

CHARACTERIZATION OF A CATASTROPHIC FLOOD SEDIMENT LAYER: GEOLOGICAL, GEOTECHNICAL, BIOLOGICAL, AND GEOCHEMICAL SIGNATURES

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REFERENCE

Tremblay, H., Desrosiers, G., Locat, J., Mucci, A., and Pelletier, É. “**Characterization of a Catastrophic Flood Sediment Layer: Geological, Geotechnical, Biological and Geochemical Signatures,**” *Contaminated Sediments: Characterization, Evaluation, Mitigation/Restoration, and Management Strategy Performance, ASTM STP 1442*, J. Locat, R. Glavez-Cloutier, R. C. Chaney, and K. R. Demars, Eds., ASTM International, West Conshohocken, PA, 2003.

ABSTRACT

In 1996, an important rainstorm took place in the Saguenay region, Canada, that caused sever flooding and erosion of a large amount of post-glacial sedimentary material. Consequently, about 20 million tons of sediment were deposited in the upstream part of the Saguenay Fjord, covering the recent, contaminated sediments with a 10 to 60 cm thick layer of relatively clean material. This flood layer was distinguished from the pre-flood sediments by various properties: low consistency and low resistance, high water content, the absence of benthic organisms, or the presence of inherited geochemical components. In this study, we evaluated the criteria used by the various investigators to identify the 1996 flood deposit, then finally compared its signature. Subsequently, we assessed the spatial variability of the deposit and its effect on the interpretation of temporal studies.