

Rissa Landslide

The Rissa landslide, which occurred on April 29, 1978, is famous for both its demonstration of the behavior of quick clay under rapid loading conditions and the fact that the slide was caught on video by an amateur photographer. The effects of the slide were not catastrophic with only one casualty and moderate property damage. However, the knowledge obtained from the event, due to thorough documentation and testing, has played a central role in the improved understanding geotechnical engineers have of quick clay behavior.

The slide occurred in two phases: a retrogressive phase and a flake-like phase. The retrogressive phase began after 700 m³ of earth fill was placed along the shore of Lake Botnen. Approximately 70-90 m of shoreline slid into the lake. The slide then moved further inland retrogressively in the southwest direction. At the end of the retrogressive stage, an area ranging from 25,000 m² to 30,000 m² had been disturbed from the slide. Immediately after the retrogressive state came the flake-type sliding. This stage included two major slide areas. The first area, approximately 150 x 200 m, slid in one large piece down the slope of the natural ground towards the lake. A second section of earth then slid in a flake-like fashion.

This landslide resulted in increased understanding of the behavior of quick clays. Through detailed tests performed following this slide, engineers gained a better understanding of the role of salt in clay sensitivity, as well as the ability to define the “critical stress” of a quick clay.

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