

**BEREXCO LLC**

**DANIEL 1-19**

**SW SW SEC 19 T1S R37W**

**CHEYENNE COUNTY, KANSAS**

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## SUMMARY

The Berexco LLC Daniel 1-19 in Cheyenne County, Kansas spud July 15, 2014 and reached a total depth of 4800' on July 25, 2014. Wellsite geological supervision commenced at 3000'. The primary objectives of the wildcat were the Pennsylvanian Missourian Lansing-Kansas City limestones. Secondary zones of interests were the Foraker, Oread, and Pawnee limestones. The Daniel 1-19 was drilled using seismic and nearby well control.

On-site evaluation was by drill stem testing after sample analysis and consideration of structural position. Three DSTs were run.

### **Foraker, Wabaunsee, Topeka, and Oread**

The Foraker was clean non-porous limestone with dead oil staining. Minor oil shows in tight limestone were found in the Wabaunsee and Topeka but these did not merit drill stem testing. Oread samples were fossiliferous grainstone and mudstone with trace interparticle porosity, scattered oil staining, and good cuts. The overall lack of porosity and the results of DSTs on similar shows in nearby wells led to the decision not to test the Oread.

### **Lansing-Kansas City**

Only dead oil shows and no visible porosity were observed in the Lansing A.

DST 1 in the Lansing B recovered 1473 ft of watery mud with oil spots. Fair interparticle porosity with spotty black oil stain was observed in cuttings.

DST 2 in the combined Lansing C, D, and E recovered 5 ft of mud. Lansing C samples displayed scattered black oil stain, good fluorescence and cuts, but no visible porosity in chalky limestone. The Lansing D was mudstone with no shows or visible porosity. Lansing E samples displayed very spotty oil stain with fair fluorescence and cut from limited pin-point porosity in grainstone and chalky mudstone.

DST 3 in the combined Lansing F, Pawnee, and upper 20 ft of Fort Scott recovered 20 ft of mud with very poor flow pressures. The Lansing F was nonporous limestone with no sample show. The Pawnee was chalky mudstone devoid of porosity and shows. The Fort Scott included in the test exhibited questionable cuts and fluorescence in a few cuttings.

### **Plugged and Abandoned**

After wireline logs the Daniel 1-19 was plugged and abandoned in accordance with the Kansas Corporation Commission, Oil & Gas Conservation Division.

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

Berexco LLC  
Daniel 1-19

## WELL DATA

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

WELL NAME: Daniel 1-19

SURFACE LOCATION: 660' FSL & 660' FWL  
SW SW Sec. 19, T1S, R37W  
Cheyenne County, KS

LATITUDE & LONGITUDE: 39.9468757, -101.5199323 (From State, calculated from footages)

BOTTOM HOLE LOCATION: Vertical hole

ELEVATIONS: 3228' GL 3241' KB

API NUMBER: 15-023-21402

BASIN: Mid-Continental Arch

FIELD: Wildcat

HOLE SIZE: 12 1/4" to 310'; 7 7/8" to 4800'

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

SPUD DATE: July 15, 2014

TD DATE: July 25, 2014

TOTAL DEPTH: 4800' Rig TD 4795' Log TD

LAST FORMATION: Pennsylvanian Cherokee

WELL STATUS: Plugged and abandoned

OPERATOR  
REPRESENTATIVE: Dana Wreath - Vice President

WELLSITE GEOLOGIST: Peter J. Vollmer

**FORMATION TOPS**

Formation	Sample Top	Log Top	Log TVD	Log Datum
KB				3241
Pierre Sh	Cased	Cased	N/A	N/A
Niobrara Fm	N/A	1195	1195	+2046
Fort Hays Ls Mbr	N/A	1655	1655	+1586
Carlile Sh	N/A	1705	1705	+1536
Dakota	N/A	2080	2080	+1161
Cheyenne	N/A	2667	2667	+574
Blaine	N/A	2987	2987	+254
Stone Corral Anhydrite	3196	3194	3194	+47
Base Anhydrite	3229	3224	3224	+17
Chase Limestone	3392	3392	3392	-151
Neva	3652	3650	3650	-409
Red Eagle	3702	3716	3716	-475
Foraker	3772	3772	3772	-531
Wabaunsee	3918	3908	3908	-667
Topeka	3982	3986	3986	-745
Deer Creek Lime	4070	4058	4058	-817
Oread	4124	4126	4126	-885
Lansing-Kansas City				
"A"	4205	4202	4202	-961
"B"	4265	4263	4263	-1022
"C"	4319	4318	4318	-1077
"D"	4363	4360	4360	-1119
"E"	4416	4408	4408	-1167
"F"	4451	4452	4452	-1211
Pawnee	4605	4605	4605	-1364
Ft Scott	4636	4642	4642	-1401
Cherokee	4700	4694	4694	-1453
TD Driller	4800			
TD Logger		4795	4795	-1554

## LITHOLOGY AND SHOWS

The following descriptions are interpretive. Rig crew members collected unlagged samples from 3500' to 4800' TD. Depths are rig depths except where noted as wireline.

3500' – 3550'	SHALE: light reddish brown to reddish orange, firm to soft, fissile to blocky, very silty, sandy in part, non to slightly calcareous.
3550' – 3570'	LIMESTONE: white to light gray to light brown, occasional reddish brown mottled, firm to hard, cryptocrystalline, occasional fossil fragments, chalky, slightly argillaceous in part, gray Shale partings, occasional Sand, tight, no show.
3570' – 3620'	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.
3620' – 3640'	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.
3640' – 3652'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light gray Limestone.
NEVA	SAMPLE TOP: 3652'      LOG TOP: 3650'      SUBSEA: -409'
3652' – 3660'	LIMESTONE: white to light gray, hard, mudstone, slightly chalky, scattered black Algal stain, tight, no show.
3660' – 3666'	SANDSTONE: very light gray to off white, friable to firm, very fine grained, sub rounded to rounded, well sorted, calcareous cement, occasional clay filled, no visible porosity, no shows.
3666' – 3702'	SHALE: reddish brown, firm to hard, fissile to blocky, very silty, sandy in part, non to slightly calcareous, trace light gray Limestone.
RED EAGLE	SAMPLE TOP: 3702'      LOG TOP: 3716'      SUBSEA: -475'
3702' – 3718'	LIMESTONE: light gray to gray to grayish brown, hard, cryptocrystalline, occasional slightly argillaceous, occasional reddish brown SHALE, tight, no shows.
3718' – 3772'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasionally moderately to very silty, occasional light gray Limestone and Sandstone stringers.

## LITHOLOGY AND SHOWS

FORAKER	SAMPLE TOP: 3772'	LOG TOP: 3772'	SUBSEA: -531'
3772' – 3780'	LIMESTONE: light gray to dark gray, mottled in part, hard, packstone to grainstone, abundant fossil fragments, pellets, rare black asphalt specks (dead oil), very tight, faint yellowish green fluorescence, occasional weak pale greenish cuts, very poor show.		
3780' – 3786'	SHALE: light gray to greenish gray, firm, blocky, non to slightly calcareous, Limestone stringers.		
3786' – 3804'	LIMESTONE: white to light gray, firm to hard, cryptocrystalline, chalky, fossil fragments, algal stain, tight to trace intercrystalline porosity, no shows.		
3804' – 3814'	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.		
3814' – 3834'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray chalky Limestone stringers.		
3834' – 3842'	LIMESTONE: pale gray to dark gray, firm to hard, mudstone to wackestone, occasional fossil fragment, sandy in part, slightly argillaceous, tight, no show.		
3842' – 3882'	SHALY SILTSTONE: reddish brown to light gray, mottled, firm to friable, very fine grained grading to silt, argillaceous in part, reddish brown Shale partings, tight, no show.		
3882' – 3896'	LIMESTONE: white to light gray, occasional reddish brown mottled, firm to hard, mudstone, slightly argillaceous in part, gray to dark gray Shale partings, tight, no show.		
3896' – 3918'	SHALE: reddish brown, firm, blocky, occasional SHALE: gray to dark gray, firm, fissile, slightly carbonaceous, calcareous.		
WABAUNSEE	SAMPLE TOP: 3918'	LOG TOP: 3908'	SUBSEA: -667'
3918' – 3936'	LIMESTONE: white to light gray, with light reddish brown mottled, soft to firm, cryptocrystalline, chalky texture, reddish brown SHALE partings, occasional fossil fragments, trace black heavy oil material, faint yellowish green fluorescence, slow pale green white cut.		
3936' – 3956'	LIMESTONE: white to light gray, occasional reddish brown mottled, firm to hard, mudstone, reddish brown Shale stringers, scattered black pellets, tight, no show.		
3956' – 3982'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, occasional light gray chalky Limestone stringers, gummy to sticky.		

## LITHOLOGY AND SHOWS

TOPEKA	SAMPLE TOP: 3982'	LOG TOP: 3986'	SUBSEA: -745'
3982' - 4000'	LIMESTONE: white to light gray, with light reddish brown mottled, soft to firm, grainstone, ooliths, fossil fragments, spotty black heavy oil material, no visible porosity, pale yellowish white fluorescence, diffuse pale yellowish white cut, poor show.		
4000' - 4014'	SHALE: gray to dark gray, firm, platy to fissile, n to slightly calcareous, dull.		
4014' - 4030'	LIMESTONE: light gray to white, hard to firm, cryptocrystalline, fossil fragment, opaque chert, dark gray SHALE stringers, tight, no shows.		
4030' - 4070'	SHALE: reddish brown, soft to firm, sub blocky, non calcareous, occasional silty, clayey, white Limestone stringers.		
DEER CREEK LIME	SAMPLE TOP: 4070'	LOG TOP: 4058'	SUBSEA: -817'
4070' - 4082'	LIMESTONE: white to light brown, hard to firm, mudstone, chalky, fossil fragments (Fusulinids), occasional brownish red partings and inclusions, rare black asphalt stain, tight, no shows.		
4082' - 4124'	SHALE: reddish brown, brownish maroon, grayish green, firm, blocky, occasional slightly calcareous, non to slightly silty in part, occasional thin SANDSTONE stringers, waxy in part, occasional clayey to sticky, occasional LIMESTONE: light brown, hard, mudstone, abundant black pellets, tight, no shows.		
OREAD	SAMPLE TOP: 4124'	LOG TOP: 4126'	SUBSEA: -885'
4124' - 4140'	LIMESTONE: cream to white, firm to hard, mudstone to grainstone, fossil fragments (Brachiopod, Crinoid, Fusulinids), occasional ooliths, occasional patchy black heavy oil stain, predominately tight to trace interparticle porosity, patchy bright yellowish white fluorescence, immediate blooming yellowish white cuts, with slow streaming yellowish white cuts, fair show.		
4140' - 4154'	LIMESTONE: white to light gray, hard to firm, mudstone, very chalky, occasional fossil, tight, no shows.		
4154' - 4158'	SHALE: dark gray to gray, firm, fissile, slightly carbonaceous in part, n to slightly calcareous, fossil fragments.		
4158' - 4168'	LIMESTONE: gray to light gray, firm to hard, mudstone, occasional fossil, becoming shaly at base, tight, no show.		

## LITHOLOGY AND SHOWS

4168' – 4205'	SHALE: reddish brown to maroon, firm to soft, blocky, non to slightly calcareous, occasional very silty, dull to earthy, occasional gummy.
LANSING– KANSAS CITY “A”	SAMPLE TOP: 4205'      LOG TOP: 4202'      SUBSEA: –961'
4205' – 4216'	LIMESTONE: white to light gray, hard, mudstone, fossil fragments, chalky, trace black asphalt material dead oil, no visible porosity, no show.
4216' – 4230'	LIMESTONE: gray to light gray, hard, mudstone, occasional fossil (Ostracods), slightly argillaceous in part, rare black oil stain, tight, predominately no show.
4230' – 4238'	SANDSTONE: white to light gray, firm to friable, very fine grained, well rounded, well sorted, calcareous cement, clay filled, black dead oil specks, no visible porosity, no show.
4238' – 4265'	SHALE: reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional argillaceous LIMESTONE stringers.
LANSING– KANSAS CITY “B”	SAMPLE TOP: 4265'      LOG TOP: 4263      SUBSEA: –1022'
4265' – 4282'	LIMESTONE: white to very light gray, firm to hard, mudstone to packstone, occasional fossil fragment, pyrite, occasional spotty heavy black oil, trace intergranular porosity and trace vuggy porosity, bright yellowish white fluorescence, instant blooming bright yellowish white cuts, fair show.
4282' – 4296'	SHALE: gray to dark gray to black, firm, sub blocky, non to slightly calcareous, fossil fragments (Brachiopod), pyrite, very slightly carbonaceous in part.
4296' – 4302'	LIMESTONE: white to light gray, hard, mudstone, occasional fossil, chalky texture, clean, tight, no show.
4302' – 4319'	SHALE: gray to dark gray, firm, sub blocky to fissile, non to slightly calcareous, fossil fragments, occasional very slightly carbonaceous.



## LITHOLOGY AND SHOWS

LANSING-  
KANSAS CITY "C"

SAMPLE TOP: 4319' LOG TOP: 4318' SUBSEA: -1077'

4319' - 4336'

LIMESTONE: light gray to white, firm, mudstone to packstone, fossil fragment, predominant chalky texture, abundant patchy heavy black oil specks, no free oil, predominately no visible porosity, occasional trace moldic porosity, bright yellowish white fluorescence, instant yellowish white diffuse cuts, good show with very poor porosity.

4336' - 4363'

SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, occasional slightly carbonaceous, fossil fragment, occasional Limestone stringer.

LANSING-  
KANSAS CITY "D"

SAMPLE TOP: 4363' LOG TOP: 4360' SUBSEA: -1119'

4363' - 4376'

LIMESTONE: cream to white, firm, mudstone to wackestone, fossil fragments, very chalky texture, no visible porosity, no shows.

4376' - 4384'

SHALE: gray to dark gray, firm, sub blocky, non to slightly calcareous, pyrite.

4384' - 4390'

LIMESTONE: light gray, hard, mudstone, very chalky, tight, no show.

4390' - 4416'

SHALE: reddish brown, soft to firm, subblocky, non to slightly calcareous, clayey, occasional Siltstone and LIMESTONE stringers.

LANSING-  
KANSAS CITY "E"

SAMPLE TOP: 4416' LOG TOP: 4408' SUBSEA: -1167'

4416' - 4426'

LIMESTONE: white, firm to soft, mudstone to grainstone, peloids, slightly chalky in part, fossil fragment, occasional patchy black oil stain, trace vuggy porosity, bright yellowish white fluorescence, immediate blooming yellowish white cuts, poor show.

4426' - 4451'

SHALE: dark reddish brown to reddish brown to gray, firm, blocky to platy, non calcareous, moderately to very silty, SILTSTONE: maroon, friable, grading to very fine grained sand, clay fill.

## LITHOLOGY AND SHOWS

### LANSING- KANSAS CITY "F"

SAMPLE TOP: 4451'      LOG TOP: 4452'      SUBSEA: -1211'

- 4451' – 4460'      LIMESTONE: cream to white to light gray, firm to hard, mudstone, very chalky texture, occasional fossil fragment, very tight, no shows.
- 4460' – 4476'      SHALE: gray to dark gray to black to reddish brown, firm, platy, non to slightly calcareous, occasionally slightly carbonaceous, disseminated pyrite, plant remains.
- 4476' – 4488'      LIMESTONE: white to light gray, firm to hard, mudstone, slightly chalky texture, fossil fragments, gray Shale partings, tight, no shows.
- 4488' – 4520'      SHALE: brownish red, firm, blocky, non calcareous, with interbedded white Limestone stringers.
- 4520' – 4534'      LIMESTONE: white to cream, with reddish brown mottled, mudstone, fossil, occasional red SHALE partings, tight, no shows.
- 4534' – 4550'      SHALE: dark reddish brown, firm to hard, blocky to platy, non calcareous, moderately to very silty.
- 4550' – 4570'      LIMESTONE: gray to white to cream, hard, cryptocrystalline, fossil fragments, gray Shale partings, dense, tight, no shows.
- 4570' – 4605'      SHALE: gray to dark gray to dark gray green, hard to firm, sub blocky, non calcareous, fossil (Brachiopod).

### PAWNEE

SAMPLE TOP: 4605'      LOG TOP: 4605'      SUBSEA: -1364'

- 4605' – 4626'      LIMESTONE: light gray to very light gray to cream, hard, mudstone, slightly to moderately chalky, rare fossil fragment(Crinoid), clean, tight, no shows.
- 4626' – 4636'      SHALE: gray to dark gray to black, hard to firm, sub blocky to fissile, n calcareous, fossil (Brachiopod), carbonaceous in part.

### FORT SCOTT

SAMPLE TOP: 4636'      LOG TOP: 4642'      SUBSEA: -1401'

- 4636' – 4666'      LIMESTONE: light gray to light brown, firm, very fine to microcrystalline in part, predominant mudstone, rare fossil fragment, trace patchy brown to black oil stain (three pieces), trace intercrystalline porosity, rare pale yellow fluorescence, slow dull yellow diffuse cut, with very slow streaming faint dull yellow cut.

## LITHOLOGY AND SHOWS

4666' – 4676'	SHALE: gray to dark gray, firm, blocky to fissile, occasional carbonaceous at top, disseminated pyrite.
4676' – 4700'	LIMESTONE: white to light gray to gray, firm to hard, mudstone to wackestone, rare fossil fragment, tight, occasional sandy, no shows.
CHEROKEE	SAMPLE TOP: 4700'      LOG TOP: 4694'      SUBSEA: -1453'
4700' – 4708'	SHALE: black to dark gray to gray, firm, blocky to fissile, occasional carbonaceous, trace pyrite, plant remains, thin black slightly argillaceous Coal stringers.
4708' – 4744'	LIMESTONE: white to light gray, firm to hard, mudstone to wackestone, occasional fossil fragments (Brachiopod), slightly sandy in part, slightly argillaceous in part, light gray Shale stringers, tight, no shows.
4744' – 4768'	SHALE: gray to very dark gray, firm, fissile to platy, non to slightly calcareous, occasional slightly carbonaceous, pyrite.
4768' – 4794'	LIMESTONE: 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.
4794' – 4800' TD	SANDSTONE: white to very light gray, friable, fine grained, well rounded, well sorted, weak silica cement, occasional black dead oil specks, 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
Engineer:	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. Royal Fisher DST 1: 4216' - 4282' LKC "B" DST 2: 4302' - 4440' LKC "C" - "E" DST 3: 4566' - 4656' Pawnee & Fort Scott	Hays, KS 785- 625-4778
DIRECTIONAL DRILLING:	None	
WIRELINE LOGS:	Pioneer Energy Services RAG: Surface casing - TD Micro: 3500' - TD Dan Schmidt	Hays, KS 785-625-3858