The Upper Cretaceous (Campanian) Belly River Group Coals of SW Saskatchewan, Canada

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Abstract
Preliminary investigation of the Belly River Group in SW Saskatchewan has revealed significant coal development in an area lying south of T15, and between R20W3 and the Alberta border. Within this area up to 17 coal seams have been identified, ranging in thickness from 0.1 m to 3.3 m (mean = 0.6 m). Coal seams are primarily concentrated within a 40-50 m thick zone near the top of the Belly River Group, lying at depths of 200-500 m. Net coal thickness is greatest along a north-trending zone in R25-26W3 and varies from 5 m to 9 m, with up to 12 m developed locally.

Coal along the trend line of greatest net thickness is dominated by shaly and dull lithotypes, with subordinate amounts of banded and bright coal. Cleat is well developed in bright coal, becoming poor to absent with increasing dullness and shalyness.

The estimated total volume of coal is 48×109 m3, with existing gas desorption data suggesting a gas resource potential of up to 46×109 m3 (1600 bcf). Coals are sub-bituminous A in rank, indicating gas generation is likely dominated by biogenic processes.

The Vidora gas pool coincides with the trend line of maximum net coal development and produces from sands within the lowermost Bearpaw Formation. These sands can lie as little as 20 m above the top of the Belly River Group (e.g. well 15-07-004-25W3) and gas in the Vidora pool may well contain a coal-sourced component, representing expelled excess gas from the underlying coals.