JOLEN OPERATING COMPANY

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GEOLOGICAL REPORT
KREGAR 1-34
NE NE NE, SECTION 34-29S-22W
FORD COUNTY, KS

Summary

The above captioned well was drilled to a total depth of 5,450 feet on Feb. 13, 2018. A one-man logging unit and geologist were on location from 4,100 feet to TD. At TD, Pioneer electric logs were run that consisted of Dual Induction, Compensated Neutron-Density, Sonic Log, and Micro-log. From the data collected while drilling and analyzing, hydrocarbon shows were encountered in the Mississippian St. Louis Dolomite, and the Mississippian St. Louis Oolite.

St Louis

The top of the Mississippian is the St. Louis formation and was cut at 5,257 feet (-2,828). This is high to both the offset show wells the Siebel 'A' 1 with St. Louis cut at (-2,840) and the Butz 'B' 1 with the St. Louis cut at (-2,847). Throughout the upper St. Louis interval there was free oil in the samples with cherty tripolitic limestone and oolitic limes with oil stain, flash yellow streaming milky cut with heavy yellow residual ring. There were also several gas kicks and drill offs in this upper part of the St. Louis. *Note: The Rooster Rig gas detector was malfunctioning during this interval, but repaired quickly with no additional problems below 5,310 feet. From 5,300 to 5,310 feet an oolitic limestone was cut which has good microlog, porosity and resistivity, a 72 Unit Gas Kick, and free oil released in the samples. Samples cut flash, milky going to streaming cut with yellow fluorescence from oil stained oolites and dolomitic lime.

At 5,320 to 5,330 feet a 1,002 Unit Gas Kick with free oil released into the samples from the St. Louis Dolomite. Samples were described as dolomite light buff, very fine grain, very finely oolitic, some chert with dark brown staining, flash, thick streaming, milky cut with yellow residual ring. From 5,350 to 5,396 the lower St. Louis Dolomites had ratty gas kicks and decreasing quality of shows.

Two drill stem tests were run over the St. Louis interval. The first DST was run from 5,263-5,324 feet and recovered 2,170 feet of gas in the pipe with 181 feet of slight gas and oil cut mud and 25 feet of gas cut mud. The pressure readings were: 33-74/70-87 flowing pressures, 1,575-1,491 shut-in pressures, with flow times and shut-in times of 30-60-30-60 minutes. The second test was run from 5,300-5,335 feet and recovered 124 feet of

mud cut water and 65 feet of slight oil and water cut mud. The pressure readings were: 24-62/68-101 flowing pressures, 1,564-1,531 shut-in pressures, with flow times and shut-in times of 30-60-45-90 minutes.

Conclusion

It is recommended to set pipe and production test the Kregar 1-34. The Kregar 1-34 had good shows of oil and gas, including free oil in the samples throughout the St. Louis. The logs show good porosity and permeability over the St. Louis, have mud-cake over the targeted perf's, and log calculations indicate recoverable reserves of 102,752 BO from 5,280-5,330.

It is believed the DST results point to formation damage from the mud. This helps explain why this reservoir has been overlooked until Vincent Oil Company's discovery of Kingsdown NW and Mulberry Creek in the 2009-2010 time-frame. In fact, based on conversations with Vincent Oil's mudlogger, Vincent planned to plug the Mulberry Creek discovery well based on the results of a DST, but instead ran pipe and swab tested. Since 2009, Vincent has produced more than 2 million barrels and 11 Bcf from the Mulberry Creek and Kingsdown NW Fields.

The Kregar 1-34 was drilled as an up-dip offset to the Siebel 'A' 1 and the Butz 'B' 1 which both recorded shows in the St. Louis Dolomite. The gas kick of 1,000+ units is similar to the good producers in the Kingsdown NW and Mulberry Creek Fields. DST pressure readings were good at 1,550+, and are similar to DST pressure readings in the Kingsdown NW Field for wells that IP'd from 80-120 bopd. The shut-in pressures are also indicative of good reservoir rock over the interval, with gassier results in the upper part and oily results in the base, further suggesting a hydrocarbon trap at this location.

A typical production test in the Kingsdown NW and Mulberry Creek fields consisted of running casing to TD, perforating zones, acidizing, and allowing the well to set-up overnight. Wells were swabbed 1-2 days before either being placed on pump or plugged.

Respectfully Submitted,

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Petroleum Geologist

ELECTRIC LOG TOPS

		JOLEN KREGAR 1-34 NE NE NE 32-29S-22W		IMPERIAL OIL SIEBEL 'A' 1 C SE NE 16-30S-21W
BS. HEEBNER (Subsea)	(-1925)	4354	(-1945)	4377
LANSING (Subsea)	(-2082)	4511	(-2107)	4539
BS. STARK SH. (Subsea)	(-2450)	4879	(-2459)	4891
PAWNEE (Subsea)	(-2655)	5084	(-2660)	5092
CHEROKEE SH. (Subsea)	(-2703)	5132	(-2709)	5141
MISS. UNCON. (Subsea)	(-2828)	5257	(-2840)	5272