 Sec. 26 T15s R30w 1379' FSL &amp; 1626' FWL</b>
Anhydrite	<b>2054', +591</b>
Base	<b>2083', +562</b>
Heebner	<b>3691', -1046</b>
Toronto	<b>3712', -1067</b>
Lansing	<b>3732', -1087</b>
BKC	<b>4069', -1424</b>
Marmaton	<b>4118', -1473</b>
Pawnee	<b>4184', -1539</b>
Fort Scott	<b>4239', -1594</b>
Cherokee	<b>4263', -1618</b>
Johnson	<b>4305', -1660</b>
Mississippian	<b>4342', -1697</b>
LTD	<b>4400', -1755</b>
RTD	<b>4400', -1755</b>

## Sample Zone Descriptions

- LKC H** (3910', -1265): **Covered in DST #1**  
 Ls – Fine to sub-crystalline, oolitic with poor oolitic porosity, light to fair oil stain in porosity, slight show of free oil when broken, very light odor, dull to fair yellow fluorescents, fair cut, 20 units hotwire.
- LKC I** (3942', -1297): **Covered in DST #1**  
 Ls – Fine crystalline, fossiliferous, oolitic with poor oolitic and inter-fossil porosity, light to fair oil stain, slight show of free oil when broken, very light odor, fair yellow fluorescents, good cut, 61 units hotwire.
- LKC J** (3966', -1321): **Covered in DST #1**  
 Ls – Fine crystalline, oolitic packstone with fair to good oomoldic porosity, light to fair oil stain with light scattered saturation, fair show of free oil when broken, fair odor, light to fair yellow fluorescents, fair cut, 94 units hotwire.

**LKC L**

**(4029', -1384): Covered in DST #2**

Ls – Fine to coarse crystalline with fair to good inter-crystalline porosity, light to fair oil stain and saturation in porosity, fair show of free oil, strong “sour” odor, scattered fair yellow fluorescents, good spotted cut, 121 units hotwire.

**Johnson**

**(4305', -1660): Covered in DST #3**

Ls – Fine to sub-crystalline with poor to fair inter-crystalline and pinpoint vuggy porosity, light to good oil stain with light to good scattered saturation, slight show of free oil when broken, no odor, light spotted yellow fluorescents, good cut.

**Drill Stem Tests**

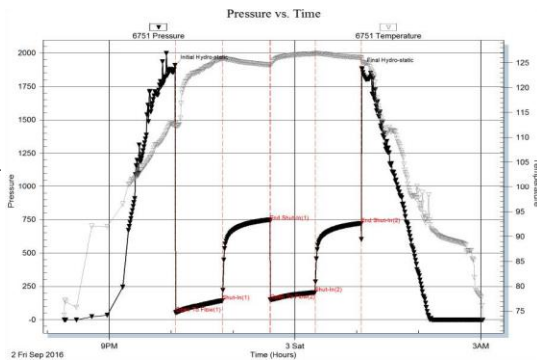
Trilobite Testing, Inc.

“Mike Roberts”

**DST #1 LKC H - J**

Interval (3903' – 3990') Anchor Length 87'

- IHP – 1906 #
- IFP – 45” – Built to 4 in. 51-142 #
- ISI – 45” – Dead 740 #
- FFP – 45” – Built to 6 in. 148-203 #
- FSI – 45” – Dead 722 #
- FHP – 1883 #
- BHT – 126°F

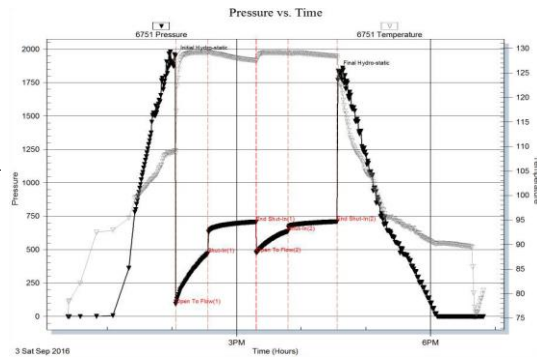


Recovery: 248' Mud  
124' WCM w/ oil spots 40% Water

**DST #2 LKC L**

Interval (4021' – 4041') Anchor Length 20'

- IHP – 1949 #
- IFP – 30” – B.O.B. 3 min. 91-469 #
- ISI – 45” – Built to 5 1/2 in. 706 #
- FFP – 30” – B.O.B. 4 min. 474-635 #
- FSI – 45” – Dead 709 #
- FHP – 1835 #
- BHT – 129°F



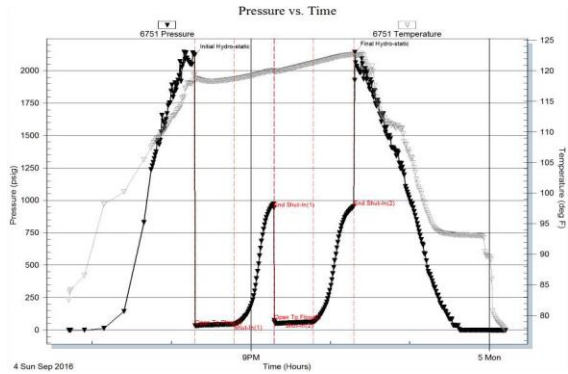
Recovery: 248' GIP  
15' GWMCO 85% Oil, 5% Water  
248' OCWGM 10% Oil, 20% Water  
1178' GCOW 10% Oil, 85% Water

**DST #3 Johnson**

Interval (4262' – 4320') Anchor Length 58'

- IHP – 2121 #
- IFP – 30" – Built to 3 in. 32-45 #
- ISI – 30" – Dead 940 #
- FFP – 30" – Built to 5 in. 73-62 #
- FSI – 30" – Dead 952 #
- FHP – 2141 #
- BHT – 122°F

Recovery: 15' GCO 95% Oil  
 62' GMCO 75% Oil



**Structural Comparison**

	American Warrior, Inc. Lewis #1-26 Sec. 26 T15s R30w 1379' FSL & 1626' FWL	White & Ellis Drilling Bretton #1-26 Sec. 26 T15s R30w NE NE SW		White & Ellis Drilling L Evans #1-26 Sec. 26 T15s R30w 2970' FSL & 3300' FEL	
<b>Formation</b>					
Anhydrite	2054', +591	2043', +588	(+3)	2037', +592	(-1)
Base	2083', +562	2069', +562	<b>FL</b>	2064', +565	(-3)
Heebner	3691', -1046	3674', -1043	(-3)	3669', -1040	(-6)
Toronto	3712', -1067	NA	NA	NA	NA
Lansing	3732', -1087	3713', -1082	(-5)	3709', -1080	(-7)
BKC	4069', -1424	NA	NA	NA	NA
Marmaton	4118', -1473	NA	NA	NA	NA
Pawnee	4184', -1539	4176', -1545	(+6)	4171', -1542	(+3)
Fort Scott	4239', -1594	4235', -1604	(+10)	4227', -1598	(+4)
Cherokee	4263', -1618	4262', -1631	(+13)	4253', -1624	(+6)
Johnson	4305', -1660	4303', -1672	(+12)	4294', -1665	(+5)
Mississippian	4342', -1697	4354', -1723	(+26)	4327', -1698	(+1)

## Summary

The location for the Lewis #1-26 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Three Drill Stem Tests were conducted, two of which recovered commercial amounts of oil from the Lansing-Kansas City and Johnson zones. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the Lewis #1-26 well.

### Recommended Perforations

**Primary:**

<b>Johnson zone</b>	<b>(4306' – 4308')</b>	<b>DST #3</b>
	<b>(4315' – 4318')</b>	

**Secondary:**

<b>LKC L</b>	<b>(4030' – 4034')</b>	<b>DST #2</b>
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**Before Abandonment:**

<b>LKC J</b>	<b>(3969' – 3976')</b>	<b>DST #1</b>
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Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.