Presley Operating LLC
Est. 2015

101 Park Ave, Suite 670
Oklahoma City, OK 73102
405-526-3000

# GEOLOGICAL REPORT
# SVT #1-3
# HASKELL COUNTY, KANSAS

| | |
|---|---|
| Operator: | Presley Operating LLC |
| Well Name: | SVT #1-3 |
| Location: | SW NE SE SW Section 3-T28S-R32W |
| Date Spudded: | August 21, 2019 |
| Surface Casing: | 8-5/8" @ 1773', 24#, J-55 |
| Hole Size: | 7-7/8" |
| Total Depth Reached: | August 29, 2019 @ 5:30 a.m. |
| Drilling Contractor: | Murfin Drilling Company, Rig 21 |
| Geologist: | Gregg Alletag |
| Mud Logger: | Mid-Continent Well Logging, Nick Wier |
| Logging Services: | Weatherford: AIL/GR, 5600' - 1773'<br>PDL/CNL/GR, 5569' - 1773'<br>ML/GR, 5555' - 1773'<br>SL/GR, 5590' - 1773 |
| Elevations: | **GL:** 2918' **DF:** 2927' **KB:** 2929' |
| Status: | Plugged and Abandoned |

| **Formation Tops** | **Depth** | **Subsea** |
|---|---|---|
| Stone Coral | 1856 | +1073 |
| Hutchinson | 2410 | +519 |
| Herington (Chase) | 2707 | +222 |
| Fort Wiley (Chase) | 2886 | +43 |
| Wreford (Chase) | 3018 | -89 |
| Council Grove | 3050 | -121 |
| Neva | 3250 | -321 |
| Wabaunsee | 3436 | -507 |
| Topeka | 3714 | -785 |
| Heebner | 4106 | -1177 |
| Toronto | 4128 | -1199 |
| Lansing A | 4205 | -1276 |
| Lansing B | 4252 | -1323 |
| Lansing C | 4284 | -1355 |
| Lansing D | 4332 | -1403 |
| Lansing E | 4375 | -1446 |
| Lansing F | 4430 | -1501 |
| Lansing G | 4458 | -1529 |
| Lansing H | 4520 | -1591 |
| Lansing J | 4530 | -1601 |
| Kansas City A | 4586 | -1657 |
| Kansas City B | 4664 | -1735 |
| Marmaton | 4713 | -1784 |
| Pawnee | 4820 | -1891 |
| Ft. Scott | 4852 | -1923 |
| Cherokee | 4866 | -1937 |
| Atoka | 5062 | -2133 |
| Morrow | 5108 | -2179 |
| Uppermost Morrow Sand | 5108 | -2179 |
| Upper Morrow Sand | 5122 | -2193 |
| Mississippian | 5208 | -2279 |
| St. Genevieve | 5300 | -2371 |
| St. Louis | 5482 | -2553 |

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**St. Louis (Mississippian)**

The top of the St. Louis was encountered at 5482' (-2553). It was a tan-cream, some off-white limestone, fine to very fine crystalline, moderately firm to firm, some hard, some poor intercystalline porosity, slight trace fracture porosity, slightly chalky, some pyrite. The samples exhibited scattered-to-trace bright yellow/green fluorescence, poor faint dull milky white cut and very thin spotty residual ring cut. The zone recorded a continuous hotwire show of 58 unit show with C1 C2 on the gas chromatograph. The zone drilled off at a rate of 1 min/ft vs 3 min/ft in overlying limestone. Summary log calculations as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 5485'-5486' | 1 porosity foot | 7% porosity | 9% Øml | 74% Sw |
| 5486'-5488' | 2 porosity feet | 9% porosity | 9% Øml | 84% Sw |
| 5488'-5490' | 2 porosity feet | 8% porosity | 9% Øml | 72% Sw |
| 5490'-5492' | 2 porosity feet | 7% porosity | 7% Øml | 64% Sw |
| | 7 porosity feet | 8% Avg Øcp | 8.5%Avg Øml | 74% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

Evaluation of Open Hole log calculations, samples and hotwire/chromatograph response indicates the St. Louis zone is wet and does not merit testing.

**Upper Morrow Sand**

The top of the Upper Morrow Sand was encountered at 5122' (-2193). No sand was recovered in sample for examination through this interval, however, the zone did exhibit a 98 unit show on the continuous hotwire with C1 C2 recorded on the gas chromatograph. Summary log calculations as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 5126'-5128' | 2 porosity feet | 33% porosity | no Øml | 60% Sw |
| 5128'-5130' | 2 porosity feet | 22% porosity | no Øml | 69% Sw |
| 5130'-5132' | 2 porosity feet | 19% porosity | no Øml | 79% Sw |
| | 6 porosity feet | 22.5% Avg Øcp | | 69% Avg Sw |

Note: no microlog effective porosity nor perm was exhibited

Evaluation of Open Hole logs indicate the Upper Morrow Sand is wet and non-commercial. The Upper Morrow Sand does not merit testing,

**Uppermost Morrow Sand**

The top of the Uppermost Morrow Sand was encountered at 5108' (-2179). No sand was recovered in sample for examination through this interval, however, the zone did exhibit a 161 unit show on the continuous hotwire with C1 C2 recorded on the gas chromatograph. Summary log calculations as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 5111'-5112' | 1 porosity foot | 19% porosity | 16% Øml | 32% Sw |
| 5112'-5114' | 2 porosity feet | 20% porosity | 16% Øml | 35% Sw |
| | 3 porosity feet | 19.5% Avg Øcp | 16%Avg Øml | 33% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

The Uppermost Morrow Sand calculates productive and recorded shows on the hotwire, however, it is a very thin zone which raises concern for EUR potential. Completion of the Uppermost Morrow is not recommended due to the lack of commercial reserve potential. The nearest correlative zone with significant Uppermost Morrow Sand is the Bedell Field, 10 miles to the northeast, which cum'd 506,000 BO after primary and secondary recovery from 30'-40' thick sand, average porosity of 23%.

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**Middle Marmaton**

The top of the Middle Marmaton was encountered at 4752' (-1823). It was a light grey, some dark grey limestone, fine to very fine crystalline, poor intercrystalline porosity, moderately firm to firm, some hard, with occasional sand stringers. The samples exhibited faint green fluorescence, very weak dull milky green-white cut and faint thin white to greenish residual ring cut. The zone drilled-off at 1 min/ft vs 4 min/ft in overlying limestone. No significant hotwire shows. Summary log calculations as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 4756'-4758' | 2 porosity feet | 14% porosity | 11.5% Øml | 61% Sw |
| 4758'-4760' | 2 porosity feet | 13.5% porosity | 12% Øml | 63% Sw |
| 4760'-4762' | 2 porosity feet | 15% porosity | 12% Øml | 54% Sw |
| 4762'-4764' | 2 porosity feet | 19% porosity | 11% Øml | 50% Sw |
| 4764'-4766' | 2 porosity feet | 14.2% porosity | 12% Øml | 67% Sw |
| | 10 porosity feet | 8% Avg Øcp | 12%Avg Øml | 60% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

Evaluation of Open Hole log calculations, weak sample shows and the lack of significant hotwire shows indicate the Middle Marmaton does not merit testing.

**Upper Marmaton**

The top of the Upper Marmaton porosity zone was encountered at 4741' (-1812). It was a light tan cream occasion buff limestone, medium to fine crystalline, argillaceous, and slightly sandy, with trace fracture porosity. The samples exhibited scattered dull-slightly bright greenish fluorescence, faint dull milky white cut and faint spotty white residual ring cut. A significant show of 339 units was recorded on the hotwire with C1 C2 C3 exhibited on the gas chromatograph. Summary Open Hole log calculations are as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 4742'-4744' | 2 porosity feet | 12% porosity | 11% Øml | 30% Sw |
| 4744'-4745' | 1 porosity foot | 12% porosity | no Øml | 28% Sw |
| | 3 porosity feet | 12% Avg Øcp | 11%Avg Øml | 29% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

Evaluation of Open Hole logs, samples, hotwire/chromatograph shows, and correlative relationship to offset wells indicates the Upper Marmaton should be productive, however, only a very thin, 3 porosity feet, was encountered in the SVT #1-3. The thin interval encountered raises concern for EUR potential. Completing of the Upper Marmaton is not recommended due to the lack of commercial reserve potential.

**Kansas City B**

The top of the Kansas City B was encountered at 4664' (-1735). It was a light tan-cream, scattered off-white limestone, medium to fine crystalline, occasional micro-crystalline, blocky, slightly argillaceous, slightly sandy, scattered poor intercrystalline porosity, and trace fracture porosity. The samples exhibited scattered faint dull greenish fluorescence, faint dull milky white cut and a very faint spotty white residual ring cut. A combination of connection gas/show gas of 183 units was recorded. The zone drilled-off at 1 min/ft vs overlying strata that drilled at 3-1/2 min/ft.. Summary Open Hole log calculations are as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 4666'-4668' | 2 porosity feet | 15% porosity | 11% Øml | 36% Sw |
| 4668'-4670' | 2 porosity feet | 14% porosity | 12% Øml | 40% Sw |
| 4670'-4571' | 1 porosity foot | 12% porosity | 12% Øml | 46% Sw |
| | 5 porosity feet | 14% Avg Øcp | 12%Avg Øml | 41% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

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Evaluation of Open Hole logs, weak sample shows and hotwire/chromatograph shows indicate the Kansas City B would only contribute limited reserves. A correlative offset, K & G #1-29, which has a thicker interval, 14 porosity feet, cum'd only 7,498 BO in 2 years prior to plugging.

**Kansas City A**

The top of the Kansas City A was encountered at 4586' (-1657). It was a tan-cream, some off-white limestone, fine to very fine crystalline, moderately firm to firm, some hard, occasional sand stringers, poor intercrystalline porosity and trace of fracture porosity. The samples exhibited scattered dull-bright white/green fluorescence, slow milky white cut with a thin spotty residual ring cut. There was no hotwire/chromatograph shows in the porosity interval. The porosity zone did drill-off at a rate of ½ min/foot. Summary log calculations are as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 4586'-4588' | 2 porosity feet | 25% porosity | 11% Øml | 21% Sw |
| 4588'-4590' | 2 porosity feet | 24% porosity | 13%Øml | 24% Sw |
| | 4 porosity feet | 24.5% Avg Øcp | 12%Avg Øml | 22.5% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

The Kansas City A calculates productive on Open Hole logs, however, exhibited weak sample show and no recorded hotwire show. It should be noted this zone produced in a 3 mile offset well, however, the Kansas City A was commingled with 3 other zones with limited success; reported cum 1923 BO & 29 MCFD in 4 years. The limited offset performance and thin interval, 4 porosity feet, indicates the Kansas City A would yield a limited amount of reserves from the SVT #1-3.

**Lansing J**

The top of the Lansing J was encountered at 4530' (-1601). The porosity zone of interest was from 4558' to 4568'. It was a grey-light grey, some off-white limestone, mostly fine to very fine crystalline, occasional micro-crystalline, poor intercrystalline porosity, moderately firm to firm with some hard, some very fine to fine grained sandstone clusters with poor intergranular porosity. The samples exhibited poor scattered bright green-yellow fluorescence, very light and slow milky white cut and weak spotty residual cut. The continuous hotwire recorded a 191 unit show with C1 C2 on the gas chromatograph. Summary log calculations are as follows (see attached detail log analysis):

| | | | | |
|---|---|---|---|---|
| 4558'-4560' | 2 porosity feet | 11% porosity | 9% Øml | 36% Sw |
| 4560'-4562' | 2 porosity feet | 11.5% porosity | no Øml | 35% Sw |
| 4562'-4564' | 2 porosity feet | 10.5% porosity | 8%Øml | 55% Sw |
| 4564'-4566' | 2 porosity feet | 10% porosity | 9% Øml | 47% Sw |
| 4566'-4568' | 2 porosity feet | 11% porosity | no Øml | 39% Sw |
| | 10 porosity feet | 11% Avg Øcp | 8.5%Avg Øml | 42% Avg Sw |

Øml = exhibited microlog effective porosity and permeability

Evaluation of Open Hole logs, sample shows, hotwire/chromatograph shows combined with offset well control indicates the Lansing J would have limited recoveries.

Gregg Alletag
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