

# **Geological Report**

## **DeWerff #1**

330' FSL & 2539' FWL

Sec. 32 T22s R12w

Stafford County, Kansas



**Globe Operating, Inc.**

## General Data

Well Data: Globe Operating, Inc.  
DeWerff #1  
330' FSL & 2539' FWL  
Sec. 32 T22s R12w  
Stafford County, Kansas  
API # 15-185-23952-0000

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

Geologist: Jason T Alm

Spud Date: November 21, 2015

Completion Date: November 28, 2015

Elevation: 1844' Ground Level  
1852' Kelly Bushing

Directions: Hudson KS, West ¾ mi to blacktop, South 1 mi,  
East into location.

Casing: 363' 8 5/8" surface casing  
3850' 5 1/2" production casing

Samples: 10' wet and dry, 2900' to RTD

Drilling Time: 2800' to RTD

Electric Logs: Cased Hole Solutions "Jason Cappellucci"  
CNL/CDL, DIL, MEL

Drillstem Tests: Four, Diamond Testing, Inc. "John Riedl"

Problems: None

Remarks: After DST #1 gas detector was inaccurate due to  
high amounts of oil and gas in the mud system.

## Formation Tops

<b>Formation</b>	<b>Globe Operating, Inc. DeWerff #1 Sec. 32 T22s R12w 330' FSL &amp; 2539' FWL</b>
Anhydrite	<b>656', +1196</b>
Base	<b>685', +1167</b>
Topeka	<b>2910', -1058</b>
Heebner	<b>3180', -1328</b>
Toronto	<b>3196', -1344</b>
Douglas	<b>3214', -1362</b>
Brown Lime	<b>3314', -1462</b>
Lansing	<b>3332', -1480</b>
BKC	<b>3375', -1723</b>
Viola	<b>3613', -1761</b>
Simpson	<b>3708', -1856</b>
Arbuckle	<b>3766', -1914</b>
LTD	<b>3851', -1999</b>
RTD	<b>3850', -1998</b>

## Sample Zone Descriptions

- LKC “A-zone” (3332’, -1480): Not Tested**  
 Ls – Fine to sub-crystalline, oolitic in part with poor oolitic and scattered poor vuggy porosity, light spotted oil stain in porosity, mostly dense, no show of free oil, light yellow fluorescents, good cut, 45 units hotwire.
- LKC “B-zone” (3358’, -1506): Covered in DST #1**  
 Ls – Fine to sub-crystalline, oolitic with poor to fair oomoldic and scattered poor inter-crystalline porosity, light to fair oil stain with light spotted saturation, fair show of free oil, good gassy odor, fair yellow fluorescents, good cut, 80 units hotwire.
- LKC “D-zone” (3368’, -1516): Covered in DST #1**  
 Ls – Fine crystalline with scattered poor to fair inter-crystalline and slight vuggy porosity, light oil stain in porosity, slight show of free oil, fair odor, light yellow fluorescents, fair cut, 35 units hotwire.
- LKC “E-zone” (3399’, -1547): Covered in DST #1**  
 Ls – Sub-crystalline, oolitic with poor oolitic porosity, light brown oil stain in porosity, no show of free oil, light yellow fluorescents, 46 units hotwire.

- LKC “F-zone” (3406’, -1554): Covered in DST #1**  
 Ls – Fine crystalline, oolitic with fair to good oomoldic and oolitic porosity, light to fair oil stain with light saturation, fair show of free oil, light visible gas bubbles, good yellow fluorescents, good cut, 125 units hotwire.
- LKC “I-zone” (3485’, -1633): Covered in DST #2**  
 Ls – Fine crystalline, oolitic with poor oolitic and oomoldic porosity, light to fair oil stain, slight show of free oil when broken, light yellow fluorescents, good cut.
- LKC “J-zone” (3500’, -1648): Covered in DST #2**  
 Ls – Fine crystalline, oolitic packstone with fair to good oolitic and oomoldic porosity, light to good oil stain with fair spotted saturation, good show of free oil, fair odor, fair yellow fluorescents, good cut.
- LKC “K-zone” (3529’, -1677): Covered in DST #2**  
 Ls – Fine crystalline, oolitic with fair to good oomoldic and scattered oolitic porosity, light to good oil stain and saturation, fair show of free oil, light yellow fluorescents, good cut.
- Viola (3613’, -1761): Covered in DST #3**  
 Chert – Angular in part, weathered with fair to good vuggy porosity, light to fair oil stain, fair show of free oil, good odor, good yellow fluorescents, good cut.
- Simpson (3708’, -1856): Not Tested**  
 Dolo – Fine to very fine crystalline with very poor inter-crystalline porosity, light spotted oil stain, no show of free oil, few gas bubbles visible, bright yellow fluorescents, very dense.  
 Ss – Quartz, frosted, fine grained with poor inter-granular porosity, light spotted oil stain in cluster, no show of free oil, fair yellow fluorescents, friable in part, very shaly.
- Reworked Arbuckle (3737’, -1885): Covered in DST #4**  
 Dolo – Fine to medium rhombic crystalline with poor to scattered fair inter-crystalline and vuggy porosity, light oil stain with spotted light saturation, slight show of free oil when broken, good odor, fair yellow fluorescents, slight green shale inclusion.
- Arbuckle (3766’, -1914): Not Tested**  
 Dolo – Fine to medium rhombic crystalline with poor oolitic and inter-crystalline porosity, light tarry spotted stain in porosity, slight show of free oil, mostly barren, oolitic chert.

## Drill Stem Tests

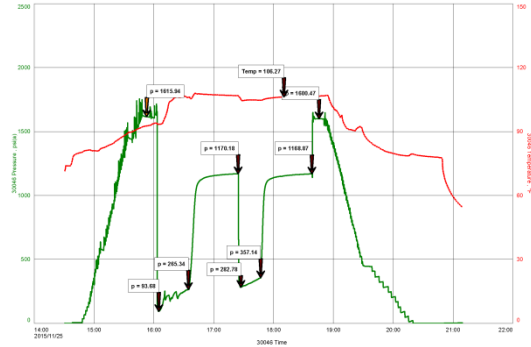
Diamond Testing, Inc.  
"John Riedl"

### DST #1 LKC B thru F zones

Interval (3346' – 3432') Anchor Length 86'

IHP	– 1616 #	
IFP	– 30" – B.O.B. 30 sec.	94-265 #
ISI	– 45" – B.O.B. 10 sec.	1170 #
FFP	– 30" – B.O.B. on open	283-357 #
FSI	– 45" – B.O.B. on shut	1169 #
FHP	– 1600 #	
BHT	– 106°F	

Recovery:      GTS 25 min. Gauge 30 MCF  
                     250' SOCGM                      2% Oil  
                     750' GCO                              50% Oil

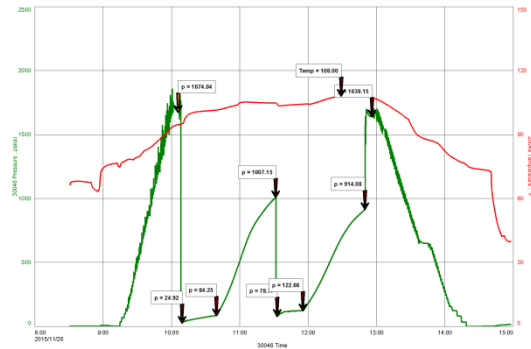


### DST #2 LKC I thru K zones

Interval (3475' – 3545') Anchor Length 80'

IHP	– 1674 #	
IFP	– 30" – B.O.B. 1 min.	25-84 #
ISI	– 45" – Built to 8 in.	1007 #
FFP	– 30" – B.O.B. on open	79-122 #
FSI	– 45" – Built to 5 in.	914 #
FHP	– 1640 #	
BHT	– 108°F	

Recovery:      2000' GIP  
                     300' GMO                              35% Oil

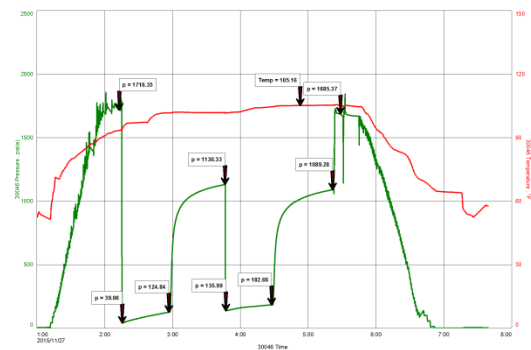


### DST #3 Viola

Interval (3574' – 3634') Anchor Length 60'

IHP	– 1716 #	
IFP	– 45" – Built to 5 in.	39-125 #
ISI	– 45" – Dead	1130 #
FFP	– 45" – Built to 6 in.	136-183 #
FSI	– 45" – Dead	1089 #
FHP	– 1685 #	
BHT	– 105°F	

Recovery:      360' Mud





## Summary

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

### Recommended Perforations

In order of completion

#### Primary:

Arbuckle	3770' – 3772'	Not Tested
Simpson	3727' – 3734'	Not Tested

#### Secondary:

Viola	3613' – 3636'	DST #3
LKC K – zone	3530' – 3534'	DST #2
LKC J – zone	3501' – 3503'	DST #2
	3510' – 3512'	
LKC F – zone	3408' – 3416'	DST #1
LKC B – zone	3316' – 3318'	DST #1

#### Before Abandonment:

LKC I – zone	3488' – 3492'	DST #2
LKC G – zone	3427' – 3430'	Not Tested
LKC E – zone	3400' – 3402'	DST #1
LKC A – zone	3338' – 3340'	Not Tested

Respectfully Submitted,

Jason T Alm  
Hard Rock Consulting, Inc.