

3. Source potential for the generation of liquid hydrocarbons generally ranges from fair to excellent in the Eastern View Coal Measures (exinite contents 10-40% DOM contents 10-60%). Source potential for gas generation is generally excellent (vitrinite contents 25-90%).

The Cretaceous sediments have fair to excellent source potential for the generation of liquid hydrocarbons due to the presence of bituminite and lamalginite rich bands.

4. Free oil is present in a large proportion of the samples examined. The majority of this oil is thought to have been generated in situ. This is supported by the abundance of exsudatinite in these samples and the similar fluorescence colours of the exsudatinite and oil. The apparent lack of migrated hydrocarbons may be related to low reservoir porosity and permeability.
5. Bitumen containing small accumulations of light oil is present in a large proportion of samples in the interval 2169-3366 metres depth. This bitumen is likely to be a contaminant (gilsonite) from the drilling mud.
6. Bedding in some shale cuttings is contorted by the turbo drilling bit ( $\approx$ 4000 metres depth) however, these cuttings do not appear to have oxidation resins (Plate 7).
7. Reflectance measurements taken some on Cretaceous sediments are influenced by reworked vitrinite (Table 1; Figure 1).

#### 6. REFERENCES

- MONIER, F., POWELL, T.G. and SNOWDON, L.R., 1983. Qualitative and quantitative aspects of gas generation during maturation of sedimentary organic matter. Examples from Canadian Frontier basins. In : Bjoroy, M. et al., (eds), *Advances in Organic Chemistry* 1981, Wiley, pp. 487-495.
- SNOWDON, L.R., and POWELL, T.G., 1982. Immature oil and condensate-modification of hydrocarbon generation model for terrestrial organic matter. *Bull. Am. Assoc. Petrol. Geol.*, 66, pp. 775-778.