

JAMES C. MUSGROVE

Petroleum Geologist
212 Main Street
P.O. Box 215
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

Empire Energy E&G LLC
Driscoll Heirs #5
NW-NW-NE-SE (2363' FSL & 1188' FEL)
Section 31-15s-11w
Russell County, Kansas
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5 1/2" Production Casing Set

Contractor: Ninneseah Drilling Co. (Rig #1)
Commenced: October 15, 2013
Completed: October 21, 2013
Elevation: 1891' K.B; 1889' D.F; 1878' G.L.
Casing program: Surface; 8 5/8" @ 218'
Production; 5 1/2" @ 3525'
Sample: Samples saved and examined 2500' to the Rotary Total Depth.
Drilling time: One (1) foot drilling time recorded and kept 2500 ft. to the Rotary Total Depth.
Measurements: All depths measured from the Kelly Bushing.
Drill Stem Tests: There was one (1) Drill Stem Test ran by Trilobite Testing Co.
Electric Log: By Nabors; DIL, CDL/CNL, PE, MEL & Sonic.

| <u>Formation</u> | <u>Log Depth</u> | <u>Sub-Sea Datum</u> |
|--------------------|------------------|----------------------|
| Anhydrite | 729 | +1162 |
| Base Anhydrite | 758 | +1133 |
| Topeka | 2662 | -771 |
| Heebner | 2943 | -1052 |
| Toronto | 2959 | -1068 |
| Douglas | 2971 | -1080 |
| Brown Lime | 3034 | -1143 |
| Lansing | 3050 | -1159 |
| Base Kansas City | 3311 | -1420 |
| Arbuckle | 3350 | -1459 |
| Rotary Total Depth | 3525 | -1434 |
| Log Total Depth | 3524 | -1433 |

(All tops and zones corrected to Electric Log measurements).

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

2731-2746' Limestone; tan, cream, fine to medium crystalline, scattered intercrystalline porosity, cherty in part, trace brown stain, no show of free oil and no odor.

- 2818-2828' Limestone; cream, tan, fine and medium crystalline, fossiliferous, poorly developed porosity, dark brown stain, no free oil and no odor in fresh samples.
- 2846-2851' Limestone; cream, tan, gray, finely crystalline, fossiliferous, chalky, trace spotty dark stain, no free oil and no odor.
- 2868-2884' Limestone; cream, tan, fine to medium crystalline, oolitic/fossiliferous, poor to fair intercrystalline and oomoldic porosity, golden brown to dark brown stain, show of free oil and fair odor in fresh samples.
- 2898-2906' Limestone; cream, tan, fine and medium crystalline, oolitic, few fossiliferous, chalky, trace stain, no free oil and no odor.

TORONTO SECTION

- 2959-2967' Limestone; cream, white, finely crystalline, few fossiliferous, poor visible porosity, slightly chalky, dense.

LANSING SECTION

- 3050-3055' Limestone; cream, white, finely crystalline, oolitic/fossiliferous, poor scattered pinpoint porosity, chalky.
- 3076-3082' Limestone; cream, white, finely crystalline, oolitic/fossiliferous, oomoldic, scattered oomoldic porosity, trace dark brown stain, no show of free oil and no odor in fresh samples.
- 3100-3110' Limestone; cream, tan, oolitic, poor visible porosity, slightly cherty.
- 3121-3132' Limestone; cream, white, oolitic, oomoldic, fair oomoldic porosity, trace brown stain, trace of free oil and faint odor in fresh samples.
- 3138-3150' Limestone; as above, plus trace, oolitic, limestone, scattered porosity, dark brown stain, no show of free oil and faint odor in fresh samples.
- 3196-3206' Limestone; tan, gray, buff, finely crystalline, cherty in part, dense.
- 3207-3214' Limestone; tan, buff, gray, finely crystalline, few fossiliferous, cherty in part, scattered pinpoint to intercrystalline porosity, trace brown stain, questionable gas bubbles, trace of free oil and faint odor.
- 3228-3241' Limestone; cream, white, finely crystalline, fossiliferous/oolitic, sub oomoldic, slightly chalky, scattered porosity, poor brown stain, no free oil and no odor in fresh samples.
- 3266-3282' Limestone; cream, white, fossiliferous, chalky, poorly developed porosity, scattered dark brown stain, no show of free oil and no odor in fresh samples.

CONGLOMERATE SECTION

3324-3350' Varied colored chert, plus trace sand, white, green, sub rounded, friable, no visible shows.

ARBUCKLE SECTION

3350-3361' Dolomite; white, cream, fine and medium crystalline, poor to fair intercrystalline to vuggy type porosity, golden brown stain, show of free oil and good odor in fresh samples.

Drill Stem Test #1 3298-3361'

Times: 30-45-45-45

Blow: Fair

**Recovery: 60' clean oil
50' oil cut mud
(10% oil, 90% mud)**

**Pressures: ISIP 717 psi
FSIP 560 psi
IFP 23-32 psi
FFP 33-42 psi
HSH 1672-1619 psi**

3361-3380' Dolomite; white, cream, fine and medium crystalline, scattered finely vuggy type porosity, golden brown stain, fair show of free oil and faint odor in fresh samples.

3380-3400' Dolomite; cream, white, fine and medium crystalline, fair intercrystalline porosity, golden brown to dark brown stain, trace of free oil and faint odor in fresh samples.

3410-3430' Dolomite; cream, tan, fine and medium crystalline, scattered dark brown stain, trace of free oil and faint odor in fresh samples.

3430-3450' Dolomite; cream, tan, fine and medium crystalline, poor porosity, trace dark brown stain, no show of free oil and no odor, plus white/cream, boney chert.

3450-3470' Dolomite; cream, tan, fine and medium crystalline, poor porosity, plus chert as above.

3470-3490' Dolomite; tan, buff, finely crystalline, dense.

3490-3510' Dolomite; tan, buff, fine and medium crystalline, poorly developed porosity, white chert and trace pyrite, no shows.

3510-3525' Dolomite and chert; as above, no shows.

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Rotary Total Depth **3525**
Log Total Depth **3524**

Recommendations: 5 ½" production casing was set and cemented in the Driscoll Heirs #5.

Respectfully submitted;



Kurt Talbott,
Petroleum Geologist