



QUICK CLAY SURVEY AT THE RIVER GÖTA ÄLV

Preliminary results

A resistivity survey was carried out next to the river Göta älv by Engineering Geology, Lund University, and Swedish Geotechnical Institute during 31st May – 4th June 2010. The objective was to evaluate the value of geoelectrical imaging as a tool for separating areas with possible quick clay from areas without quick clay in landslide risk studies. The result was very successful.

Problem

To evaluate the value of geoelectrical imaging as a tool for separating areas with possible quick clay from areas without quick clay in landslide risk studies next to the river Göta älv.

Solution

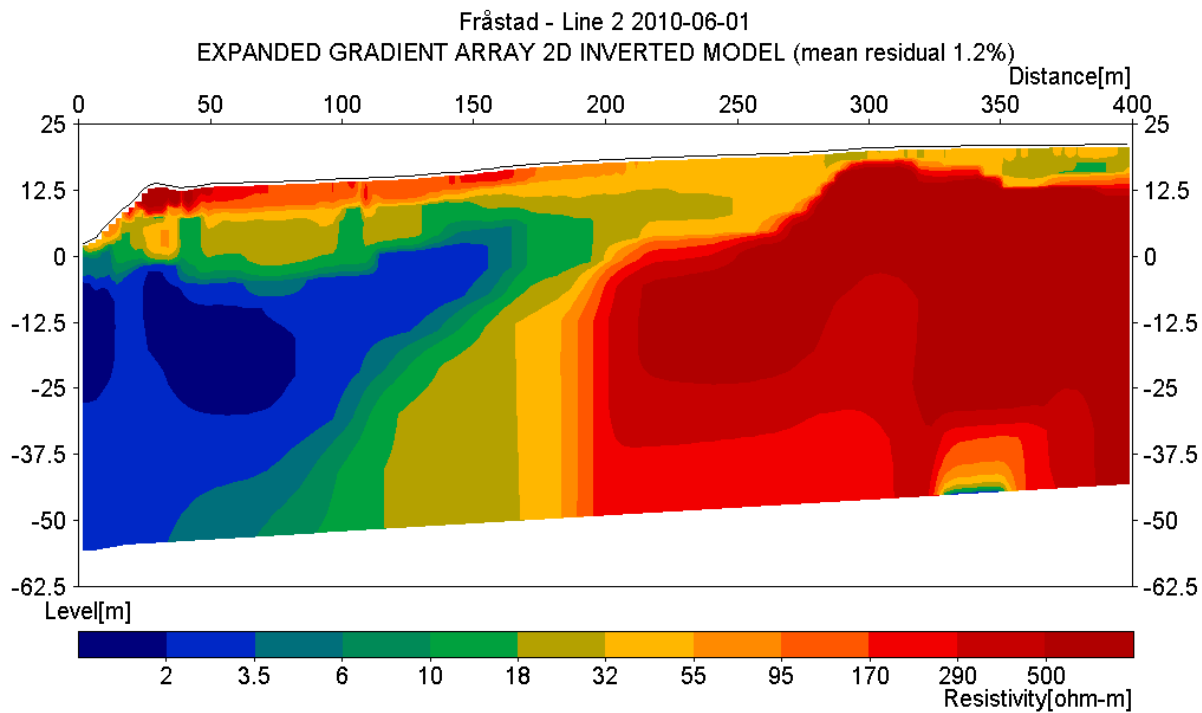
The instrument used was an ABEM Terrameter LS equipped with 12 measuring channels, and standard electrode cables with

21 take-outs each. The multi-channel capability resulted in time-efficient data acquisition, and a total of 8 profiles with lengths varying between 400 m and 700 m were measured, giving a total profile length of 3800 m. Measurements were taken using an expanded gradient array resulting in a total of over 26 000 data points with data stacking set to 2.

Result

The acquired resistivity data is of outstanding quality, giving average model residuals of 1-2 percent after inversion. An example of an inverted section is shown on the next page, plus an overview of all the inverted sections. The results will be evaluated against results from geotechnical sounding, drilling, sampling and laboratory analyses of the soils.

An example of an inverted section



An overview of all the inverted sections

