



# CLAY IN AN ESKER

Saltsjöbron, Södertälje, Sweden

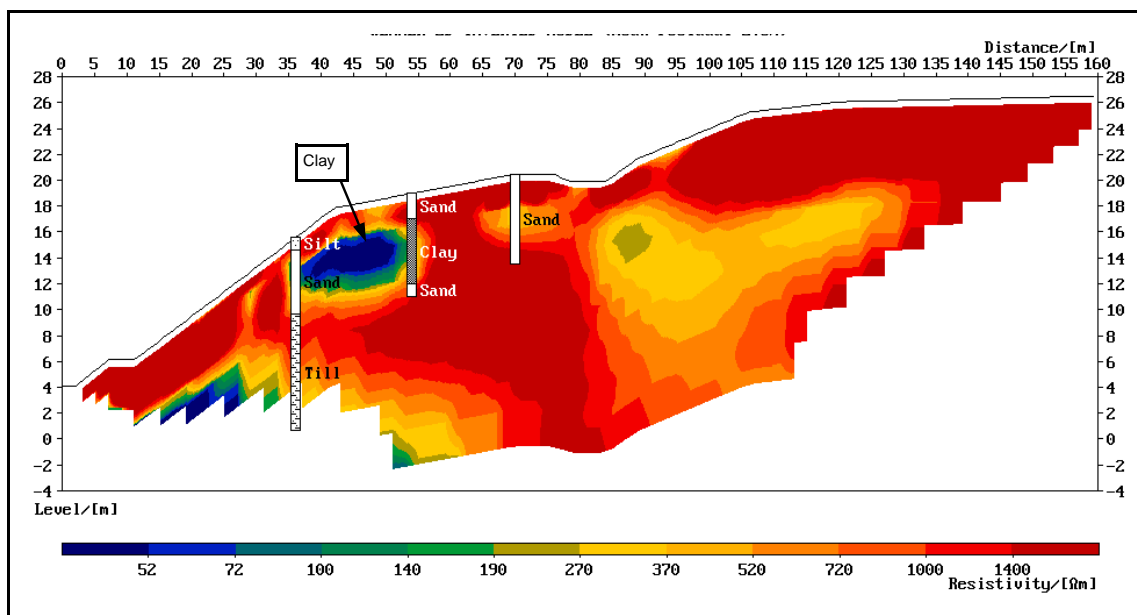
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**Before starting construction work it is of the outmost importance to know the prevailing geotechnical properties and the geological conditions in the area concerned. Clay has the tendency to cause landslides and settlement problems. By locating possible traces of clay it becomes possible to avoid problems associated with unstable ground conditions.**

Traditionally geotechnical investigations in the field involve drillings and soundings. The difficulty lies mainly in deciding exactly where the drill holes should be positioned and it is sometimes difficult to draw the correct

conclusions about the soil quality in between the drill holes. If geophysical investigations preceded the geotechnical investigations important synergy effects can be achieved and a good geological model can be produced.

Ahead of the planned work for a new highway bridge crossing the Södertälje channel a large number of drillings and sounding were made to locate the spread of clay lenses in an esker. As the investigation did not result in any conclusive results "Vägverket Konsult" asked Bjulemar & Brorsson Geofysik AB to perform a resistivity investigation.



A resistivity survey was performed with an ABEM LUND Resistivity Imaging System. The picture clearly shows the result of the investigation. The position of the clay lens is easily identified. As clay normally has a lower resistivity than sand and gravel it can be mapped by a resistivity survey. Results from adjacent drillings are incorporated in

the resistivity imaging result. This is a good illustration of what picture of the prevailing conditions that can be established. To obtain the same amount of information by using only drilling methods is normally neither time nor financially justified.

For more details please contact Lars Bjulemar at Bjulemar & Brorsson Geofysik AB

Bjulemar & Brorsson Geofysik AB  
Box 4528  
SE-203 20 MALMÖ, Sweden

PHONE +46-40 24 00 40  
FAX +46-40 97 87 87  
bbgeo@algonet.se