# **Geological Report**

DK Operating, Inc.
Whitley #3-13
1092' FSL & 523' FEL
Sec. 13 T20s R23w
Ness County, Kansas



DK Operating, Inc.

# **General Data**

Well Data:	DK Operating, Inc. Whitley #3-13 1092' FSL & 523' FEL Sec. 13 T20s R23w Ness County, Kansas API # 15-135-25781-0000
Drilling Contractor:	Pickrell Drilling Rig #1
Geologist:	Jason T Alm
Spud Date:	May 29, 2014
Completion Date:	June 5, 2014
Elevation:	2210' Ground Level 2220' Kelly Bushing
Directions:	Bazine KS, South 6 mi. to 70 Rd. West 6 mi. to Y Rd. South 2 ½ mi. West into location.
Casing:	260' 8 5/8" surface casing
Samples:	10' wet and dry, 3900' to RTD
Drilling Time:	3500' to RTD
Electric Logs:	None
Drillstem Tests:	Three, Trilobite Testing, Inc. "Jim Svaty"
Problems:	None
Remarks:	None

# **Formation Tops**

Formation	DK Operating, Inc. Whitley #3-13 Sec. 13 T20s R23w 1092' FSL & 523' FEL
Anhydrite	1417', +803
Base	1453', +767
Heebner	3661', -1441
Lansing	3710', -1490
BKc	4028', -1808
Pawnee	4154', -1934
Fort Scott	4222', -2002
Cherokee	4246', -2026
Mississippian	4314', -2094
Osage	4326', -2106
RTD	4351', -2131

# **Sample Zone Descriptions**

### Fort Scott (4222', -2002): Covered in DST #1

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

### Mississippian Osage (4326', -2106): Covered in DST #2,3

 $\Delta$  – Dolo – Fine sucrosic crystalline with poor scattered intercrystalline and vuggy porosity, chert, triptolic, weathered with good vuggy porosity, light to fair oil stain in porosity, fair show of free oil, good odor, light spotted yellow fluorescents.

#### **Drill Stem Tests**

Trilobite Testing, Inc. "Jim Svaty"

#### DST #1 Fort Scott

Interval (4188' – 4250') Anchor Length 62'

IHP -2097 #

- 45" - Built to 3 in. IFP 22-54 #

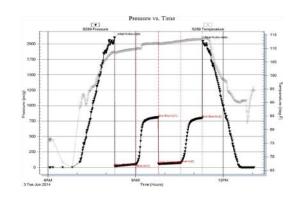
ISI - 45" - Dead 809 #

60-76# FFP -45" – Built to 2 in. - 45" - Dead 798# FSI

FHP -2042 #

BHT  $-113^{\circ}F$ 

Recovery: 118' OCM 5% Oil



#### Mississippian Osage

Interval (4265' – 4345') Anchor Length 80'

IHP -2134 #

IFP -45" – Built to 4  $\frac{3}{4}$  in. 26-70#

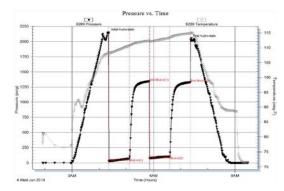
- 45" - Dead ISI 1343 #

FFP -45" – Built to 3 in. 74-105 #

- 45" - Dead FSI 1329 #

FHP - 2028 #

BHT  $-115^{\circ}F$ 



Recovery: 1' Clean Oil

> 6' OCM 30% Oil

174' WOCM 20% Oil, 10% Water

#### Mississippian Osage

Interval (4345' – 4351') Anchor Length 6'

**IHP** -2127 #

IFP -30" - B.O.B. 12 min. 22-182 #

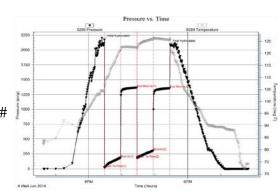
- 30" - W.S.B. ISI 1367 #

FFP -30" - B.O.B. 12 min. 177-300 #

- 30" - Dead FSI 1357 #

FHP **- 2086 #** 

BHT  $-125^{\circ}F$ 



Recovery: 15' Clean Oil

68' OSWCM 1% Oil, 29% Water

552' MCW 95% Water

# **Structural Comparison**

	DK Operating, Inc.	Mull Drilling		Pickrell Drilling	
	<b>Whitley #3-13</b>	Whitley #1		Stairett A #1	
	Sec. 13 T20s R23w	Sec. 13 T20s R23w		Sec. 18 T20s R22w	
Formation	1092' FSL & 523' FEL	C NE SE		C NW SW	
Anhydrite	1417', +803	1416', +806	(-3)	1418', +805	<b>(-2)</b>
Base	1453', +767	4151', +771	(-5)	NA	NA
Heebner	3661', -1441	3658', -1436	(-5)	3665', -1442	(+1)
Lansing	3710', -1490	3706', -1484	<b>(-6)</b>	3711', -1488	(-2)
BKc	4028', -1808	NA	NA	NA	NA
Pawnee	4154', -1934	NA	NA	4154', -1931	(-3)
Fort Scott	4222', -2002	4223', -2001	(-1)	4223', -2000	(-2)
Cherokee	4246', -2026	NA	NA	NA	NA
Mississippian	4314', -2094	4309', -2087	(-7)	4313', -2090	(-4)
Osage	4326', -2106	4327', -2105	<b>(-1)</b>	4325', -2102	<b>(-4)</b>

# **Summary**

The location for the Whitley #3-13 was found via 3-D seismic survey. The new well ran structurally as expected via the survey. Three Drill Stem Tests were conducted all of which were negative. After all gathered data had been examined the decision was made to plug and abandon the Whitley #3-13 well.

Respectfully Submitted,

Jason T Alm Hard Rock Consulting, Inc.