Evidence for a hydrocarbon system, such as bituminous residues and oil-staining, was found in some of the Conawapa cores. Bituminous residues are present along open fractures, as shown in Figure 5. The hydrocarbon system is part of the Geological Survey of Canada Geo-mapping for Energy and Minerals (GEM) program, whose energy side aims to map the geology of Canada. The GEM program includes various tasks, such as preparing core logs, preparing core storage, and producing geologic maps. The core logging is important for building a stratigraphic framework from which a 3D model of the basin can be developed. This information will be used to better understand the geological evolution and potential hydrocarbon source rocks.

**Hydrocarbon systems evidence**

<table>
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<th>Core logging</th>
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| This summer, the Manitoba Geological Survey (MGS) and the Geological Survey of Canada (GSC) examined 17 geotechnical cores from Manitoba Hydro's core repository in Gillam; the cores come from four sites on the Nelson River: the Conawapa Area, a Conawapa Area II and Gillam Island site. These sites and the locations of the geotechnical cores are shown in Figure 2. The MGS also logged 14 drillhole cores from pendurate wells, mineral exploration drillholes and stratigraphic test holes in the HBL. This information will be used to build a stratigraphic framework from which to analyze the HBL. Preliminary results from the core logging indicate a more complex stratigraphic system than expected. Stratigraphic correlations are difficult because there are differences in the regional geology, including changes in sedimentation rates and changes in the source of the sediments. Paleomagnetic studies are being conducted to obtain an accurate stratigraphy for the HBL. This information will be used to better understand the geological evolution and potential hydrocarbon source rocks.

**Stratigraphy**

Manitoba Hydro has developed an internal, informal stratigraphic nomenclature to describe the sedimentary units observed in the vicinity of their sites (MGS). These units are not based on formal stratigraphic boundaries, but rather on lithological and textural changes, since Manitoba Hydro's cores were drilled for geotechnical purposes. The correlation of the Manitoba Hydro units to other cores in the HBL, however, is not straightforward. Manitoba Hydro units are used to describe the sedimentary units in the vicinity of their sites, while the GSC units are used to describe the sedimentary units in the HBL. The GSC units are based on formal stratigraphic boundaries, such as changes in the source of the sediments, changes in the sedimentation rates and changes in the regional geology. The correlation of the Manitoba Hydro units to the GSC units is not straightforward. The authors wish to thank G. Benger, V. Varma, R. Unruh and the summer students from the Manitoba Geological Survey (MGS) Rock Preparation and Core Storage Facility for their help. The authors also thank D. Campbell (MGS) and K. Mozdzen (Manitoba Hydro) for their assistance in preparing the Conawapa core for viewing.

**Economic considerations**

A good comprehension of the stratigraphy of the HBL and how it correlates and changes across the basin is critical in understanding the geology and potential hydrocarbon source rocks. The economic potential of the HBL is related to the stratigraphy and the sedimentary rocks. The authors wish to thank G. Benger, V. Varma, R. Unruh and the summer students from the Manitoba Geological Survey (MGS) Rock Preparation and Core Storage Facility for their help in locating available cores and preparing it for viewing. The authors also thank T. McDuff from Manitoba Hydro for giving so full access to the Conawapa cores at the Manitoba Hydro Kitea Core Warehouse in Gillam. The authors wish to thank G. Benger, V. Varma, R. Unruh and the summer students from the Manitoba Geological Survey (MGS) Rock Preparation and Core Storage Facility for their help in locating available cores and preparing it for viewing. The authors also thank D. Campbell (MGS) and K. Mozdzen (Manitoba Hydro) for their assistance in preparing the Conawapa core for viewing.