

BEREXCO LLC

MICHAEL 5-22

SE NE SEC 22 T1S R36W

RAWLINS COUNTY, KANSAS

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SUMMARY

The Berexco LLC Michael 5-22 in Rawlins County, Kansas spud October 22, 2013 and reached a total depth of 4525' on October 31, 2013. The test drilled below the below the Lansing-Kansas City F zone for rathole but did not penetrate the Pennsylvanian Pawnee. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Missourian Lansing-Kansas City carbonate benches, which are productive in nearby wells. A secondary zone of interest was the Virgilian Oread Limestone. The Michael 5-22 was drilled using seismic and nearby well control.

Evaluation of the primary zones of interest was by drill stem testing after sample analysis and correlation. Seven DSTs were run based on sample shows.

Lansing-Kansas City

DST 1 in the Oread recovered 857 ft of clean oil and 858 ft of gassy oil and mud with very little water. Samples were fossiliferous grainstone with fair interparticle porosity, scattered oil staining, and good cuts.

DST 2 in the Lansing A was run after moldic porosity with spotty black oil was observed in cuttings. Recovery was 465 ft of gassy clean oil and 73 ft of gassy mud cut oil. The Lansing A exhibited good flow pressures. Wireline logs confirmed the good porosity.

The Lansing B exhibited grainstone with fair to good porosity, live brown oil stain, and very good cuts. DST 3 recovered 93 ft of oil and oil cut mud with good flow pressures. Wireline logs show 2 ft of porosity.

DST 4 in the Upper Lansing C was based on good sample shows of oil and good cuts in a grainstone. DST 4 was curtailed early after a 30-min flow and 20-min shut-in. During the initial flow the hole would not stay full; after pumping was stopped the DST tool was pulled. Nearly 300 B of mud were lost but the test recovered 360 ft of oil and oil cut mud.

The wellbore was deepened 21 ft and DST 5 was run over the Lower Lansing C porosity. The Lower C porosity was a fossiliferous grainstone with fair intergranular porosity, spotty live black oil staining, and a good milky cut. DST 5 recovered 240 ft of oil and oil cut mud. Flow pressures were low.

Another 24 ft of drilling revealed the Lansing D was a tight mudstone with poor sample shows. DST 6 recovered 110 ft of oil-specked watery mud indicating slight porosity that was confirmed by electric logs.

Lansing E samples revealed a grainstone with scattered oil specks along with poor intergranular and poor vuggy porosity. DST 7 recovered 360 ft of gassy oil and oil cut mud. Electric logs showed fair porosity.

The Lansing F limestone was tight with no sample shows.

Oil Well Completion

After wireline logs the Michael 5-22 was cased with 5 ½" production casing for completion as an oil producer.

Peter J. Vollmer
Consulting Wellsite Geologist, WPG #3369
November 2013

Berexco LLC
Michael 5-22

WELL DATA

OPERATOR: Berexco, LLC
2020 North Bramblewood Drive
Wichita, Kansas 67206

WELL NAME: Michael 5-22

SURFACE LOCATION: 1650' FNL & 330' FEL
SE NE Sec. 22, T1S, R36E
Rawlins County, Kansas

LATITUDE & LONGITUDE: 39.9545514, -101.3370057

BOTTOM HOLE LOCATION: Vertical Hole

ELEVATIONS: 3252' GL 3265' KB

API NUMBER: 15-153-20955

BASIN: Mid-Continental Arch

FIELD: Wildcat

HOLE SIZE: 12 ¼" to 310'; 7 7/8" to 4525'

CASING: 8 5/8" J-55 24# STC set to 310' KB

SPUD DATE: October 22, 2013

TOTAL DEPTH DATE: October 31, 2013

TOTAL DEPTH: 4525' Rig TD 4516' Log TD

LAST FORMATION: Lansing-Kansas City F

WELL STATUS: Ran 5 ½" production casing for oil well completion

OPERATOR REPRESENTATIVE: Dana Wreath - Vice President

WELLSITE GEOLOGIST: Peter J. Vollmer

FORMATION TOPS

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3265
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1131	1131	+2134
Fort Hays Ls Mbr	N/A	1616	1616	+1649
Carlile Sh	N/A	1710	1710	+1555
Dakota	N/A	2222	2222	+1043
Cheyenne	N/A	2550	2550	+715
Anydrite	3166	3122	3122	+143
Base Anydrite	3200	3159	3159	+106
Foraker	3758	3756	3756	-491
Topeka	3984	3974	3974	-709
Oread	4086	4083	4083	-818
Lansing-Kansas City				
"A"	4189	4188	4188	-923
"B"	4247	4245	4245	-980
"C"	4308	4306	4306	-1041
"D"	4352	4352	4352	-1087
"E"	4397	4397	4397	-1132
"F"	4437	4434	4434	-1169
TD Driller	4525			
TD Logger		4516	4516	-1251

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4525' TD. Depths are rig depths except where noted as wireline.

3500' - 3650'	SHALE: red, firm, very silty, sandy in part.
3650' - 3655'	LIMESTONE: gray to dark gray, firm, black algal stain, chalky, trace porosity no shows.
3655' - 3675'	SHALE: greenish gray, firm, platy, non calcareous, fossil fragment
3675' - 3712'	SHALE: red, grayish green, firm, silty, limestone stringers
3712' - 3725'	LIMESTONE: tan, white, firm, cryptocrystalline, fossil fragment, tight.
3725' - 3758'	SHALE: red, firm, silty, limestone stringers.
FORAKER	SAMPLE TOP: 3758' LOG TOP: 3756' SUBSEA: -491'
3758' - 3774'	LIMESTONE white, soft, very sandy, very chalky, fossil fragments, poor porosity, spotty black dead stain with thin SHALE: gray to dark gray, firm, blocky, calcareous.
3774' - 3796'	LIMESTONE: light gray, firm, chalky, sandy, fossil fragment, poor porosity, no show.
3796' - 3805'	SANDSTONE: white, fine grain, rounded, well sorted, calcareous cement, fair porosity, no show.
3805' - 3878'	SHALE: red, gray, soft, silty with thin LIMESTONE: white, firm chalky.
3878' - 3938'	SHALE: gray, firm, platy, with LIMESTONE: very light brown, grayish brown, tan hard, cryptocrystalline, argillaceous, fossil fragments, tight, no shows.
3938' - 3952'	LIMESTONE: light yellowish brown, tan, packstone, oolites, algal material, fossil fragments, occasional poor porosity, no show.
3952' - 3984'	SHALE: red, grayish green, maroon, mottled, soft, blocky, non calcareous.

LITHOLOGY AND SHOWS

TOPEKA	SAMPLE TOP: 3984' LOG TOP: 3974' SUBSEA: -709'
3984' - 3996'	LIMESTONE: white, firm, chalky, poor porosity, no shows with interbedded SHALE as above.
3996' - 4012'	LIMESTONE white, occasional light pink, light orange, soft, very chalky, fossil fragments, algal material, poor porosity, spotty black dead oil stain with thin SHALE: red, firm, blocky, calcareous.
4012' - 4030'	SANDY LIMESTONE: white to light tan, friable to hard, dense, with nodular Sandstone inclusions, SANDSTONE: light gray, very fine grained, rounded, calcareous cement/matrix, tight, no shows.
4030' - 4050'	SHALE: reddish brown, firm, blocky, non calcareous, silty to sandy in part.
4050' - 4055'	LIMESTONE: white to light orange, hard, cryptocrystalline, trace orange chert, tight, no shows.
4055' - 4085'	SHALE: maroon, reddish brown, firm, blocky, non calcareous, silty to sandy in part.
OREAD	SAMPLE TOP: 4086' LOG TOP: 4083' SUBSEA: -818'
4085' - 4089'	LIMESTONE: cream to white, firm to hard, mudstone to wackestone, very chalky, algal stain, no visible porosity, no show.
4089' - 4109'	LIMESTONE: cream to white, firm to hard, predominant chalky and tight, occasional wackestone to grainstone, fossils (Crinoids, Brachiopods), tight to rare poor interparticle porosity, rare black to dark brown live oil stain, good milky cut (two pieces).
4109' - 4118'	SHALE: dark gray to black, firm, fissile, carbonaceous, gas odor.
4118' - 4156'	SHALE red, green, gray, firm, blocky, with thin LIMESTONE brown, very hard, very dense.
4156' - 4170'	LIMESTONE: white to reddish brown, mottled, firm to hard, argillaceous, interbedded red silty Shale.
4170' - 4190'	SHALE: gray to dark gray, firm, platy, non calcareous.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "A"

SAMPLE TOP: 4189' LOG TOP: 4188' SUBSEA: -923'

- 4190' - 4198' LIMESTONE: white, light gray, firm, mudstone to grainstone, locally abundant fossils, fair moldic porosity, spotty live thick black oil, good milky yellow cut, free black heavy oil.
- 4198' - 4210' LIMESTONE: white, light gray, firm, mudstone to packstone, scattered fossils, black algal material, trace moldic porosity, spotty live thick black oil, good milky yellow cut, free black heavy oil.
- 4210' - 4218' SANDSTONE: light brown to reddish brown, friable, very fine grained, well rounded, clay fill, calcareous, no visible porosity, no show
- 4220' - 4232' SHALE: red, soft, blocky, non calcareous, silty.
- 4232' - 4238' ARGILLACEOUS LIMESTONE: light gray to reddish brown, firm, cryptocrystalline, argillaceous, dead oil, tight, red Shale partings.
- 4238' - 4247' SHALE: red, maroon, firm, blocky.

LANSING- KANSAS CITY "B"

SAMPLE TOP: 4247' LOG TOP: 4245' SUBSEA: -980'

- 4247' - 4258' LIMESTONE: white, firm, grainstone, oolites, fossil, fair intergranular and pin-point vuggy porosity, even to spotty live black oil, free oil, dull yellowish white cut, good show.
- 4258' - 4268' SHALE: dark gray, firm, blocky to fissile.
- 4268' - 4310' SHALE: red, gray, firm, blocky, slightly calcareous, thin white chalky Limestone partings, locally sandy/silty.

LANSING- KANSAS CITY "C"

SAMPLE TOP: 4308' LOG TOP: 4306' SUBSEA: -1041'

- 4310' - 4322' LIMESTONE: white, firm, grainstone, very fossil, fair intergranular and pinpoint vuggy porosity, spotty live black oil, free oil, dull yellowish white cut, good show.
- 4322' - 4326' SHALE: dark gray, firm, blocky.
- 4326' - 4342' LIMESTONE: white to dark gray, mottled in part, hard to firm, grainstone, fossiliferous, gray argillaceous inclusion at top, fair intergranular porosity, spotty

LITHOLOGY AND SHOWS

live black oil, free oil, good milky cut, fair to good show.

4342' - 4352'

SHALE: red, dark gray, firm, blocky, slightly calcareous.

LANSING-
KANSAS CITY "D"

SAMPLE TOP: 4352' LOG TOP: 4352' SUBSEA: -1087'

4352' - 4362'

LIMESTONE: white, firm, grainstone to mudstone, fossil fragment (Crinoid), poor to trace intergranular porosity, trace spotty black oil, dull yellowish white cut, poor show.

4362' - 4376'

SHALE: dark gray, firm, blocky, white Limestone partings.

4376' - 4397'

SHALE: dark reddish brown grayish green, maroon, firm, blocky, non calcareous, silty, pyrite.

LANSING-
KANSAS CITY "E"

SAMPLE TOP: 4397' LOG TOP: 4397' SUBSEA: -1132'

4397' - 4408'

LIMESTONE: white, firm, mudstone to grainstone, very fossiliferous in part, secondary clear calcareous crystals in vugs, trace intergranular and occasional poor vuggy porosity, scattered black oil specks and stain, dull milky cut, poor to fair show.

4408' - 4414'

LIMESTONE: white, hard, chalky, tight, no shows.

4414' - 4426'

SHALE: dark gray to black, firm, blocky, calcareous, fossil (Brachiopod), carbonaceous in part.

4426' - 4437'

SHALE: dark reddish brown to maroon, greenish gray to gray, mottled in part, firm, blocky, non calcareous, silty.

LANSING-
KANSAS CITY "F"

SAMPLE TOP: 4437' LOG TOP: 4434' SUBSEA: -1169'

4437' - 4452'

LIMESTONE: cream to white, firm to hard, mudstone to wackestone, scattered fossil fragment, clean, dense, tight, no shows

LITHOLOGY AND SHOWS

4452' - 4486'	SHALE: dark gray, firm, blocky, slightly to non calcareous, fossil fragment, w/LIMESTONE: gray to white, firm to hard, mudstone, occasional fossil fragment, clear calcareous fill in vugs, argillaceous in part, tight, no show.
4486' - 4494'	LIMESTONE: white to light gray, firm, mudstone, fossil fragment, tight, no shows.
4494' - 4525' TD	SHALE: reddish brown, firm, platy, non to very slightly calcareous, thin Limestone partings

SERVICES

CONTRACTOR:	Beredco Drilling Inc., Rig 2	
Toolpusher:	Milo Salinas	
DRILLING FLUIDS:	Morgan Mud, Inc.	McCook, ND
Mud Type:	Freshwater Chemical	308-340-5946
Engineer:	Troy Van Pelt	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc.	Hays, KS
Tester:	Bob Hamel, Ryan Nichols DST 1: 4008' - 4122' Oread DST 2: 4110' - 4222' Lansing-KC "A" DST 3: 4208' - 4252' Lansing-KC "B" DST 4: 4256' - 4322' Lansing-KC "C" DST 5: 4322' - 4343' Lansing-KC "C" DST 6: 4342' - 4366' Lansing-KC "D" DST 7: 4360' - 4416' Lansong-KC "E"	785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: 3100' - TD Micro: Surface casing to TD Engineer: Robert Barnhard	Hays, KS 785-625-3858