

**BEREXCO, LLC.
OWENS #3-19
SENW SECTION 19 1S-37W
CHEYENNE COUNTY, KANSAS**

**GEOLOGIST
WILLIAM B. BYNOG**

RESUME

OPERATOR: BEREXCO, LLC.

WELL NAME & NUMBER: OWENS #3-19

LOCATION: SENW SECTION 19 1S-37W

COUNTY: CHEYENNE

STATE: KANSAS

SPUD DATE: 7-10-2015 COMPLETION DATE: 7-20-2015

ELEVATIONS: GL: 3174 KB: 3185

CONTRACTOR: BEREDCO RIG 10

LOGS: LOG TECH TYPES: RAG, MICROLOG

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 4025-4085, DST#2 4160-4250,
DST#3 4236-4320, DST#4 4312-4375,
DST#5 4524-4560

WELL STATUS: SET PRODUCTION CASING

DISCUSSION

Owens #3-19 1S-37W was drilled a total depth of 4725 feet testing the Lansing Kansas City and Pawnee formations in Cheyenne County, Kansas. This well was drilled with the help of seismic data and well control, just southwest of East Fork field.

Structurally, Owens #3-19 came in flat to the prognosis and other productive wells in the area.

The Oread zone was the first live oil shows encountered in a fossiliferous Limestone and was tested on drill stem test #1 recovering only 2 feet of drilling mud with low depleted pressures. The B zone turns out to be the best zone, associated with a good drilling break, fair to good porosity development and good live sample shows in a fossiliferous Grainstone. This zone was tested on drill stem test #2 recovering 380 feet of gas in pipe and 590 feet of total fluid, 360 feet of gassy oil and 230 feet of gassy mud cut oil (50% oil). Drilling continued to the D zone encountering good live oil shows. The C and D zones were tested together on drill stem test #3 recovering only 1 foot of free oil and 4 feet of oil cut mud (25% oil). The E zone had a good oil show and was tested on drill stem test #4 recovering only 2 feet of mud. The Pawnee also had good oil shows and was tested on drill stem test #5, recovering 5 feet of oil cut mud (30% oil).

Logs agreed with sample evaluation recording poor to fair porosity development. The Lansing B zone is the best producer with a good drill stem test recovery. Other zones will contribute to production but may have to be treated.

A decision was made to run 5 ½ production casing based on the favorable oil and gas recoveries on drill stem tests and favorable log calculations.

Owens #3-19 Sample Descriptions

3700-20 SHALE red,soft,argillaceous

FORAKER

3720-36 LIMESTONE buff,hard,blocky,dense,poor porosity,no shows abundant Chert orange

3736-50 SHALE gray,gray green,firm,silty,fossils,calcareous with thin LIMESTONE as above

3750-66 SANDSTONE buff,firm,very fine grained,rounded,wsrtd,calcareous cement,poor porosity,no shows

3766-74 SHALE as above silty,fossils with thin LIMESTONE as above

3774-3820 SHALE orange,soft,silty

3820-3849 SHALE as above with thin LIMESTONE buff,pale gray,very hard,dense, some fossils in part,poor porosity,no shows

3849-80 LIMESTONE buff,pale yell,very hard,dense,crptoxln to very fnly microcrystalline,fossils, in part,poor porosity,no shows with thin SHALE as above

3880-3910 LIMESTONE buff,firm,chalky in part,some sandy in part,poor vis porosity,no shows

3910-3947 SHALE red,soft,silty with thin LIMESTONE as above

TOPEKA

Owens #3-19 Sample Descriptions

3947-64 LIMESTONE white,hard,microcrystalline,fossils,poor porosity,no shows with thin SHALE as above

3964-86 LIMESTONE white,buff,very hard,very dense,crptoxln,blocky,poor porosity,no shows with thin SHALE as above

3986-3992 LIMESTONE white,firm,slightly chalky,fossils,sandy in part,poor to fair intergranular porosity,no shows

3992-4010 LIMESTONE white,pale gray brown,very hard,very dense,blocky, crptoxln,no shows

4010-20 SHALE as above

4020-30 LIMESTONE pale gray,very hard,dense,blocky,crtoxln,no shows

4030-54 SHALE red,firm,very silty

4054-73 LIMESTONE buff,hard,blocky,dense,poor porosity with one piece with very faint stain,poor cut, interbedded SHALE as above

OREAD

4073-82 GRAINSTONE white,firm,chalky in part,oolic,fair intergranular and vuggy porosity,spotty live thick stain,very good cut,poor show free oil

4082-4126 LIMESTONE pale gray,very hard,very dense,blocky,crptoxln,no shows

Owens #3-19 Sample Descriptions

4126-40 SHALE gray black,firm,fissile,slightly carbonaceous

4140-49 SHALE red,soft,very argillaceous

LANSING A

4149-70 LIMESTONE gray brown,very hard,very dense,crptoxln,no shows

4170-74 SANDSTONE white,firm,very fine grained,chalky,poor porosity,very spotty black dead stain,no free oil

4174-4210 SHALE red,soft,very argillaceous

B

4210-16 GRAINSTONE white,firm,slightly chalky,fossils,fair intergranular and vuggy porosity,spotty live brown stain,very good cut,good show free oil

4216-20 LIMESTONE buff,very hard,dense,crptoxln,no shows

4220-30 SANDSTONE white,friable,very fine grained,wsrtd,chalky,fair intergranular porosity,spotty to even live black stain,very good cut,fair show free abundant pyrite,with SHALE as above

4230-40 LIMESTONE gray brown,very hard,dense,crptoxln,no shows

4240-62 SHALE red,soft,silty

C

Owens #3-19 Sample Descriptions

4262-68 LIMESTONE, white, slightly hard, slightly fossils, chalky, poor pinpoint vuggy porosity, spotty dead black tar stain, fair cut, no free oil

4268-76 LIMESTONE pale gray, very hard, dense, crptoxln to very fnly microcrystalline, poor porosity, no shows

4276-4300 SHALE red, green, firm, silty

D

4300-06 LIMESTONE pale gray, very hard, very dense, crptoxln, no shows

4306-14 LIMESTONE buff, off white, slightly hard, chalky in part, slightly fossils, poor to fair pinpoint vuggy porosity, spotty live brown stain, fair cut, no free oil

4314- 54 SHALE red, green, gray, firm, fissile

E

4354-60 GRAINSTONE white, firm, oolic, chalky in part, poor to fair intergranular porosity, spotty to even live brown stain, good cut, fair show free oil

4360-68 LIMESTONE white, slightly hard, fossils, becoming very chalky, poor to fair vis porosity, very spotty live brown stain, fair cut, no free oil

4366-70 LIMESTONE buff, very hard, dense, blocky, crptoxln, no shows

Owens #3-19 Sample Descriptions

4370-94 SHALE red,green,firm,fissile,silty in part

F

4394-4420 LIMESTONE buff,pale gray,very hard,very dense,crptoxln,no shows with thin SHALE as above

4420-42 SHALE and LIMESTONE as above becoming slightly fossils,dense,no shows

4442-54 LIMESTONE buff,very hard,dense,slightly fossils,poor porosity,no shows

4454-60 SHALE red,gray,firm,britt,fissile

4460-66 LIMESTONE white,pale gray,firm to hard,chalky to dense porosity,no shows

4466-4510 SHALE as above becoming very silty

4510-28 LIMESTONE pale gray,very hard,slightly fossils,dense matrix,no shows

4528-48 SHALE gray,green,red,firm,silty some black slightly carbonaceous

PAWNEE

4548-56 GRAINSTONE white,slightly hard,very oolitic,poor to fair intergranular and moldic porosity,spotty to even light live brown stain,very good cut,good show free oil

Owens #3-19 Sample Descriptions

4556-70 LIMESTONE buff, pale gray,very hard,dense,crptoxln,no shows

4570-84 SHALE red,green,some black,firm,fissile

4584-4600 LIMESTONE pale gray,buff,very hard,dense,crptoxln,no shows

4600-12 SHALE as above

4612-28 LIMESTONE pale gray,gray brown,very hard,very dense,crptoxln, some chalky in part,no shows

4628-42 SHALE as above

4642-62 LIMESTONE buff,b hard,dense as above with thin LIMESTONE white,slightly hard,very sandy,very fine to fine good,chalky,poor porosity,no shows

4662-72 SHALE as above

4672-80 SANDSTONE translucent,hard,very fine to fine good,calcareous cement,poor porosity,no shows

4680-4702 SHALE as above green,red,firm,fissile

4702-25 SANDSTONE red,firm,fine to m grained,poor sortd,rounded,poor vis porosity,no shows with thin SHALE as above

Owens #3-19 Sample Descriptions

RTD 4725'

LTD 4727'