

# **Geological Report**

**J.L. Rumsey #1-23**  
1530' FNL & 1840' FEL  
Sec. 23 T11s R17w  
Ellis County, Kansas



**Patterson Energy, LLC.**

## General Data

Well Data: Patterson Energy, LLC.  
J.L. Rumsey #1-23  
1530' FNL & 1840' FEL  
Sec. 23 T11s R17w  
Ellis County, Kansas  
API # 15-051-26957-0000

Drilling Contractor: Murfin Drilling Co. Rig #8

Geologist: Jason T Alm

Spud Date: June 17, 2019

Completion Date: June 22, 2019

Elevation: 1905' Ground Level  
1910' Kelly Bushing

Directions: Catherine KS, East 1.5 mi to Codell Rd. North ~5.5  
mi. East into location.

Casing: 232' 8 5/8" surface casing  
3394' 5 1/2" production casing

Samples: 10' wet and dry, 2800' to RTD

Drilling Time: 2800' to RTD

Electric Logs: Gemini Wireline "Casey Patterson"  
CNL/CDL, DIL

Drillstem Tests: None

Problems: None

Remarks: Triplex Shoe set @ 3394'

## Formation Tops

	<b>Patterson Energy, LLC.</b> <b>J.L. Rumsey #1-23</b> <b>Sec. 23 T11s R17w</b> <b>1530' FNL &amp; 1840' FEL</b>
<b>Formation</b>	
Anhydrite	<b>1102' +808</b>
Base	<b>1140' +770</b>
Topeka	<b>2818' -908</b>
Heebner	<b>3054' -1144</b>
Toronto	<b>3076' -1166</b>
Lansing	<b>3102' -1192</b>
BKC	<b>3336' -1426</b>
Simpson	<b>3357' -1447</b>
Arbuckle	<b>3388' -1478</b>
LTD	<b>3408' -1498</b>
RTD	<b>3410' -1500</b>

## Sample Zone Descriptions

<b>Topeka 30'</b>	<b>(2848' -938): Not Tested</b> Ls – Fine crystalline, oolitic in part with poor scattered micro oomoldic and poor to fair inter-crystalline porosity, light to fair spotted oil stain, slight show of free oil when broken, light free on cup, dull yellow fluorescents.
<b>LKC “B” zone</b>	<b>(3112' -1202): Not Tested</b> Ls – Fine crystalline, slightly oolitic, sucrosic in part with poor inter-crystalline porosity, light to fair scattered oil stain, very light show of free oil, light odor, very dull yellow fluorescents.
<b>LKC “C” zone</b>	<b>(3128' -1218): Not Tested</b> Ls – Fine crystalline, oolitic packstone in part with good micro-oomoldic porosity, light to fair spotted oil stain in porosity, slight show of free oil when broken, light odor, dull yellow fluorescents.
<b>LKC “I” zone</b>	<b>(3254' -1344): Not Tested</b> Ls – Fine to sub-crystalline, oolitic in part with poor scattered oolitic and scattered poor pinpoint vuggy porosity, light to scattered fair oil stain, very slight show of free oil when broken, light gassy odor, dull yellow fluorescents.
<b>Simpson</b>	<b>(3357' -1447): Not Tested</b> Dolo – Fine crystalline with poor inter-crystalline and scattered vuggy porosity, fair oil stain in vugs, slight show of free oil on cup, strong odor, many medium grained sandstone clusters with light oil stain and slight show of free oil.

**Arbuckle (3388' -1478): Not Tested**

Dolo – Fine to medium sucrosic crystalline in part with poor to scattered fair inter-crystalline and vuggy porosity, light to fair oil stain, few pieces with light saturation, show of free oil on cup and show of free oil when broken, strong odor, dull yellow fluorescents, slight oolitic chert, few pieces of dolomite medium rhombic crystalline.

**Structural Comparison**

	<b>Patterson Energy, LLC. J.L. Rumsey #1-23 Sec. 23 T11s R17w 1530' FNL &amp; 1840' FEL</b>	Shell Oil Co. Rumsey #34 Sec. 23 T11s R17w C SW NE		Shell Oil Co. Rumsey #28 Sec. 23 T11s R17w NE SW NE	
<b>Formation</b>					
Anhydrite	<b>1102' +808</b>	1106' +806	<b>(+2)</b>	NA	<b>NA</b>
Base	<b>1140' +770</b>	NA	<b>NA</b>	NA	<b>NA</b>
Topeka	<b>2818' -908</b>	2832' -920	<b>(+12)</b>	2844' -922	<b>(+14)</b>
Heebner	<b>3054' -1144</b>	3059' -1147	<b>(+3)</b>	NA	<b>NA</b>
Toronto	<b>3076' -1166</b>	3081' -1169	<b>(+3)</b>	NA	<b>NA</b>
Lansing	<b>3102' -1192</b>	3107' -1195	<b>(+3)</b>	NA	<b>NA</b>
BKC	<b>3336' -1426</b>	NA	<b>NA</b>	NA	<b>NA</b>
Simpson	<b>3357' -1447</b>	NA	<b>NA</b>	3384' -1462	<b>(+15)</b>
Arbuckle	<b>3388' -1478</b>	3393' -1481	<b>(+3)</b>	3406' -1484	<b>(+6)</b>

**Summary**

The location J.L. Rumsey #1-23 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. No Drill Stem Tests were conducted. After all gathered data had been examined the decision was made to run 5 ½ inch production casing to further evaluate the J.L. Rumsey #1-23 well.

**Recommended Perforations**

**Primary:**

**Arbuckle 3394' – 3410' Not Tested**

**Secondary:**

**LKC I zone 3254' – 3259' Not Tested**

**LKC C zone 3132' – 3136' Not Tested**

**Before Abandonment:**

**Topeka 30' zone 2848' – 2854' Not Tested**

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.