

**BEREXCO, LLC.
MICHAEL # 1-22
SENE SECTION 22 1S-36W
RAWLINS COUNTY, KANSAS**

**GEOLOGIST
WILLIAM B. BYNOG**

RESUME

OPERATOR: BEREXCO, LLC.

WELL NAME & NUMBER: MICHAEL # 1-22

LOCATION: SENE SECTION 22 1S-36W

COUNTY: RAWLINS

STATE: KANSAS

SPUD DATE: 8-10-2013 COMPLETION DATE: 8-23-2013

ELEVATIONS: GL: 3147' KB: 3158'

CONTRACTOR: BEREDCO RIG 10

LOGS: LOG TECH TYPES: RAG, MICROLOG & SONIC

WELLSITE ENGINEER: NONE

MUD COMPANY: MORGAN MUD

MUD TYPE & ENGINEER: FRESH CHEMICAL

GEOLOGIST: WILLIAM B.BYNOG

HOLE SIZE: 7 7/8

MUD LOGGING BY: NONE

DRILL STEM TEST COMPANY: TRILOBITE

DRILL STEM TEST: DST #1 3890-3980, DST #2 4000-4110,
DST #3 4085-4165, DST #4 4138-4200,
DST #5 4210-4250, DST #6 MISRUN, DST
7 4240-4300

WELL STATUS: RAN 5 ½ PRODUCTION CASING

DISCUSSION

Michael # 1-22 1S-36W was drilled a depth of 4810 feet, testing the Lansing Kansas City, Pawnee and Mississippian formations in Rawlins County, Kansas. This was a wildcat well drilled using Seismic and well control.

Structurally, Michael # 1-22 came in ten feet high to the closest well, Moser # 3-9 1S-36W and ten feet high to the prognosis.

As a result of running high there were very good sample shows with good porosity development in the Oread, Lansing B, C, D and Pawnee formations.

The Oread was tested on drill stem test # 1, recovering 408 feet of free oil and 595 feet of water. Logs indicate a clear oil / water contact. Drilling continued to the Lansing A zone with a good show of oil. Drill stem test # 2 only recovered 61 feet of mud. The B zone was associated with a good drilling break and very good oil shows and porosity development. Drill stem test # 3 recovered 2800 feet of gassy oil with virgin pressures. The C zone had good shows and was tested on drill stem test # 4 recovering 248 feet of gas in pipe, 424 feet of oil, 298 feet of water cut oil (75% oil) and 1054 feet of oil cut water (10% oil). The D zone is a fractured oolitic limestone with fair porosity and was tested on drill stem test # 5 recovering 744 feet of gas in pipe and 3154 feet of gassy oil. The shut-in pressure on the D zone was abnormally high reaching 1881 pounds and still climbing. This became a problem later on because of the nearly balanced system with a hydrostatic pressure of 2000 pounds. We did test the E zone on drill stem test # 7 and recovered only 5 feet of mud. The Pawnee has good oil shows and an attempt was made to test but the well was flowing at one gallon per minute. A decision was made to drill to total depth and log because of the sensitive mud system and a loss circulation problem, before and after drilling the D zone.

Logs agreed with drill stem tests and sample evaluation recording fair to good porosity development in the Oread, Lansing B, C, D and Pawnee zones. We circulated some oil along with the mud on drill stem attempts after drilling the D zone, due to the very high pressure.

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

ANHYDRITE 3060(+98) S

3060(+98) L

BASE 3090(+68) S

3090(+68) L

3500-3636 SHALE red,soft,argillaceous

FORAKER

3636-3710 LIMESTONE pale gray,white,hard,chlky in part,poor porosity,no shows

3710-48 LIMESTONE white,firm,chalky,sandy in part,poor porosity,no shows

3748-3820 SHALE red,soft,argillaceous

3820-30 LIMESTONE pale gray,hard,dense, chalky in part,slightly fossils,poor porosity,abundant dead black stain,nfo

3830-46 SHALE as above

3846-56 LIMESTONE white,pale gray,hard,chalky,spotty dead black stain,nfo

3856-70 SHALE red,soft,silty

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

TOPEKA

3870-94 LIMESTONE white,pale gray,very hard,dense,chalky in part,poor porosity,no shows

3994-3914 LIMESTONE white,firm,very sandy,poor porosity,no shows

3914-30 LIMESTONE white,firm,very chalky,poor porosity,no shows

3930-70 SHALE red,soft,very argillaceous, silty in part

OREAD

3970-78 GRAINSTONE white, firm,very fossils,slightly chalky,fair intg porosity,spotty to even live brown stain, very good milky cut,good show free oil,good odor

3978-4010 LIMESTONE buff,hard,blocky,chalky in part,no shows

4010-20 LIMESTONE pale gray,very hard,dense, argillaceous in part

4020-50 SHALE gray black,green,firm fissile, slightly carbonaceous with thin stringers SANDSTONE green,friable,very fine grained,clay filled,poor porosity,no shows

4050-74 SHALE as above some red,soft,argillaceous with thin LIMESTONE light brown,very hard,very dense,some Chert brown

LANSING A

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

4074-82 LIMESTONE white,firm,chalky, slightly oolitic,poor to fair intg porosity,spotty live brown stain,good milky cut,poor show free oil

4082-4100 LIMESTONE buff,hard,blocky,dense, chalky in part,no shows

4100-26 SHALE red,soft,very argillaceous with thin SANDSTONE white,firm,very fine grained,poor porosity,very spotty dead black stain,weak cut

B

4126-34 GRAINSTONE white, firm,very oolitic,fair intg porosity,spotty to even live brown stain,good milky cut,fair show free oil

4134-40 LIMESTONE buff,very hard,dense,no shows

4142-54 SHALE red,soft,argillaceous

4154-60 LIMESTONE white,firm,very chalky,poor porosity,very spotty black dead stain

4160-74 SHALE green,soft,very argillaceous,silty in part

4174-84 GRAINSTONE pale gray,slightly hard,very fossils,poor to fair intg porosity,spotty to even live brown stain, good milky cut,fair show free oil

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

4184-88 LIMESTONE buff,very hard,dense,no shows

C

4188-98 GRAINSTONE white, firm,very fossils,fair intg porosity,spotty live brown stain,good milky cut,good show free oil

4198-4210 LIMESTONE buff,very hard,dense, blocky,no shows

4210-30 SHALE green,red,firm,blocky, argillaceous

D

4230-36 LIMESTONE white,buff,hard,fossils ,fractured,poor to fair vuggy porosity, spotty live brown stain,good milky cut,good show free oil

4236-48 LIMESTONE buff,very hard,dense,poor porosity,no shows with thin SHALE as above

4248-72 SHALE red,green,firm,waxy

E

4272-76 LIMESTONE buff,very hard,dense, chalky in part,poor porosity,no shows

4276-84 LIMESTONE white,buff,firm to slightly hard,fossils, chalky,poor vuggy porosity,spotty live brown stain,good milky cut,poor show free oil

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

4246-95 LIMESTONE white, buff, hard, dense, chalky in part, poor porosity, no shows

4295-4314 LIMESTONE as above some SHALE red, very sandy

F

4314-46 LIMESTONE buff, hard, dense, blocky, poor porosity, no shows with thin SHALE as above

4346-70 LIMESTONE buff, very hard, dense, slightly fossils, no shows

4360-27 SHALE red, green, soft, argillaceous with thin LIMESTONE as above

4427-38 LIMESTONE buff, very hard, dense, chalky in part, poor porosity, no shows

4438-52 SHALE green, firm, waxy, fissile

PAWNEE

4452-56 LIMESTONE buff, hard, oolitic, poor to fair intg porosity, spotty light brown stain, fair cut

4456-60 LIMESTONE buff, very hard, dense, no shows

4460-70 LIMESTONE white, buff, firm to hard, very chalky, poor vis porosity, no shows some CHERT orange

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

4470-90 SHALE green,maroon,brown,firm, fissile

4490-4525 LIMESTONE pale gray,buff,very hard,dense,blocky,no shows

4525-42 SHALE black,firm,very carbonaceous

4542-65 LIMESTONE buff,very hard,very dense, blocky,no shows

4565-4610 SHALE green,maroon,red,soft to firm argillaceous some sandy in part,no shows

4610-30 LIMESTONE pale gray,buff,very hard,dense,blocky,no shows with thin SHALE as above

4630-76 SHALE red,maroon,soft,very argillaceous,some very sandy in part,no shows with thin LIMESTONE as above

4676-86 SANDSTONE maroon,translucent,firm, fine to mg,sbang,poor sorted,clay filled,fair intg porosity,no shows with thin SHALE as above

4686-92 LIMESTONE buff,pale gray,hard,dense,blocky,no shows with thin SHALE as above

4692-4700 SANDSTONE translucent,pale maroon,firm,fine to mg,srnd,mstrd, dirty,fair porosity,no shows

4700-46 SHALE yell,green,maroon,soft to firm,argillaceous with interbed SANDSTONE pale maroon,translucent,firm,very fine to fg,s rounded,msrtd,dirty,fair intg porosity,no shows

MICHAEL # 1-22 SAMPLE DESCRIPTIONS

4746-58 SANDSTONE translucent, friable to firm, fine to m, sang, msrtd, abundant glauconite ?, fair to good porosity, abundant large quartz grains

MISSISSIPPIAN

4758-62 DOLOMITE white, hard, dense, poor porosity, no shows, abundant Chert white, orange

4762-80 DOLOMITE white, slightly hard, fair micxln porosity, no shows Chert as above

4880-86 DOLOMITE as above poor porosity, no shows

4786-4810 DOLOMITE as above fair porosity, no shows

RTD 4810'

LTD 4814'