**The Impact of Opaline Porcilinite on Log Properties – Quantifying and Accounting for its Effects**

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The occurrence of opal as a producing reservoir is uncommon; however, when such reservoirs are found, they tend to be prolific producers with the ability to produce for may years. Indeed, in numerous examples from California and Japan, these reservoirs have continually produced for ~30 years.

At a recently concluded drill campaign in 2017, such a reservoir was penetrated offshore Suriname. The drilled well met with pre-drill expectations observed on the seismic, with a thick net reservoir that had good porosity characteristics characterized by a brightening on the amplitudes. While the well was non-hydrocarbon bearing, there was evidence of hydrocarbon presence in the well in the form of a collected gas sample downhole.

The effect of opal on the logs is varied; it is observed that opaline has a smaller effect on sonic and neutron logs but has a larger effect on the Density log. Both PEF and DRHO do not show significant anomalous values; DRHO is ~ 0.058 ± 0.012 g/cc and PEF is ~3.73 ± 0.79. As the well was wet, the effect on resistivity is unclear, but given its microporous nature, resistivity suppression is very possible.

A series of core measurements done on collected sidewall core samples showed that samples had good porosity, ranging from 25-41 %. The permeability, while low at < 10 mD, were in line with analogs found elsewhere.

This paper will discuss the observations made regarding the effect that opaline has on the logs, core data and highlight the reservoir potential such reservoirs have with reference to modern logs taken across an opaline reservoir.

As the distribution of opal in reservoir rocks can be heterogeneous as well, there is a need to understand its overall effect on the raw log measurements. An evaluation of its concentration, distribution in the reservoir (vertically and horizontally) and concentration can improve quantitative analysis and de-risk other potential opportunities.