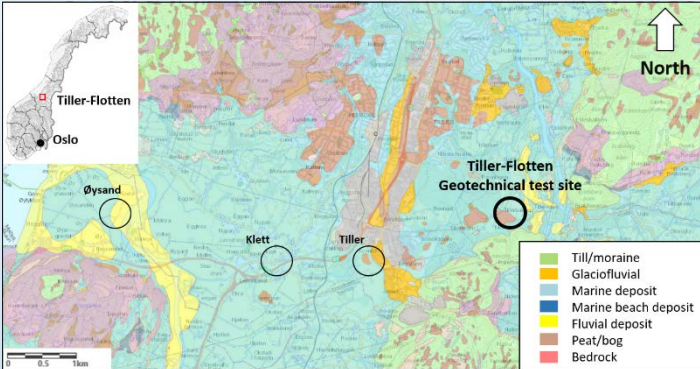




NGTS

Quick clay site – Tiller Flotten



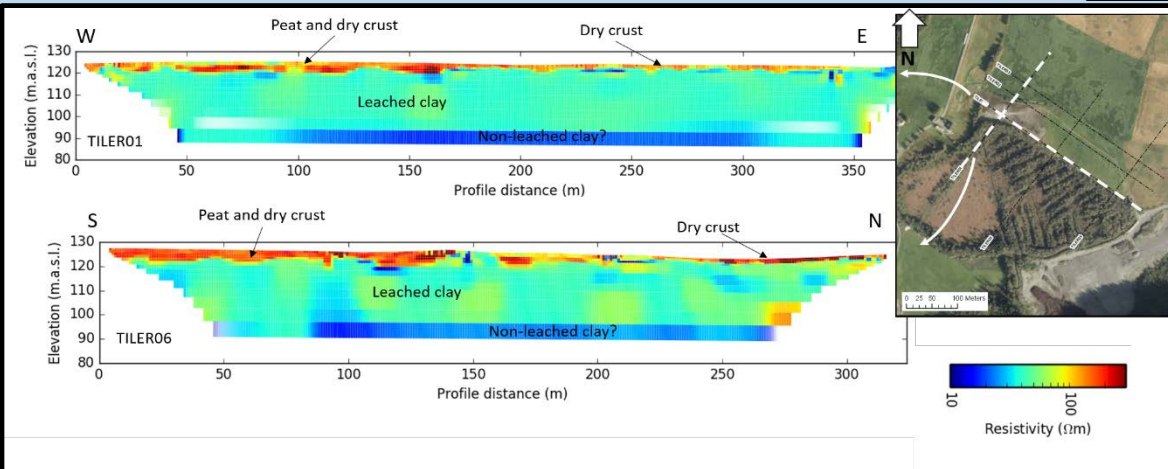
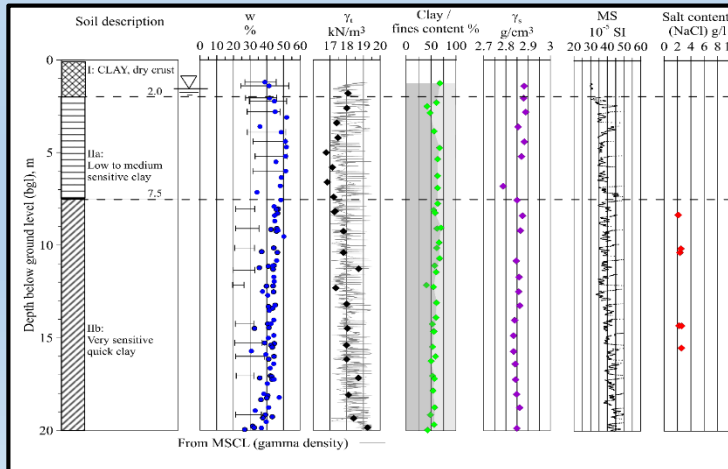
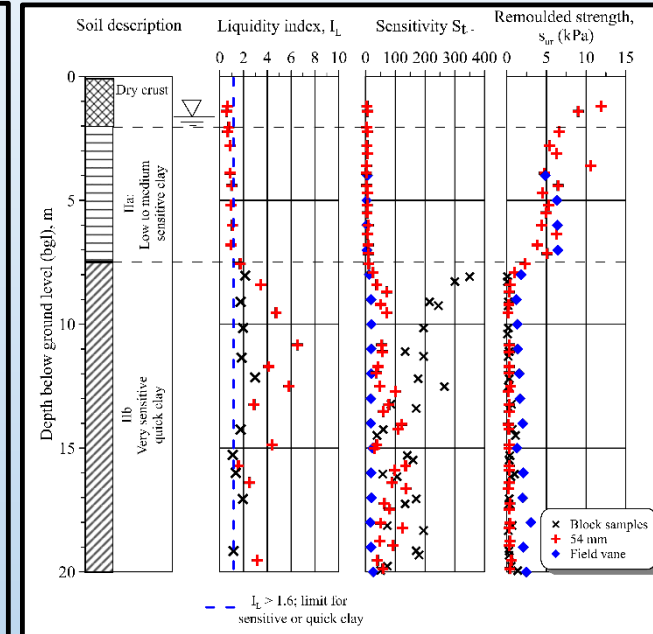
A quick clay landslide occurred on 30 Dec 2020 in Ask in Gjerdrum claimed the lives of 10 people. Photo vg.no



Deposits of sensitive marine clay are found over large areas of Norway, Sweden, Finland and Canada. Such deposits are extremely challenging to deal with for geotechnical engineers. In particular, quick clay deposits are frequently associated with landslides triggered by natural or man-made events. Examples of such landslides in the Trondheim region are numerous, with well-known events at Rissa (1978), Kattmarka (2009) and Esp (2012), Gjerdrum (2020). The challenges for geotechnical engineers working with sensitive clay material are often associated with sampling of undisturbed material, interpretation of in situ and laboratory data, and mapping the extent of the sensitive clay for landslide hazard assessment. Thus, there is a need to provide guidance for practicing engineers working with such problematic soils.

The Tiller-Flotten research site was developed through the Norwegian GeoTest site (NGTS) project. The site consists of a more than 50 m thick marine clay deposit. The top 7.5 m of the deposit shows a low to medium sensitivity, while sensitivity increases up to approximately 200 from 7.5 to 20 m below the ground surface. A wide variety of in situ and laboratory data have been acquired to investigate the geotechnical, geological and geophysical properties of the material.

During the next 20 years, there will be increasing use of this benchmark test site. The site can be used as a research tool, training and teaching facilities and as a basis for development of new soil models, testing of new investigation methods and further advance the state-of-the-art in sensitive clay material.



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