

## **The Origin and Extent of Coarse Grained Sandstones in the Viking Formation near Dodsland, Saskatchewan**

**Kain J. Michaud<sup>1</sup>**

<sup>1</sup>*Petrel Robertson Consulting Ltd., Calgary*

### **Abstract**

- The Viking Formation in west-central Saskatchewan is characterized by a regional sanding-upward succession, interpreted as shoreface sandstones prograding into a shallow marine basin towards the north east.
- Core analysis and production data indicate coarse-grained cherty sandstone is the most permeable lithofacies, and where present it can significantly improve production rates.
- Coarse-grained cherty sandstones are locally interbedded with the regional sanding-upward succession. These coarse sandstones are herein interpreted as submarine flows-namely turbidites and hyperpycnites. Periods of high river-flow caused significant sand deposition at the coast during storms or river floods, and that sand avalanched down the shelf slope and was deposited as distinct event beds.
- Mapping the coarse grained sandstone facies indicates trends consistent with our model as well as production curves.