

## Geological Report

Baker #SCZ-I-22  
W2-SW-NW, Sec. 26, T18S, R22E  
1980' FNL & 330' FWL  
Miami County, KS  
API #15-121-30483-00-00

**Operator:** SCZ Resources LLC, Jorge Ranz, 8614 Cedarspur Drive, Houston, TX,  
77055

**Drilling Contractor:** JTC Oil, Inc.

**Well Site Geologist:** Mark Brecheisen

**Date Drilled:** August 20<sup>th</sup>, 2014

**Size of Hole:** 6"

**Total Depth:** 420'

**Elevation:** 966' (estimated)

**Drilling Fluid:** Compressed air with fresh water injection

**Surface casing:** 20' of 7" casing cemented with 3 sacks of cement to surface

**Formation Tops:** Formation tops have not been correlated to electric logs

**Field Name:** Paola-Rantoul

**Status:** Injection Well

**Oil Shows:** Hepler Sandstone @ 320'-325'  
Wayside Sandstone @ 349'-376'

**Water Encountered:** Picked up a significant amount of water in top 2' of Wayside Sandstone formation

**On Location:** August 20<sup>th</sup>, 2014, 8:48 AM. Drilling depth of 320'; left location @ TD 420' @ approximately 9:13 AM.

**Notes:** Well cuttings were examined at rig and discarded. Samples of zones of interest were saved and examined with binocular microscope and UV light.

### **Top of the Hepler Sandstone @ 320'**

320'-325' Sandstone; light gray to dark brown. Very fine-grained. Very well-sorted with angular to subrounded grains. Very micaceous. Very argillaceous. Laminated in part. Friability overall fair to good, with traces of vugular porosity on some sample surfaces. Mottled to laminar, dark brown oil staining on sample surfaces. Saturation overall poor to fair. Sample had a strong petroliferous odor. Fair free oil show to sample surfaces; poor free oil show to pit. 30-35% mottled, variegated yellow hydrocarbon fluorescence. Slow, streaming to blooming, fair milky blue cut; no residual oil show to tray after cut

### **Top of the Wayside Sandstone @ 349'**

349'-353' Sandstone; light to dark brown. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. "Sugar sand" section. Traces of interbedded shale present in sample. Clean; poorly-cemented grainstone. Friability overall very good to excellent, with abundant vugular porosity on sample surfaces. Even, light to dark brown oil staining on sample surfaces. Saturation overall very good. Sample had a very strong petroliferous odor. Very strong free oil show to sample surfaces; very strong, gas-cut oil show to pit. 80-85% even, variegated yellow hydrocarbon fluorescence. Fast, even, very strong milky blue cut; excellent residual oil show to tray after cut

Note: Top 1'-2' of this sample was "washed out" from previous water flooding attempts. After cutting this sample, observed a significant increase in formation water to pit; also indicating this scenario. No perforations should be above 351' in this well.

353'-357' Sandstone; dark brown. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. "Sugar sand" section. Traces of interbedded shale and limestone present. Very clean; poorly-cemented grainstone. Friability overall very good to excellent, with abundant vugular porosity on sample surfaces. Even, dark brown oil staining on sample surfaces. Saturation overall very good to excellent. Sample had an excellent petroliferous odor. Excellent free oil show to sample surfaces and to pit. 90% even, medium-bright yellow hydrocarbon fluorescence. Very fast, even, strong milky blue cut; strong residual oil show to tray after cut

357'-361' Sandstone; medium-dark to dark brown. Mottled in part. Sample is a compilation of "sugar sand" and porous, calcareous sandstone. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. Friability overall fair to good, with abundant vugular porosity on sample surfaces. Slightly mottled to mostly even,

medium-dark to dark brown oil staining on sample surfaces. Saturation overall very good to excellent. Sample had an excellent petroliferous odor. Very strong free oil show to sample surfaces; very strong, gas-cut, free oil show to pit. 90-95% even, medium-bright yellow hydrocarbon fluorescence. Fast, even, excellent milky blue cut; good residual oil show to tray after cut

361'-365'

Sandstone; medium-dark to dark brown. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. Calcareous. Traces of light gray, non-porous, interbedded limestone present. Majority of sample is porous, calcareous sandstone. The presence of numerous, individual sand grains covering sample surfaces indicates presence of "sugar sandstone" within this footage, but none was collected. Friability overall fair, with abundant vugular porosity on sample surfaces. Slightly mottled to mostly even, medium-dark to dark brown oil staining on sample surfaces. Saturation overall very good. Sample had a strong petroliferous odor. Strong free oil show to sample surfaces and to pit. 95-98% even, medium-bright yellow hydrocarbon fluorescence. Fairly fast, streaming to even, very strong milky blue cut; strong residual oil show to tray after cut

365'-369'

Sandstone; dark to very dark brown. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. Traces of non-porous, interbedded limestone and shale present in sample. Majority of sample is clean, poorly-cemented grainstone. Friability overall very good to excellent, with abundant vugular porosity on sample surfaces. Even, dark to very dark oil staining on sample surfaces. Saturation overall very good to excellent. Sample had an excellent petroliferous odor. Excellent free oil show to sample surfaces and to pit. 95% even, medium-bright yellow hydrocarbon fluorescence. Fast, even, excellent milky blue cut; excellent residual oil show to tray after cut

369'-373'

Sandstone; very dark brown. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. Traces of light gray limestone and shale present in sample. Clean; poorly-cemented grainstone. Friability overall very good, with abundant vugular porosity on sample surfaces. Traces of calcareous sandstone present. Even, very dark brown oil staining on sample surfaces. Saturation overall excellent. Sample had an excellent petroliferous odor. Excellent free oil show to sample surfaces and to pit. 80% slightly mottled to even, variegated yellow hydrocarbon fluorescence. Fast, even, excellent milky blue cut; excellent residual oil show to tray after cut

373'-376'

Sandstone; very dark brown. Trace shale and limestone present in sample. Very fine to fine-grained. Well-sorted with angular to subrounded grains. Slightly micaceous. Glauconitic. Some sandstone samples slightly calcareous. Friability overall very good, with abundant vugular porosity on sample surfaces. Mottled to even, very dark-brown oil staining on sample surfaces, with free oil observed around some vugular pores. Saturation overall excellent. Sample had an excellent petroliferous odor. Excellent free oil show to sample surfaces; exceptional free oil show to pit. 35-40% slightly mottled to even, variegated yellow hydrocarbon fluorescence. Fast, even, very strong milky blue cut; very strong residual oil show to tray after cut

**TD 420' @ approximately 9:13 AM, August 20<sup>th</sup>, 2014**

A handwritten signature in cursive script, reading "Mark D. Brechler Sr.", is centered on the page. The signature is written in dark ink on a light-colored background.