

Applying available internal erosion criteria to dams with cores of glacial till - a reassessment of a 1980s sinkhole

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SYNOPSIS Most available criteria for assessing susceptibility to internal erosion and internal instability are laboratory or empirically based on narrowly graded materials. Glacial till, which is a typical material used for impervious cores in Swedish dams as well as in dams in Canada and other areas once glaciated, is generally broadly graded, a characteristic that primarily stems from its glacial origin and mode of formation. Assessing internal erosion in glacial till core dams may be difficult, and their track record shows a greater susceptibility to internal erosion and sinkhole development than that of other types of dams. This paper will, on the one hand, discuss ways of assessing dams composed of glacial till, and on the other hand it will cover the reassessment of a 1980s sinkhole incident in a Swedish dam, where a sinkhole was believed, at the time, to be caused by internal erosion. A step-by-step assessment is conducted by applying current available and suitable methods to help determine whether the incident was internal erosion dependent.