BEREXCO LLC

MICHAEL 8-22

SE NE NE SEC 22 T1S R36W

RAWLINS COUNTY, KANSAS

SUMMARY

The Berexco LLC Michael 8-22 in Rawlins County, Kansas spud April 8, 2014 and reached a total depth of 4480' on April 16, 2014. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Missourian Lansing-Kansas City carbonate benches, which produce in the East Fork field. A secondary zone of interest was the Oread Limestone. The Michael 8-22 was drilled using seismic and nearby well control.

Evaluation of the primary zones of interest was by drill stem testing after sample analysis. Five DSTs were run.

Foraker and Wabaunsee

There were no shows in the Foraker or Wabaunsee, both clean non-porous limestone.

Oread and Lansing-Kansas City

DST 1 in the Oread recovered 90 ft of oil spotted mud with poor flow pressures and shut-in pressures indicating depletion from nearby wells. Samples were predominantly mudstone with locally fossiliferous wackestone displaying very poor interparticle and vuggy porosity, occasional scattered black oil staining with rare blooming cuts and slow streaming cuts.

DST 2 in the Lansing A recovered 10 ft of mud with very poor flow pressures. Samples displayed occasional heavy black oil with no to trace porosity in cuttings.

DST 3 in the Lansing B recovered 5 ft of mud. The poor flow pressures indicated a non-porous B zone, also reflected on wireline logs. Samples exhibited fossiliferous grainstone and mudstone with trace to poor interparticle and vuggy porosity, good live black oil staining, and good cuts in the upper few feet. There were no shows below the first few feet.

DST 4 in the Lansing C recovered 95 ft of clean gassy oil and 90 ft of gassy oil cut mud. Samples were grainstone with fair to poor interparticle and vuggy porosity with abundant live black oil staining, good fluorescence and yellowish white cuts.

The Lansing D samples were non-porous chalky limestone with no shows. No drill stem testing was warranted in the D zone.

DST 5 of the Lansing E recovered 180 ft of oil spotted muddy water. The Lansing E was predominately non-porous chalky limestone with trace to poor vuggy porosity and a scattered show of black oil stain and hydrocarbon cuts.

The Lansing F was non-porous chalky limestone with no sample shows.

Oil Well Completion

5 ½" production casing was run to complete the Michael 8-22 as an oil producer.

Peter J. Vollmer
Consulting Wellsite Geologist, WPG #3369
April 2014

WELL DATA

OPERATOR:	Berexco LLC 2020 North Bramblewood Drive Wichita, Kansas 67206
WELL NAME:	Michael 8-22
SURFACE LOCATION:	990’ FNL & 330’ FEL SE NE NE Sec. 22, T1S, R36W Rawlins County, Kansas
LATITUDE & LONGITUDE:	39.9563631, -101.3370246 (From State, calculated from footages)
BOTTOM HOLE LOCATION:	Vertical hole
ELEVATIONS:	3243’ GL 3256’ KB
API NUMBER:	15-153-21002
BASIN:	Mid-Continental Arch
FIELD:	East Fork
HOLE SIZE:	12 ¼” to 314’; 7 7/8” to 4480’
CASING:	8 5/8” J-55 24# STC set to 314’ KB
SPUD DATE:	April 8, 2014
TD DATE:	April 16, 2014
TOTAL DEPTH:	4480’ Rig TD 4478’ Log TD
LAST FORMATION:	Pennsylvanian Lansing-Kansas City
WELL STATUS:	Ran 5 1/2” production casing
OPERATOR REPRESENTATIVE:	Dana Wreath - Vice President
WELLSITE GEOLOGIST:	Peter J. Vollmer

FORMATION TOPS

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3256
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1197	1197	+2059
Fort Hays Ls Mbr	N/A	1678	1678	+1578
Carlile Sh	N/A	1724	1724	+1532
Dakota	N/A	2120	2120	+1136
Cheyenne	N/A	2670	2670	+586
Blaine	N/A	3008	3008	+248
Stone Corral Anhydrite	3158	3160	3160	+96
Base Anhydrite	3190	3186	3186	+70
Neva	3646	3639	3639	-383
Foraker	3752	3748	3748	-492
Wabaunsee	3908	3908	3908	-652
Topeka	3969	3968	3968	-712
Deer Creek Sand	4003	4000	4000	-744
Oread	4079	4078	4078	-822
Lansing-Kansas City				
"A"	4184	4180	4180	-924
"B"	4240	4236	4236	-980
"C"	4301	4296	4296	-1040
"D"	4347	4340	4340	-1084
"E"	4388	4382	4382	-1126
"F"	4427	4422	4422	-1166
TD Driller	4480			
TD Logger		4478	4478	-1222

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4480' TD. Depths are rig depths except where noted as wireline.

3500' - 3558'	SHALE: light reddish brown to reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous.
3558' - 3586'	SANDSTONE: light gray to reddish brown, friable to firm, very fine grained grading to silt, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity no shows.
3586' - 3634'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace tan Limestone.
3634' - 3646'	SANDSTONE: very light gray to off white, friable to firm, very fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, glauconite, no visible porosity no shows.

NEVA	SAMPLE TOP: 3646'	LOG TOP: 3639'	SUBSEA: -383'

3646' - 3652'	LIMESTONE: white to light gray, firm to hard, chalky, fossil fragment (Brachiopod, Fusulinid), black algal stain, tight, no shows.
3652' - 3674'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, with/trace interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3674' - 3690'	SANDSTONE: very light gray to white to red brown, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, tight to trace porosity, no shows.
3690' - 3714'	LIMESTONE: light gray to gray to grayish brown, hard, cryptocrystalline, occasional slightly argillaceous, tight, no shows.
3714' - 3752'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.

FORAKER	SAMPLE TOP: 3752'	LOG TOP: 3748'	SUBSEA: -492'

3752' - 3762'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragments, tight, no show.

LITHOLOGY AND SHOWS

3762’ - 3774’	SHALE: gray to greenish gray, firm, blocky, non to slightly calcareous, fossil fragments, medium gray Limestone stringers.
3774’ - 3792’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragments, algal stain, tight to trace intercrystalline porosity, no shows.
3792’ - 3802’	SANDSTONE: very light gray to white, friable, very fine grained, subangular to subrounded, well sorted, calcareous cement, clay fill, black specks, tight to trace porosity, no shows.
3802’ - 3854’	SHALE: reddish brown, soft to firm, subblocky, non calcareous, occasional silty, occasional light gray Limestone stringers.
3854’ - 3876’	SHALE: dark gray to black, firm, fissile to blocky, non calcareous, carbonaceous in part, fossil fragments (Brachiopod).
3876’ - 3908’	SHALE: reddish brown, soft to firm, subblocky, non calcareous, occasional silty, occasional light gray chalky Limestone stringers.

WABAUNSEE	SAMPLE TOP: 3908’	LOG TOP: 3908’	SUBSEA: -652’

3908’ - 3928’	LIMESTONE: white to light gray, with light reddish brown mottled, soft to firm, cryptocrystalline, chalky texture, reddish brown SHALE partings, occasional fossil fragments, tight, no shows.
3928’ - 3941’	SHALE: brown red, soft to firm, blocky, non to slightly calcareous, with interbedded LIMESTONE: white to light gray, occasional light reddish brown mottled, hard to firm, cryptocrystalline, fossil fragments, tight, no shows.
3941’ - 3969’	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.

TOPEKA	SAMPLE TOP: 3969’	LOG TOP: 3968’	SUBSEA: -712’

3969’ - 3976’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments (Fusulinids), sparry calcareous, Shale partings, tight, no shows.
3976’ - 3986’	SHALE: gray, firm, platy, non to slightly calcareous, dull.
3986’ - 4002’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments, clear calcareous fill in vugs, opaque chert, tight, no shows.

LITHOLOGY AND SHOWS

DEER CREEK SAND	SAMPLE TOP: 4003’	LOG TOP: 4000’	SUBSEA: -744’

4002’ - 4022’	SANDSTONE: light gray to light grayish brown, friable to soft, very fine grained, well rounded, well sorted, calcareous, clay filled, plant remains, predominant loose grains, no visible porosity, no show.
4022’ - 4040’	LIMESTONE: white to light red brown, mottled, firm to hard, mudstone, very chalky, slightly argillaceous in part, interbedded reddish brown Shale partings, tight, no shows.
4040’ - 4079’	SHALE: reddish brown, brownish maroon, gray, mottled in part, firm, blocky, occasional slightly calcareous, non to slightly silty in part, clayey to sticky.

OREAD	SAMPLE TOP: 4079’	LOG TOP: 4078’	SUBSEA: -822’

4079’ - 4098’	LIMESTONE: cream to white, firm to hard, wackestone to packstone, fossil fragments, scattered black oil stain, tight to trace interparticle and vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming cuts, shows decreasing at base, fair show.
4098’ - 4104’	SHALE: dark gray to black, firm, fissile, slightly to very carbonaceous, non to slightly calcareous, fossil fragment, gas odor.
4104’ - 4126’	LIMESTONE: gray to light gray, occasional dark gray, firm to hard, mudstone, occasional fossil, slightly argillaceous in part, tight, no show.
4126’ - 4152’	SHALE: dark gray to gray, firm, fissile, slightly carbonaceous in part, non to slightly calcareous, fossil fragments.
4152’ - 4162’	LIMESTONE: gray to light gray, firm to hard, mudstone, occasional fossil, slightly argillaceous in part at base, tight, no show.
4162’ - 4184’	SHALE: gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, sub waxy to earthy.

LANSING- KANSAS CITY “A”	SAMPLE TOP: 4184’	LOG TOP: 4180’	SUBSEA: -924’

4184’ - 4204’	LIMESTONE: white to cream, firm to hard, mudstone to grainstone, occasional interclasts and peloids, fossil fragments (Crinoid, Fusulinid, Brachiopod), abundant black heavy oil stain, trace to poor interparticle porosity, fair vuggy porosity, bright yellowish white fluorescence, instant yellowish white cuts, good show.

LITHOLOGY AND SHOWS

4204’ - 4208’	SHALE: gray to dark gray, firm, blocky, non to slightly calcareous.
4208’ - 4216’	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, tight to poor porosity, no show.
4216’ - 4240’	SHALE: gray to reddish brown to maroon, firm, blocky, n to slightly calcareous, silty in part, occasional argillaceous LIMESTONE stringers.

LANSING-
KANSAS CITY “B” SAMPLE TOP: 4240’ LOG TOP: 4236’ SUBSEA: -980’

4240’ - 4256’	LIMESTONE: white, firm to hard, mudstone to packstone, occasional fossil fragments, pyrite, occasional live heavy black oil, predominant tight with trace intergranular porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show at top only.
4256’ - 4270’	SHALE: gray to dark gray, firm, platy to sub fissile, fossil (Brachiopod), slightly carbonaceous in part, Limestone stringers.
4270’ - 4301’	SHALE: brown red to gray to maroon, soft to firm, sub platy, slightly calcareous, occasional silty in part.

LANSING-
KANSAS CITY “C” SAMPLE TOP: 4301’ LOG TOP: 4296’ SUBSEA: -1040’

4301’ - 4316’	LIMESTONE: white to very light gray, firm, mudstone to grainstone, fossil fragments, scattered black heavy oil, poor intergranular and fair vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, with slow streaming cuts, good show.
4316’ - 4327’	SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments, pyrite.
4327’ - 4330’	LIMESTONE: white, firm to hard, mudstone to packstone, occasional fossil fragments, trace heavy black oil, predominant tight with trace intergranular porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, fair show.
4330’ - 4347’	SHALE: gray to dark gray, firm, blocky, Limestone partings.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "D"	SAMPLE TOP: 4347'	LOG TOP: 4340'	SUBSEA: -1084'

4347' - 4358'	LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, chalky texture, trace spotty black oil specks (2 pieces), no visible porosity, dull yellow fluorescence, dull yellowish white cut, very poor show.
4358' - 4370'	SHALE: dark gray to gray, firm, blocky, fossils (Brachiopod), white chalky Limestone partings.
4370' - 4388'	SHALE: dark reddish brown to grayish green to gray, firm, blocky to platy, non calcareous, moderately to very silty, pyrite.

LANSING- KANSAS CITY "E"	SAMPLE TOP: 4388'	LOG TOP: 4382'	SUBSEA: -1126'

4388' - 4404'	LIMESTONE: white to light gray to cream, hard to firm, mudstone to grainstone, predominant chalky texture, occasional very fossiliferous, locally patchy black oil specks, tight to poor vuggy porosity, bright yellowish white fluorescence, blooming yellowish white cut, poor show.
4404' - 4427'	SHALE: dark gray to black to gray, firm, blocky, calcareous, fossil (Brachiopod), very to slightly carbonaceous in part, plant remains, trace pyrite.

LANSING- KANSAS CITY "F"	SAMPLE TOP: 4427'	LOG TOP: 4422'	SUBSEA: -1166'

4427' - 4436'	LIMESTONE: cream to white to light gray, firm to hard, mudstone to wackestone, chalky texture, occasional fossil fragments, very tight, no shows.
4436' - 4444'	SHALE: gray to dark gray, firm, platy, non to slightly calcareous, occasional silty.
4444' - 4464'	SANDSTONE: white, friable to hard, very fine grained grading to coarse silt, rounded, well sorted, calcareous cement, clean, abundant loose grains, fair porosity, no show.
4464' - 4480' TD	SHALE: gray to dark gray, firm, platy to blocky, non to very slightly calcareous, fossil fragment, interbedded white to light gray chalky Limestone.

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:	Dave Lines	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Robert Zodrow DST 1: 4036’ - 4092’ Oread DST 2: 4124’ - 4220’ LKC “A” DST 3: 4202’ - 4260’ LKC “B” DST 4: 4254’ - 4340’ LKC “C” DST 5: 4354’ - 4410’ LKC “E”	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500’ - TD Engineer: Don Schmidt	Hays, KS 785-625-3858