BEREXCO LLC

MICHAEL 1-23

SW NW NW SEC 23 T1S R36W

RAWLINS COUNTY, KANSAS

SUMMARY

The Berexco LLC Michael 1-23 in Rawlins County, Kansas spud February 9, 2014 and reached a total depth of 4520' on February 9, 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. Secondary zones of interest were the Foraker and Oread limestones. The Michael 1-23 was drilled using seismic and nearby well control.

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

Foraker, Oread and Lansing-Kansas City

The Foraker was clean, non-porous limestone without shows.

Oread samples were fossiliferous wackestone with poor interparticle porosity, scattered oil staining, and good cuts. DST 1 in the Oread recovered 200 ft of mud. The drill stem test was deemed a misrun because the tool opened and slid 8 ft but ended short of bottom by 7 ft. The test tool was packed off with drill cuttings and cavings. The hole was cleaned by drilling two feet deeper. DST 2 recovered 238 ft of highly oil cut mud.

The Lansing A displayed fair interparticle and vuggy porosity with abundant heavy black oil stain in cuttings. DST 3 recovered 1158 ft of highly gas cut 19 gravity oil.

The Lansing B exhibited fossiliferous packstone and mudstone with poor to trace vuggy porosity, live black oil staining and good cuts. DST 4 recovered 110 ft of mud with spots of oil. The poor flow pressures and wireline logs indicated a non-porous B zone.

The Lansing C displayed abundant live black oil staining, fluorescence, and cut in packstone with fair to poor interparticle and vuggy porosity. DST 5 recovered 564 ft of gassy oil with a slight mud cut at the bottom plus 188 ft of gas in the drill pipe.

The Lansing D was mudstone with black heavy oil staining but no visible porosity. No drill stem testing was warranted in the D zone alone and the decision was made to drill through the E zone and test the D and E zones together. The Lansing E was predominantly non-porous with only trace pin-point vuggy porosity with a scattered show of black oil and cuts. DST 6 recovered 224 ft of mud and very slightly to slightly oil cut mud. The shut-in and flow pressures were low, probably due to depletion from nearby wells in the E zone.

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

Oil Well Completion

5 ½" production casing was run to complete the Michael 1-23 as an oil producer.

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

WELL DATA

OPERATOR:	Berexco LLC 2020 North Bramblewood Drive Wichita, Kansas 67206
WELL NAME:	Michael 1-23
SURFACE LOCATION:	990’ FNL & 330’FWL SW NW NW Sec. 23, T1S, R36W Rawlins County, Kansas
LATITUDE & LONGITUDE:	39.9563496, -101.3346704 (From State, calculated from footages)
BOTTOM HOLE LOCATION:	Vertical hole
ELEVATIONS:	3271’ GL 3284’ KB
API NUMBER:	15-153-20984
BASIN:	Mid-Continental Arch
FIELD:	East Fork
HOLE SIZE:	12 ¼” to 310’; 7 7/8” to 4520’
CASING:	8 5/8” J-55 24# STC set to 310’ KB
SPUD DATE:	February 19, 2014
TD DATE:	February 9, 2014
TOTAL DEPTH:	4520’ Rig TD 4515’ 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				3284
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1200	1200	+2084
Fort Hays Ls Mbr	N/A	1723	1723	+1561
Carlile Sh	N/A	1770	1770	+1514
Dakota	N/A	2154	2154	+1130
Cheyenne	N/A	2716	2716	+568
Blaine	N/A	3040	3040	+244
Stone Corral Anhydrite	3186	3190	3190	+94
Base Anhydrite	3227	3224	3224	+60
Neva	3671	3674	3674	-390
Foraker	3778	3784	3784	-500
Wabaunsee	3941	3944	3944	-660
Topeka	3994	4000	4000	-716
Deer Creek Sand	4034	4034	4034	-750
Oread	4107	4110	4110	-826
Lansing-Kansas City				
"A"	4212	4212	4212	-928
"B"	4266	4270	4270	-986
"C"	4329	4330	4330	-1046
"D"	4375	4377	4377	-1093
"E"	4417	4418	4418	-1134
"F"	4455	4456	4456	-1172
TD Driller	4520			
TD Logger		4515	4515	-1231

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500’ to 4625’ TD. Depths are rig depths except where noted as wireline.

3500’ - 3590’	SHALE: reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light tan Limestone.
3590’ - 3606’	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.
3606’ - 3671’	SHALE: red, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace tan Limestone.

NEVA SAMPLE TOP: 3671’ LOG TOP: 3674’ SUBSEA: -390’

3671’ - 3678’	LIMESTONE: white to light gray, firm to hard, chalky, fossil fragments, tight, no shows.
3678’ - 3736’	SHALE: red brown, soft to firm, sub blocky, non calcareous, occasional silty, with interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3736’ - 3748’	LIMESTONE: light gray, hard, cryptocrystalline, very slightly sandy, tight, no shows.
3748’ - 3778’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty.

FORAKER SAMPLE TOP: 3778’ LOG TOP: 3784’ SUBSEA: -500’

3778’ - 3788’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, clean, tight, no show.
3788’ - 3800’	SHALE: gray, firm, blocky, non to slightly calcareous, fossil fragments.
3800’ - 3818’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, algal stain, slightly sandy at base, tight to trace intercrystalline porosity, no shows.
3818’ - 3832’	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.

LITHOLOGY AND SHOWS

3832’ - 3896’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray Limestone stringers.
3896’ - 3926’	SHALE: dark gray to black, firm, fissile to blocky, non calcareous, carbonaceous in part, fossil fragments(Brachiopods).

WABAUNSEE	SAMPLE TOP: 3941’	LOG TOP: 3944’	SUBSEA: -660’

3926’ - 3950’	LIMESTONE: white to light reddish brown, mottled, soft to firm, cryptocrystalline, chalky texture, red brown SHALE partings, rare fossil fragment, tight, no shows.
3950’ - 3982’	SHALE: brown red, soft to firm, blocky, n to slightly calcareous, with interbedded LIMESTONE: white to light gray, occasionally light reddish brown mottling, hard to firm, cryptocrystalline, fossil fragments, tight, no shows.
3982’ - 3994’	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.

TOPEKA	SAMPLE TOP: 3994’	LOG TOP: 4000’	SUBSEA: -716’

3994’ - 4002’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments (Fusulinids), sparry calcite, trace black dead oil, tight, no shows.
4002’ - 4018’	SHALE: gray, firm, platy, non to slightly calcareous, dull luster.
4018’ - 4034’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragments, clear calcite fill in vugs, opaque chert, tight, no shows.

DEER CREEK SAND	SAMPLE TOP: 4034’	LOG TOP: 4034’	SUBSEA: -750’

4034’ - 4053’	SANDSTONE: light gray to light grayish brown, friable to soft, very fine grained, well rounded, well sorted, calcareous, clay filled, plant remains, predominantly loose grains, no visible porosity, no show.
4053’ - 4072’	LIMESTONE: white to light reddish brown, mottled, firm to hard, mudstone, very chalky, argillaceous in part, interbedded reddish brown Shale partings, tight, no shows.

LITHOLOGY AND SHOWS

4072’ - 4107’	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: 4107’	LOG TOP: 4110’	SUBSEA: -826’

4107’ - 4130’	LIMESTONE: cream to white, firm to hard, wackestone to packstone, fossil fragments, scattered black to dark brown live oil stain, tight to trace interparticle and vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming cuts, good show.
4130’ - 4136’	SHALE: dark gray to black, firm, fissile, slightly to very carbonaceous, non to slightly calcareous, fossil fragments, gas odor.
4136’ - 4160’	LIMESTONE: gray to light gray, firm to hard, mudstone, rare fossil, slightly argillaceous in part, tight, no show.
4160’ - 4172’	SHALE: reddish brown, gray, firm, blocky, non to slightly calcareous, silty in part.
4172’ - 4190’	LIMESTONE: gray to grayish brown, firm, mudstone, argillaceous, gray Shale partings, tight.
4190’ - 4212’	SHALE: gray to reddish brown to maroon, firm, blocky, non to slightly calcareous.

LANSING- KANSAS CITY “A”	SAMPLE TOP: 4212’	LOG TOP: 4212’	SUBSEA: -928’

4212’ - 4231’	LIMESTONE: white to cream, firm to hard, mudstone to grainstone, occasional interclasts and peloids, fossil fragment, sandy at base, abundant black heavy oil stain, trace to fair interparticle porosity, trace vuggy porosity, bright yellowish white fluorescence, instant yellowish white cuts, very good show.
4231’ - 4232’	SHALE: gray to dark gray, firm, blocky, non to slightly calcareous.
4232’ - 4242’	SANDSTONE: white to light gray to light reddish brown, mottled, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, tight to poor porosity, no show.
4242’ - 4266’	SHALE: dark gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, silty in part.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "B"	SAMPLE TOP: 4266'	LOG TOP: 4270'	SUBSEA: -986'

4266' - 4284'	LIMESTONE: white, firm to hard, mudstone to packstone, occasional fossil fragments, clear calcareous fracture fill, patchy live heavy black oil, predominant tight with trace intergranular porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, fair show.
4284' - 4298'	SHALE: gray to dark gray, firm, platy to fissile, slightly carbonaceous in part.
4298' - 4310'	LIMESTONE: white to light gray, firm, cryptocrystalline, gray Shale partings, fossil fragments, argillaceous in part, trace pyrite, tight, no show.
4310' - 4329'	SHALE: brown red to gray to maroon, firm, platy, slightly calcareous, silty in part.

LANSING- KANSAS CITY "C"	SAMPLE TOP: 4329'	LOG TOP: 4330'	SUBSEA: -1046'

4329' - 4344'	LIMESTONE: white, firm, mudstone to packstone, fossil fragments, abundant black heavy oil, poor intergranular and fair vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, with slow streaming cuts, good show.
4344' - 4357'	SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments.
4357' - 4364'	LIMESTONE: white to dark gray, mottled in part, hard to firm, mudstone to wackestone, fossil, clear calcite fill in vugs, spotty black heavy oil stain, trace intergranular and vuggy porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, good show.
4364' - 4375'	SHALE: gray, firm, blocky.

LANSING- KANSAS CITY "D"	SAMPLE TOP: 4375'	LOG TOP: 4377'	SUBSEA: -1093'

4375' - 4386'	LIMESTONE: light gray to white, firm, grainstone to mudstone, fossil fragments, tight to trace intergranular porosity, trace spotty black oil, dull yellow fluorescence, dull yellowish white cut, poor show.
4386' - 4400'	SHALE: dark gray to gray, firm, blocky, white Limestone partings.

LITHOLOGY AND SHOWS

4400’ - 4417’	SHALE: dark reddish to brown to grayish green to gray, firm, blocky to platy, non calcareous, silty, pyrite, interbedded Limestone.

LANSING-
KANSAS CITY “E” SAMPLE TOP: 4417’ LOG TOP: 4418’ SUBSEA: -1134’

4417’ - 4434’	LIMESTONE: white to light gray, hard to firm, mudstone to wackestone, predominant chalky texture, occasional fossil, patchy black oil specks and stain, tight to trace vuggy porosity, bright yellowish white fluorescence, blooming yellowish white cut, poor to fair show.
4434’ - 4455’	SHALE: dark gray to black, firm, blocky, calcareous, fossils, slightly carbonaceous in part, pyrite.

LANSING-
KANSAS CITY “F” SAMPLE TOP: 4455’ LOG TOP: 4456’ SUBSEA: -1172’

4455’ - 4462’	LIMESTONE: cream to white to light gray, firm to hard, mudstone to wackestone, scattered fossil fragments, trace black dead oil, very tight, no shows.
4462’ - 4473’	SHALE: dark gray to black, firm, blocky, calcareous, fossil (Brachiopod), carbonaceous in part.
4473’ - 4488’	LIMESTONE: cream to white, firm to hard, mudstone, fossil fragment, very chalky, dense, with interbedded dark gray Shale partings, tight, no shows.
4488’ - 4520’ TD	SHALE: gray to dark gray, firm, platy to blocky, non to very slightly calcareous, fossil fragments, 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. Chuck Kreutzer, Jr. DST 1: 4072’ - 4120’ Oread DST 2: 4070’ - 4122’ Oread DST 3: 4154’ - 4250’ LKC “A” DST 4: 4228’ - 4290’ LKC “B” DST 5: 4280’ - 4364’ LKC “C” DST 6: 4382’ - 4434’ LKC “D” & “E”	Hays, KS
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500’ - TD Engineer: Don Schmidt	Hays, KS 785-625-3858