BEREXCO LLC

VADA 2-17

N/2 S/2 SW SW SEC 17 T1S R37W

CHEYENNE COUNTY, KANSAS

SUMMARY

The Berexco LLC Vada 2-17 in Cheyenne County, Kansas spud April 22, 2014 and reached a total depth of 4660' on April 29, 2014. Wellsite geological supervision commenced at 3000'. The primary objective was the Pennsylvanian Pawnee Limestone (Marmaton Group), which produces in South Jones Canyon field. Secondary zones of interests were the Foraker, Oread, and Lansing-Kansas City limestones. The Vada 2-17 was drilled using seismic and nearby well control.

On-site evaluation was by drill stem testing after sample analysis. Three DSTs were run.

Foraker, Oread and Lansing-Kansas City

The Foraker was clean non-porous limestone with dead oil staining.

DST 1 in the Oread recovered 10 ft of mud. Samples were fossiliferous packstone with traces of interparticle and vuggy porosity, scattered oil staining, and good cuts.

The Lansing A was circulated out but only rare oil shows with no visible porosity were noted. No drill stem test was warranted in the Lansing A.

DST 2 in the Lansing B recovered 580 ft of watery mud with oil spots in the top 40 ft. Samples exhibited fair interparticle porosity with spotty black stain.

The Lansing C samples were chalky mudstone with occasional very poor shows of spotty live black and brown oil stain, fluorescence, and cut. The Lansing D samples were mudstone with only a trace of black asphaltic staining and no visible porosity. The Lansing E was nonporous chalky limestone with very spotty oil stain and fair fluorescence and cut. The Lansing F was nonporous limestone with no sample shows. No drill stem testing was warranted in the Lansing, C, D, E or F.

Pawnee

DST 3 in the Pawnee recovered 40 ft of gassy oil and 30 ft of oil cut mud with very poor flow pressures. Samples were grainstone heavily occluded with lime mud. Scattered oil shows with good fluorescence and cuts were noted in vuggy parts of the limited-porosity limestone.

Oil Well Completion

5 ½" production casing was run to complete the Vada 2-17 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:	Vada 2-17
SURFACE LOCATION:	610’ FSL & 660’ FWL N/2 S/2 SW SW Sec. 17, T1S, R37W Cheyenne County, Kansas
LATITUDE & LONGITUDE:	39.9611398, -101.5018218 (From State, calculated from footages)
BOTTOM HOLE LOCATION:	Vertical hole
ELEVATIONS:	3119’ GL 3132’ KB
API NUMBER:	15-023-21389
BASIN:	Mid-Continental Arch
FIELD:	Jones Canyon South
HOLE SIZE:	12 ¼” to 310’; 7 7/8” to 4660’
CASING:	8 5/8” J-55 24# STC set to 310’ KB
SPUD DATE:	April 22, 2014
TD DATE:	April 29, 2014
TOTAL DEPTH:	4660’ Rig TD 4646’ Log TD
LAST FORMATION:	Pennsylvanian Cherokee
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				3132
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1030	1030	+2102
Fort Hays Ls Mbr	N/A	1529	1529	+1603
Carlile Sh	N/A	1622	1622	+1510
Dakota	N/A	2010	2010	+1122
Cheyenne	N/A	2583	2583	+549
Blaine	N/A	2954	2954	+178
Stone Corral Anhydrite	3094	3094	3094	+38
Base Anhydrite	3129	3128	3128	+4
Neva	3537	3548	3548	-416
Foraker	3662	3668	3668	-536
Wabaunsee	3816	3820	3820	-688
Topeka	3876	3884	3884	-752
Deer Creek Sand	N/A	N/A	N/A	N/A
Oread	4023	4020	4020	-888
Lansing-Kansas City				
"A"	4105	4102	4102	-970
"B"	4170	4162	4162	-1030
"C"	4222	4216	4216	-1084
"D"	4262	4256	4256	-1124
"E"	4310	4309	4309	-1177
"F"	4351	4346	4346	-1214
Pawnee	4506	4500	4500	-1368
Cherokee	4562	4558	4558	-1426
TD Driller	4660			
TD Logger		4646	4646	-1514

LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4660' TD. Depths are rig depths except where noted as wireline.

3500' - 3537'	SHALE: light reddish brown to reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous.

NEVA	SAMPLE TOP: 3537'	LOG TOP: 3548'	SUBSEA: -416'

3537' - 3544'	LIMESTONE: white to light gray, hard, cryptocrystalline, slightly chalky, scattered black Algal stain (dead oil), no visible porosity, no show.
3544' - 3552'	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.
3552' - 3574'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, well/trace interbedded LIMESTONE: white to light gray, firm to hard, cryptocrystalline, tight, no shows.
3574' - 3584'	Silty Sandstone: reddish brown, soft to very friable, very fine grained grading to silt, angular, moderately sorted, non to slightly calcareous, argillaceous to clay matrix, no visible porosity, no show.
3584' - 3616'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light gray Limestone.
3616' - 3626'	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.
3626' - 3662'	LIMESTONE: light gray to gray to grayish brown, hard, cryptocrystalline, occasional slightly argillaceous, occasional reddish brown SHALE, tight, no shows.

FORAKER	SAMPLE TOP: 3662'	LOG TOP: 3668'	SUBSEA: -536'

3662' - 3672'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, patchy black asphalt oil stain, tight, faint yellow grain fluorescence, good pale greenish white cuts.
3672' - 3680'	SHALE: gray to greenish gray, firm, blocky, non to slightly calcareous, fossil fragments, medium gray Limestone stringers.

LITHOLOGY AND SHOWS

3680’ - 3692’	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragment, algal stain, tight to trace intercrystalline porosity, no shows.
3692’ - 3702’	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.
3702’ - 3754’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional moderately to very silty, occasional light gray Limestone stringers.
3754’ - 3762’	LIMESTONE: white to light gray, occasional reddish brown mottled, firm to hard, cryptocrystalline, chalky, slightly argillaceous in part, reddish brown Shale partings, tight, no show.
3762’ - 3816’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray chalky Limestone stringers.

WABAUNSEE	SAMPLE TOP: 3816’	LOG TOP: 3820’	SUBSEA: -688’

3816’ - 3850’	LIMESTONE: white to light gray, with light reddish brown mottled, soft to firm, cryptocrystalline, chalky texture, reddish brown SHALE partings, occasional fossil fragment, trace black heavy oil material, faint yellow grain fluorescence, slow pale greenish white cut.
3850’ - 3876’	SHALE: reddish brown, maroon, gray, mottled in part, soft to firm, blocky, non calcareous, moderately to very silty in part.

TOPEKA	SAMPLE TOP: 3876’	LOG TOP: 3884’	SUBSEA: -752’

3876’ - 3892’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment (Fusulinid, Brachiopod), sparry calcareous, gray Shale partings, occasional black dead oil, tight, no shows.
3892’ - 3902’	SHALE: gray, firm, platy to fissile, non to slightly calcareous, dull.
3902’ - 3920’	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, opaque chert, tight, no shows.
3920’ - 3954’	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, clayey.

LITHOLOGY AND SHOWS

3954’ - 3982’	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.
3982’ - 4023’	SHALE: red brown, brownish maroon, firm, blocky, occasional slightly calcareous, non to slightly silty in part, clayey to sticky.

OREAD SAMPLE TOP: 4023’ LOG TOP: 4020’ SUBSEA: -888’

4023’ - 4039’	LIMESTONE: cream to white, firm to hard, mudstone 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, fair show.
4039’ - 4048’	LIMESTONE: gray to light gray, occasional dark gray, firm to hard, mudstone, occasional fossil, slightly argillaceous in part, tight, no show.
4048’ - 4064’	SHALE: dark gray to gray, firm, fissile, slightly carbonaceous in part, non to slightly calcareous, fossil fragments.
4064’ - 4078’	LIMESTONE: gray to light gray, firm to hard, mudstone, occasional fossil, becoming argillaceous in part at base, tight, no show.
4078’ - 4105’	SHALE: gray to reddish brown to maroon, firm, blocky, non to slightly calcareous, sub waxy to earthy.

LANSING-
KANSAS CITY “A” SAMPLE TOP: 4105’ LOG TOP: 4102’ SUBSEA: -970’

4105’ - 4122’	LIMESTONE: white to light gray, hard, mudstone, fossil fragments, spotty black oil stain, no visible porosity, bright yellowish white fluorescence, instant blooming yellowish white cuts, fair show, but lacks porosity.
4122’ - 4134’	LIMESTONE: gray to light gray, hard, mudstone, occasional fossil, slightly argillaceous in part, rare black oil stain, tight, predominantly no show.
4134’ - 4140’	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, clean, no visible porosity, no show.
4140’ - 4170’	SHALE: gray to reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional argillaceous LIMESTONE stringers.

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "B"	SAMPLE TOP: 4170'	LOG TOP: 4162'	SUBSEA: -1030'

4170' - 4184'	LIMESTONE: white to very light gray, firm to hard, mudstone to wackestone, occasional fossil fragments, pyrite, occasional free live heavy black oil, predominant tight with trace intergranular porosity and fair vuggy porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, good show.
4184' - 4196'	LIMESTONE: white to light gray, hard, mudstone, occasional fossil, chalky texture, clean, tight, two pieces black oil stain and cut, tight, predominantly no show.
4196' - 4222'	SHALE: gray to dark gray, firm, sub blocky to fissile, non to slightly calcareous, fossil fragment, pyrite, occasional carbonaceous.

LANSING- KANSAS CITY "C"	SAMPLE TOP: 4222'	LOG TOP: 4216'	SUBSEA: -1084'

4222' - 4238'	LIMESTONE: light gray to white, firm, mudstone to wackestone, fossil fragments, predominantly chalky texture, occasional spotty black oil specks in tight rock, no visible porosity, dull yellow fluorescence, dull yellowish white cut, very poor show.
4238' - 4262'	SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, fossil fragments, pyrite.

LANSING- KANSAS CITY "D"	SAMPLE TOP: 4262'	LOG TOP: 4256'	SUBSEA: -1124'

4262' - 4276'	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.
4276' - 4290'	SHALE: gray to dark gray, firm, blocky to fissile, non to slightly calcareous, occasional Limestone stringers.
4290' - 4310'	SHALE: dark reddish brown, soft to firm, blocky to platy, non calcareous, moderately to very silty, sticky;

LITHOLOGY AND SHOWS

LANSING- KANSAS CITY "E"	SAMPLE TOP: 4310'	LOG TOP: 4309'	SUBSEA: -1177'

4310' - 4326'	LIMESTONE: white, firm to soft, mudstone, very chalky, fossil fragments, occasional patchy brown oil stain, predominantly very tight, trace poor vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, poor show.
4326' - 4336'	SHALE: dark gray to gray, firm, blocky, calcareous, fossil (Brachiopod), very to slightly carbonaceous in part, plant remains, trace pyrite.
4336' - 4351'	SHALE: dark reddish brown to reddish brown to gray, firm, blocky to platy, non calcareous, moderately to very silty.

LANSING- KANSAS CITY "F"	SAMPLE TOP: 4351'	LOG TOP: 4346'	SUBSEA: -1214'

4351' - 4364'	LIMESTONE: cream to white to light gray, firm to hard, mudstone to wackestone, very chalky texture, occasional fossil fragments, very tight, no shows.
4364' - 4376'	SHALE: gray to dark gray, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite.
4376' - 4387'	LIMESTONE: white, hard, mudstone, chalky, dense, tight, no show.
4387' - 4414'	HALE: brownish red, firm, blocky, non calcareous, with interbedded Limestone stringers.
4414' - 4428'	LIMESTONE: white to cream, with reddish brown mottled, mudstone, occasional red shale partings, trace dark gray shale, occasional embedded medium grained white to black sand grains, tight, no shows.
4428' - 4444'	SHALE: dark reddish brown to reddish brown to dark gray, firm, blocky to platy, non calcareous, moderately to very silty.
4444' - 4464'	SHALE: gray, firm, blocky, n to slightly calcareous, thin Limestone stringers.
4464' - 4478'	LIMESTONE: gray, hard, cryptocrystalline, fossil fragments, dense, tight, no shows.
4478' - 4506'	SHALE: gray to dark gray to dark gray green, hard to firm, sub blocky, non calcareous.

LITHOLOGY AND SHOWS

PAWNEE	SAMPLE TOP: 4506’	LOG TOP: 4500’	SUBSEA: -1368’

4506’ - 4518’	LIMESTONE: white to cream to very light gray, firm to hard, grainstone to mudstone, peloids in part, fossil fragments, scattered live black oil stain, trace to fair vuggy porosity, occasional interparticle porosity, occasional oil in vugs, bright yellowish white fluorescence, instant blooming yellowish white cuts, good show.
4518’ - 4528’	LIMESTONE: white to very light gray, hard, mudstone, slightly chalky, fossil fragments, tight, no shows.
4528’ - 4540’	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, fossil fragments, occasional black pellets.
4540’ - 4562’	LIMESTONE: white to light gray, firm to hard, mudstone, occasional black pellets, rare fossil, tight, no shows.

CHEROKEE	SAMPLE TOP: 4562’	LOG TOP: 4558’	SUBSEA: -1426’

4562’ - 4575’	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, plant remains, thin black boney Coal stringers.
4575’ - 4596’	LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, rare fossil fragment, black Algal stain, tight, occasionally sandy, no shows.
4596’ - 4604’	SHALE: black to dark gray, firm, blocky to fissile, occasionally carbonaceous at top, plant remains, disseminated pyrite.
4604’ - 4630’	LIMESTONE: brownish gray to light gray, firm to hard, mudstone to wackestone, occasional fossil fragment (Brachiopod), slightly sandy in part, slightly argillaceous in part, opaque chert, tight, no shows.
4630’ - 4639’	SHALE: gray to dark gray, firm, platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite.
4639’ - 4660’ TD	LIMESTONE: light gray to gray, firm to hard, mudstone, occasional fossil fragment, occasional dark gray carbonaceous SHALE partings, scattered opaque chert, tight, no shows.

SERVICES

CONTRACTOR:	Beredco Drilling Inc., Rig 2	
Toolpusher:	Milo Salinas	
DRILLING FLUIDS:	Morgan Mud, Inc.	McCook, ND
Mud Type:	Freshwater Chemical	308-340-5946
Engineers:	Dave Lines, Dave Korte	
MUD LOGGING:	None	
WELLSITE GEOLOGY:	T. M. McCoy & Co., Inc. Peter J. Vollmer	Wilson, WY 307-733-4332
DRILL STEM TESTING:	Trilobite Testing, Inc. Kevin Mack, Brandon Quintana DST 1: 3976’ - 4039’ Oread DST 2: 4122’ - 4195’ LKC “B” DST 3: 4470’ - 4518’ Pawnee	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Wireline Services RAG: Surface casing - TD Micro: 3500’ - TD Engineer: Jerod Long	Hays, KS 785-625-3858