4th International Symposium on Flood Defence:
Managing Flood Risk, Reliability and Vulnerability
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CRACKED CLAY DIKES INVESTIGATION WITH GEOELECTRICAL TOMOGRAPHY

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Advantages of geoelectical measurement

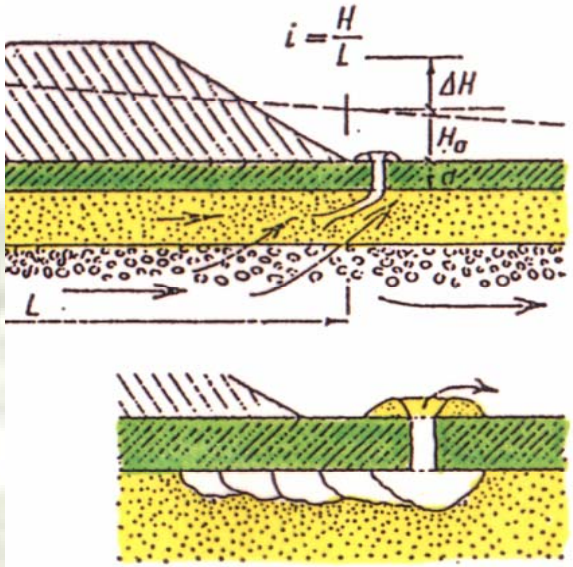
- Non destructive measure
- Quick separation of different soils
- Permanent profile

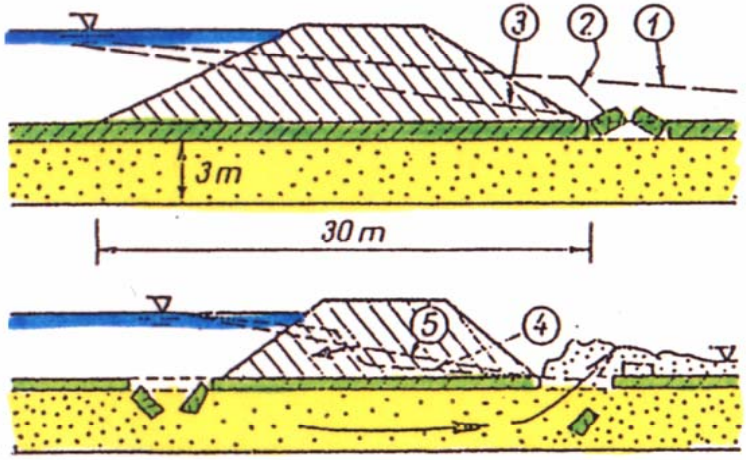
Electrical resistivity of soils

(ohmmeter)

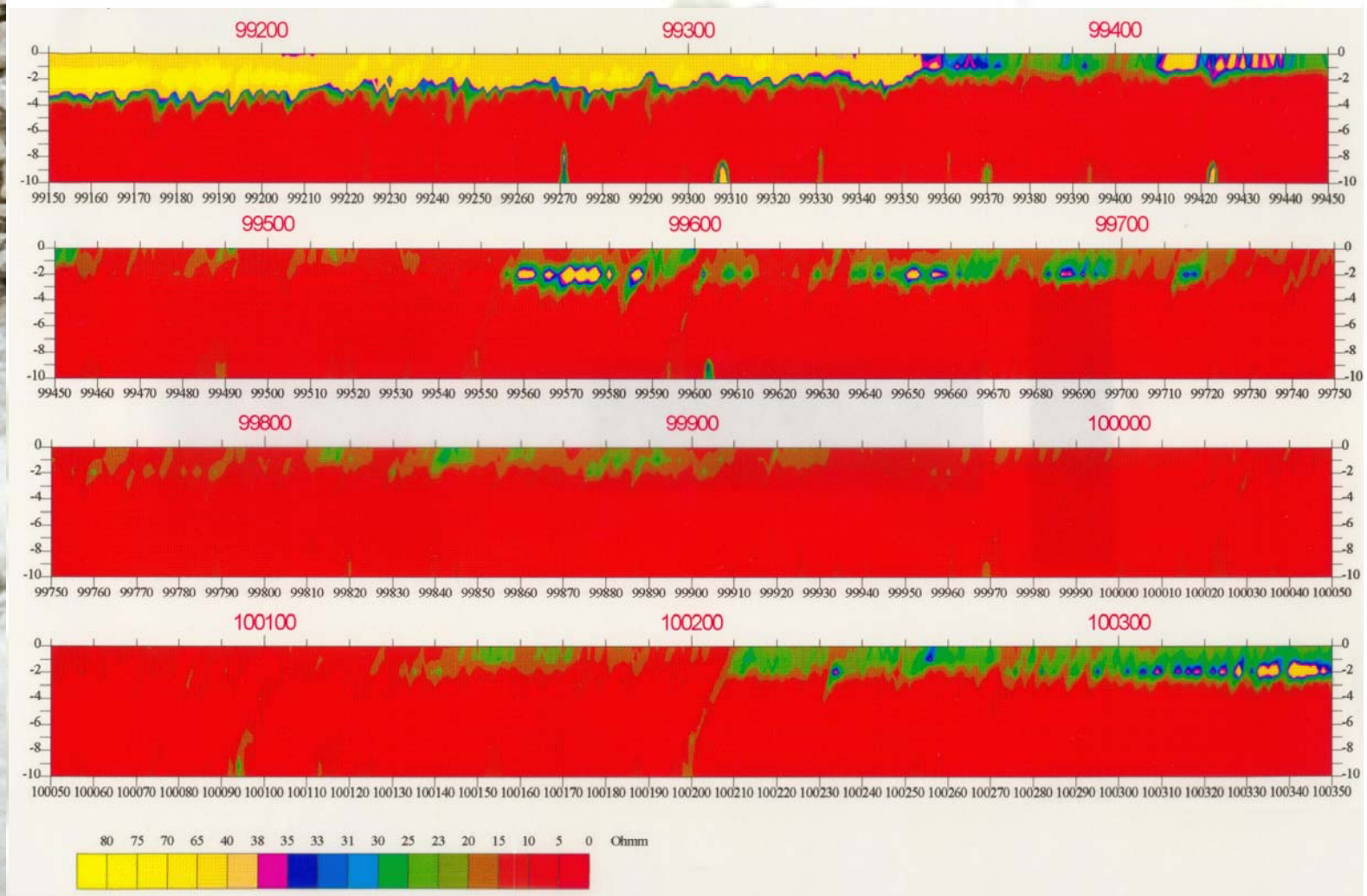
- Clay 2-30
- Dispersive clay < 3
- Silt 10-300
- Sand 50-1000
- Gravel 500-20000
- Dolomite 100-1000
- Limestone 100-2000
- Destilled water 250
- Salty water 0,0005

Piping phenomena



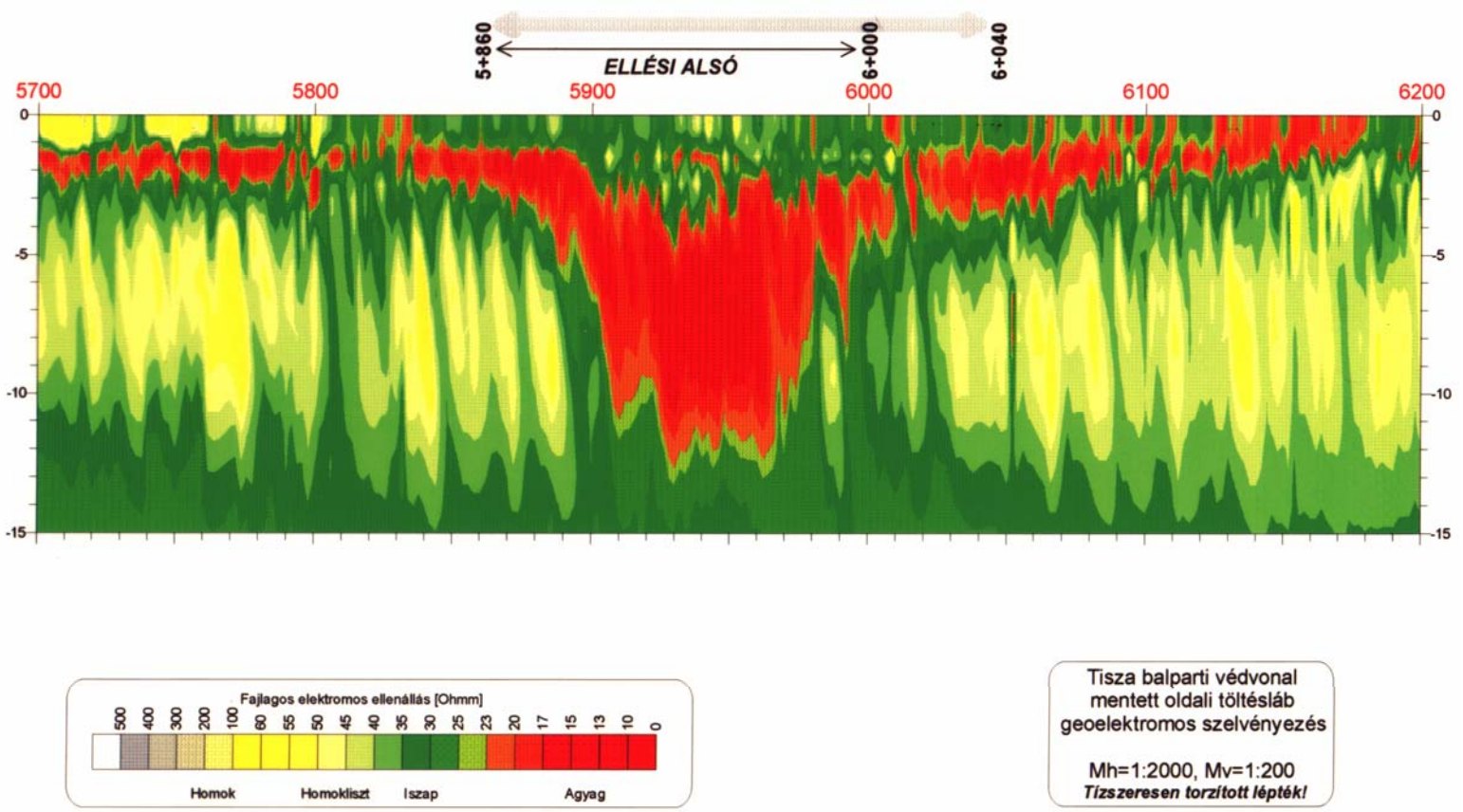


Geo-electrical longitudinal profile

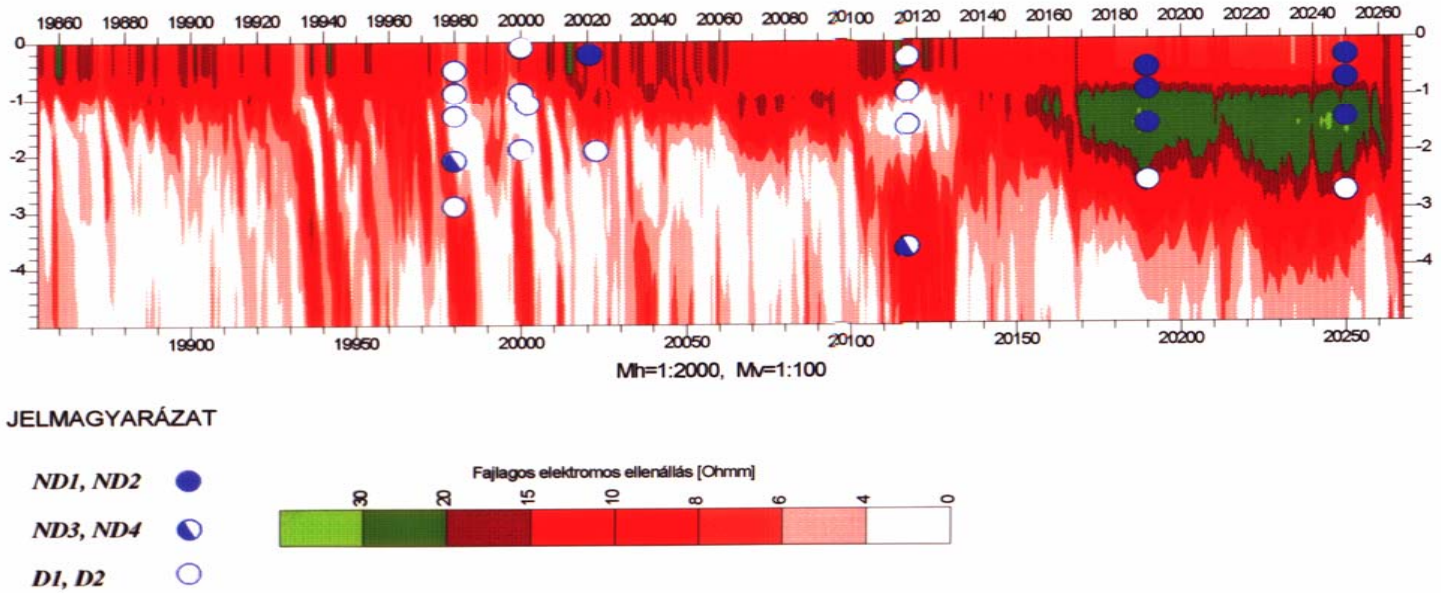


4200 km long

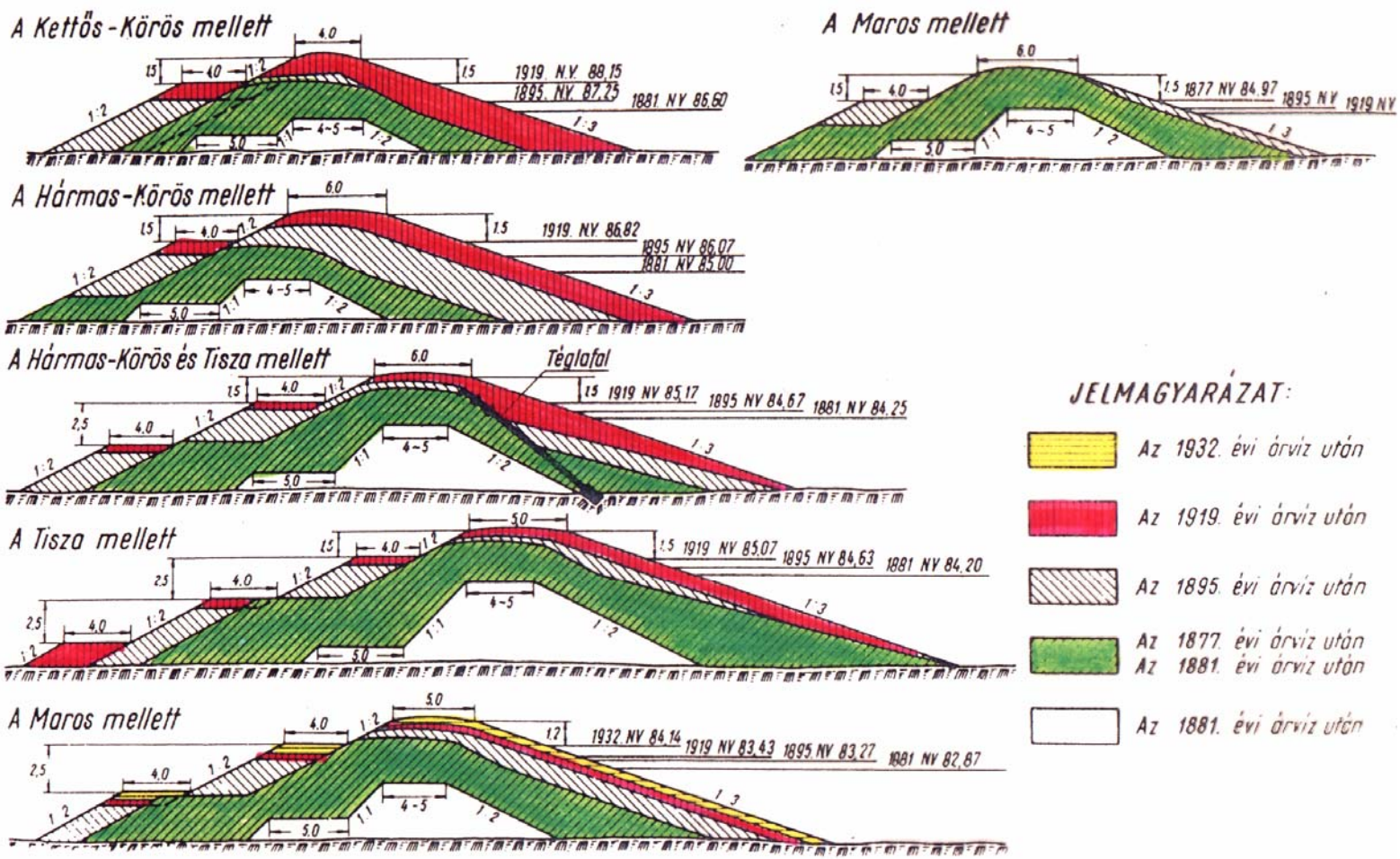
Meander crossing



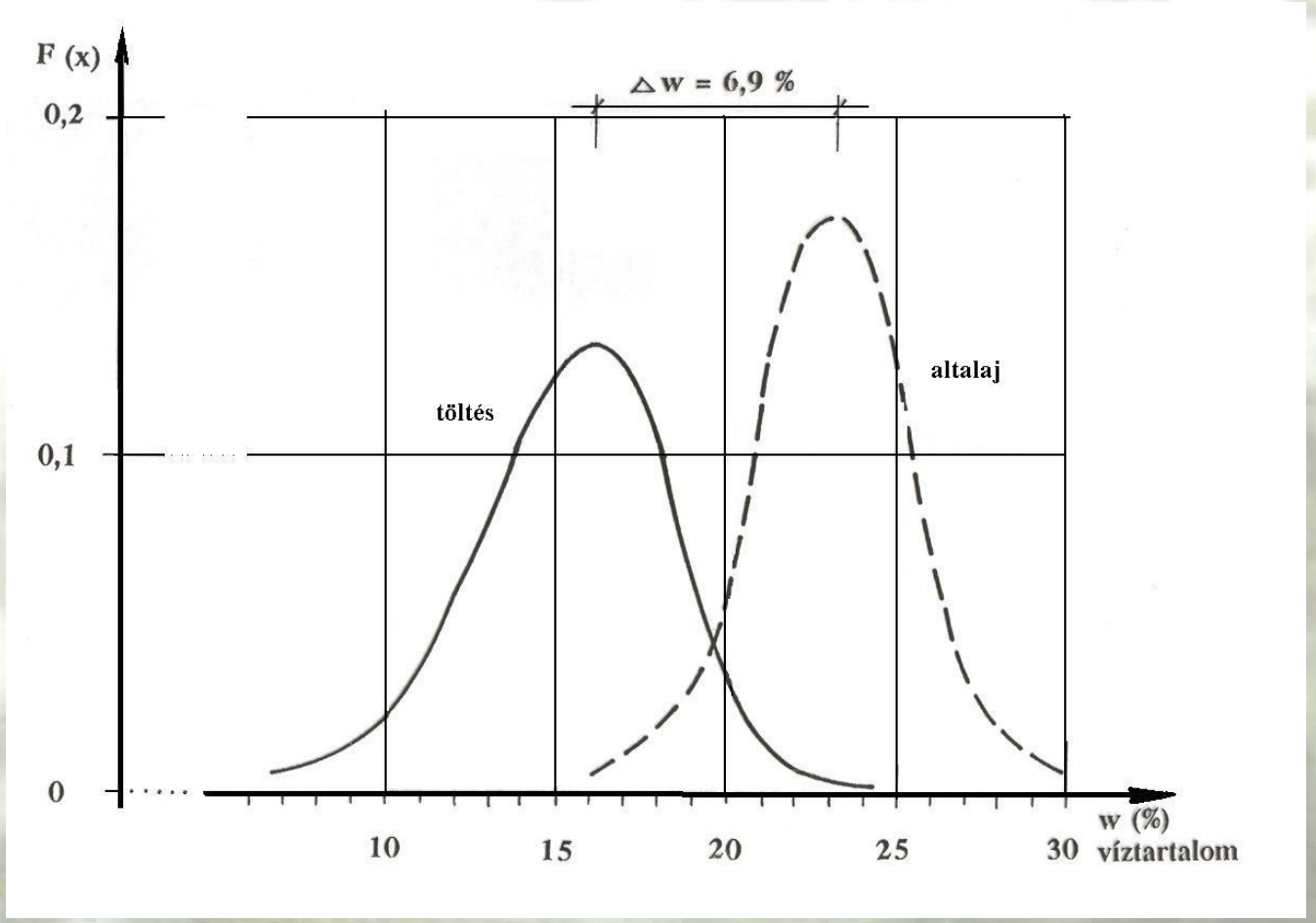
Dispersive clays quick identification



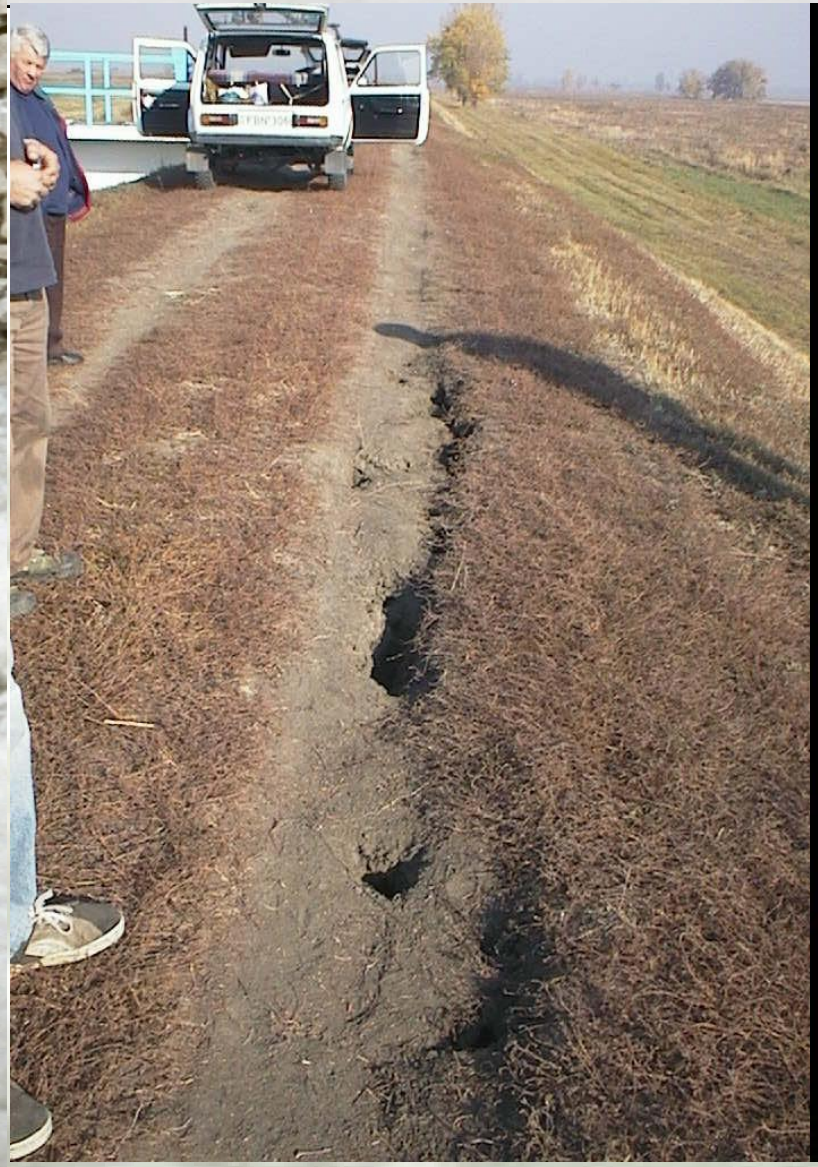
Dike construction phases



The water content change in dike

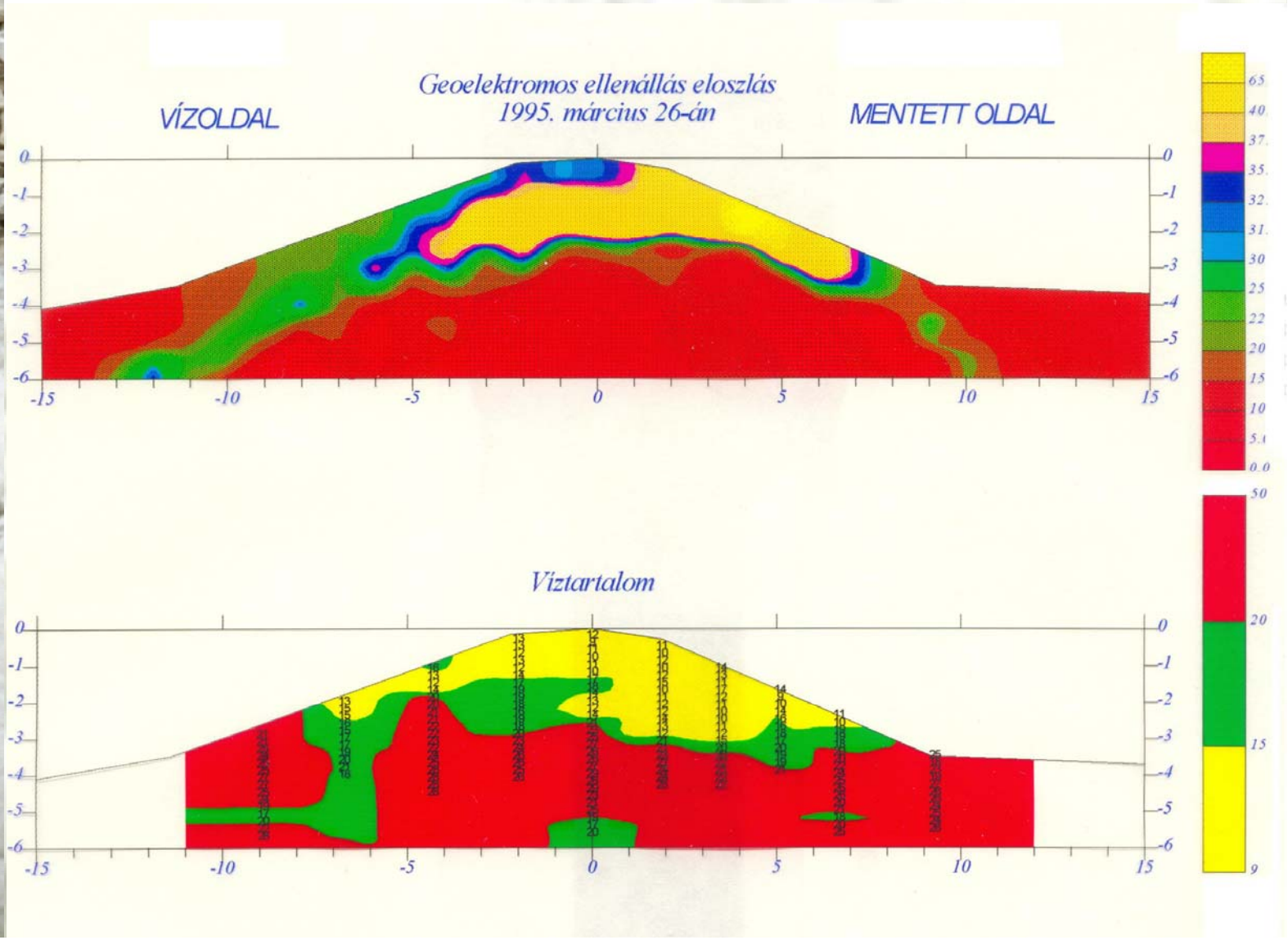


Cracked clay dikes I.

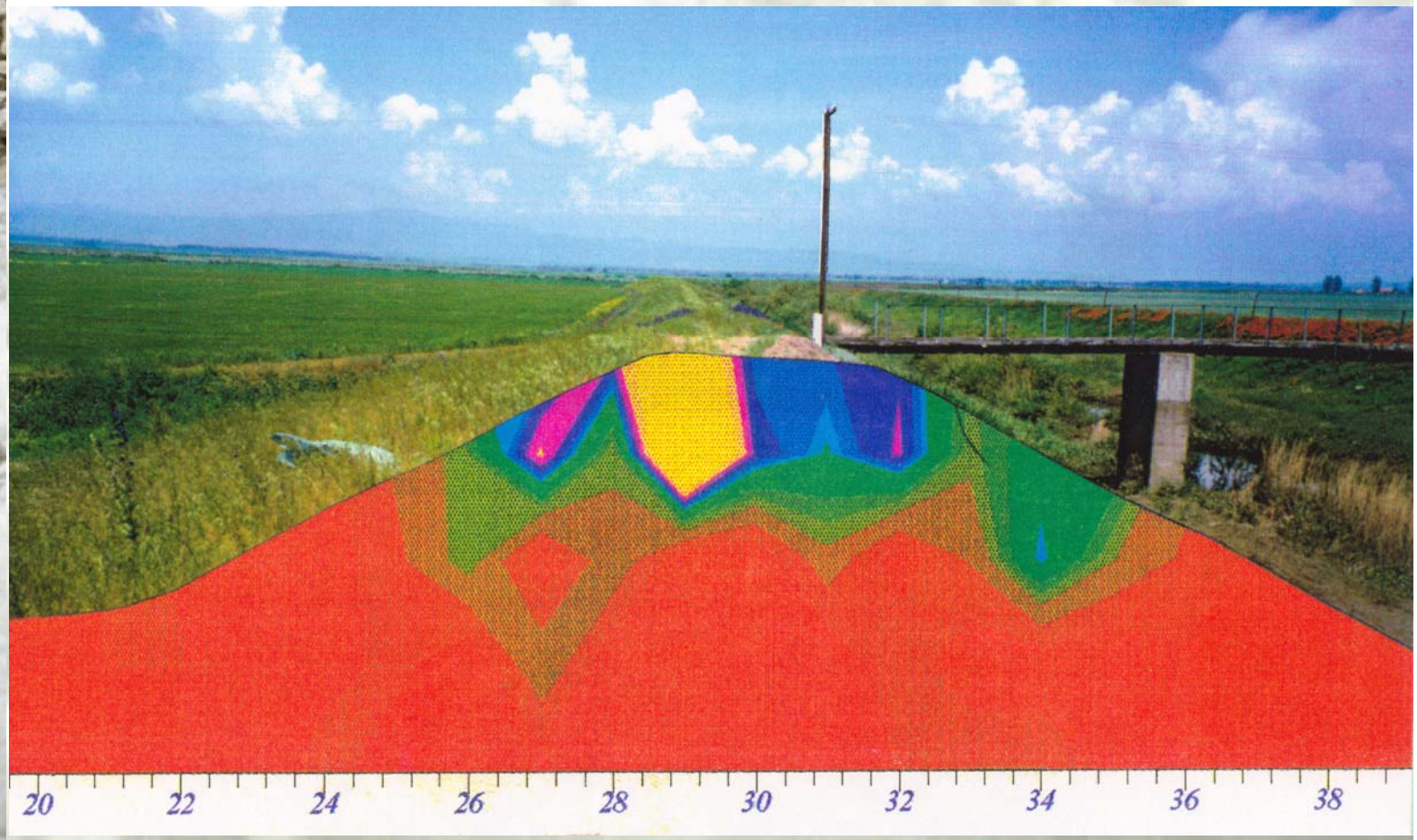


Cracked clay dikes II.

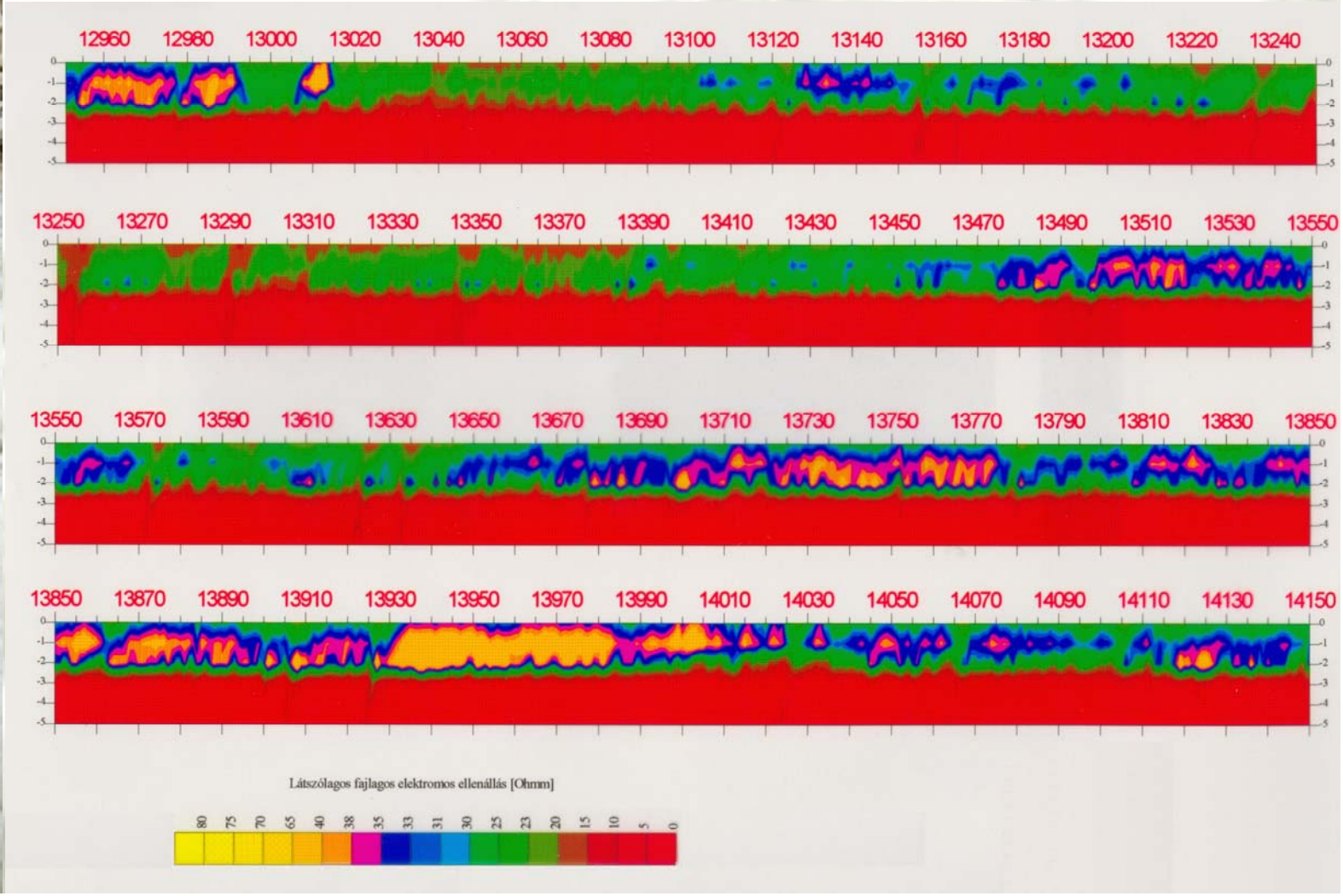
Water content and resistivity in a clay dike



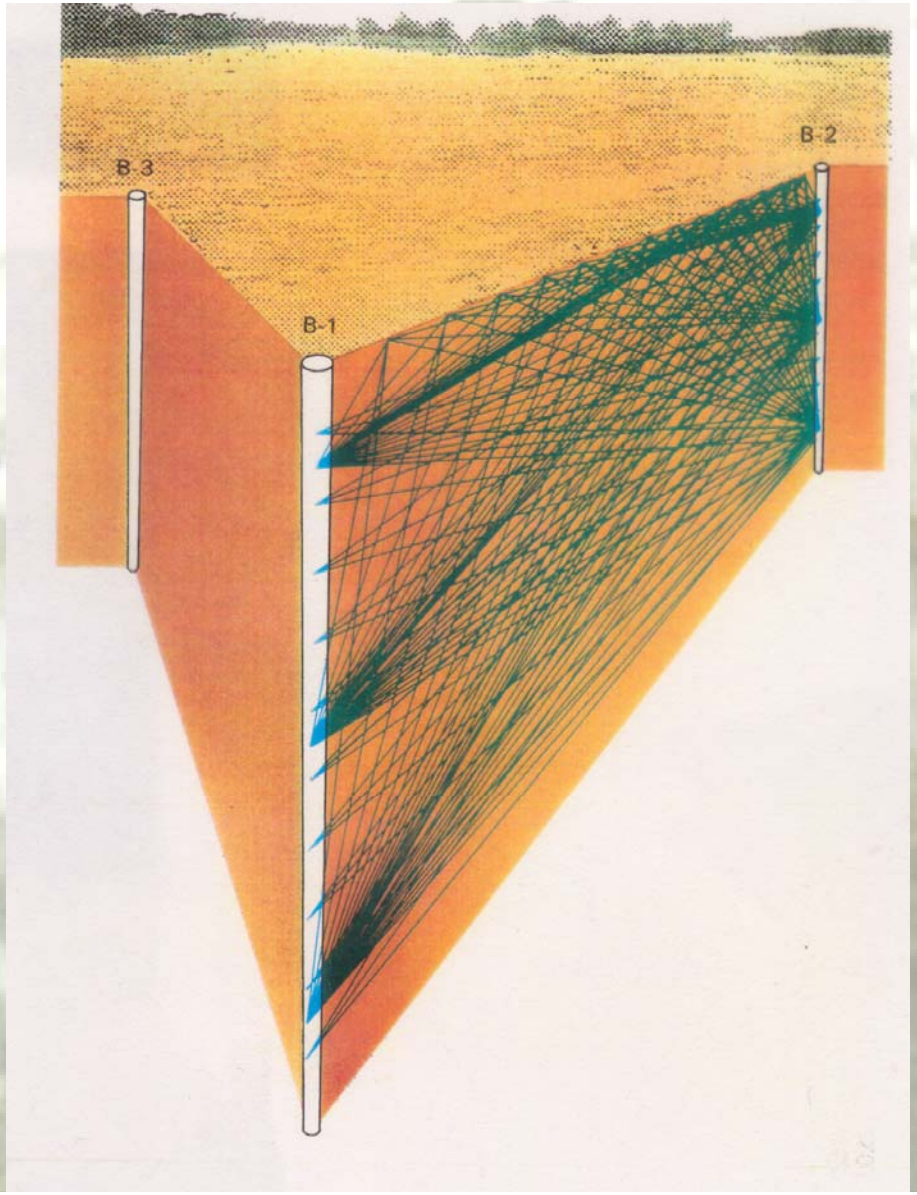
Water content decreasing in a clay dike



Longitudinal section of a dried out dike

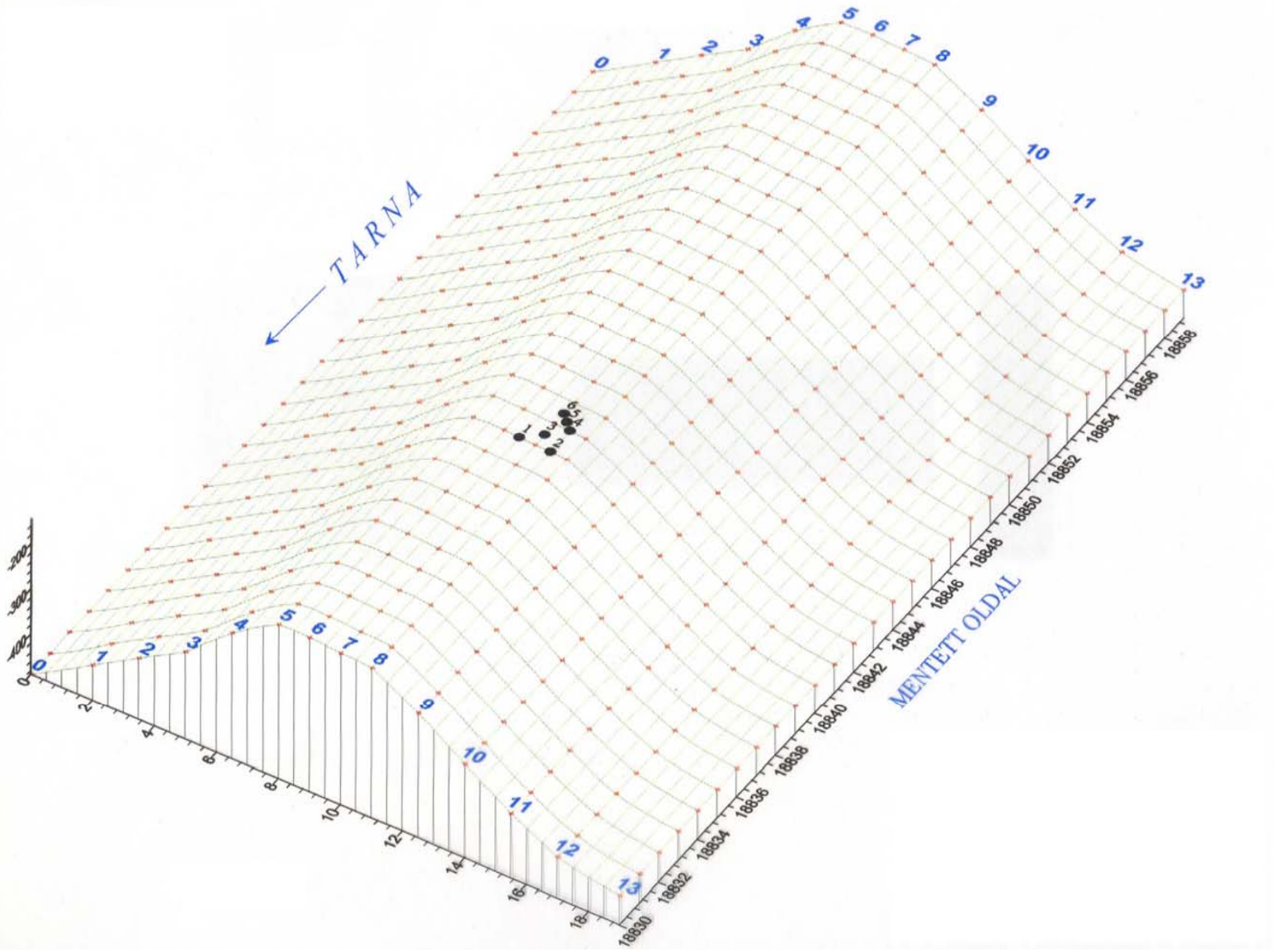


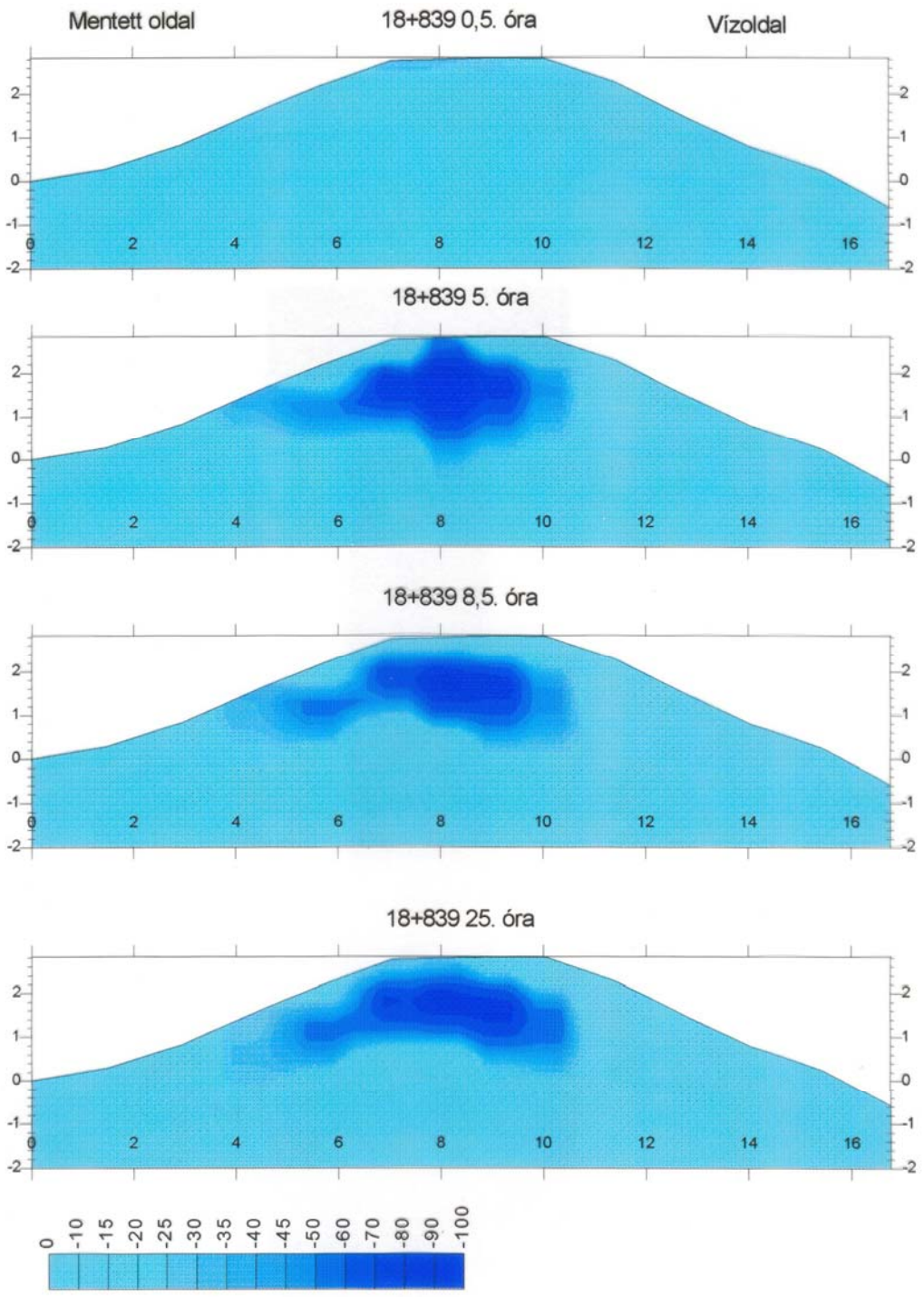
Hole-hole tomography



Geoelectrical net

for longitudinal and cross measures

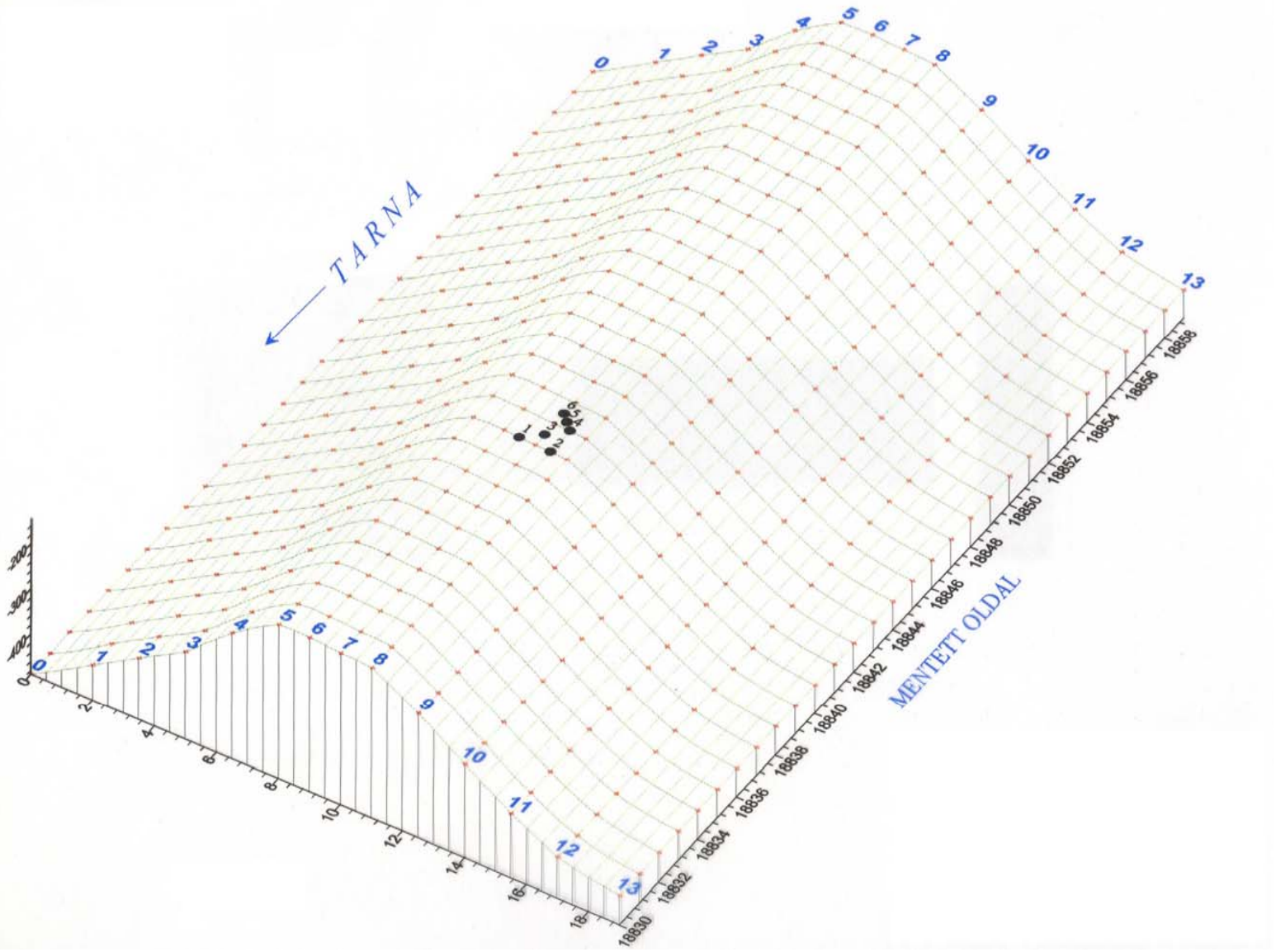


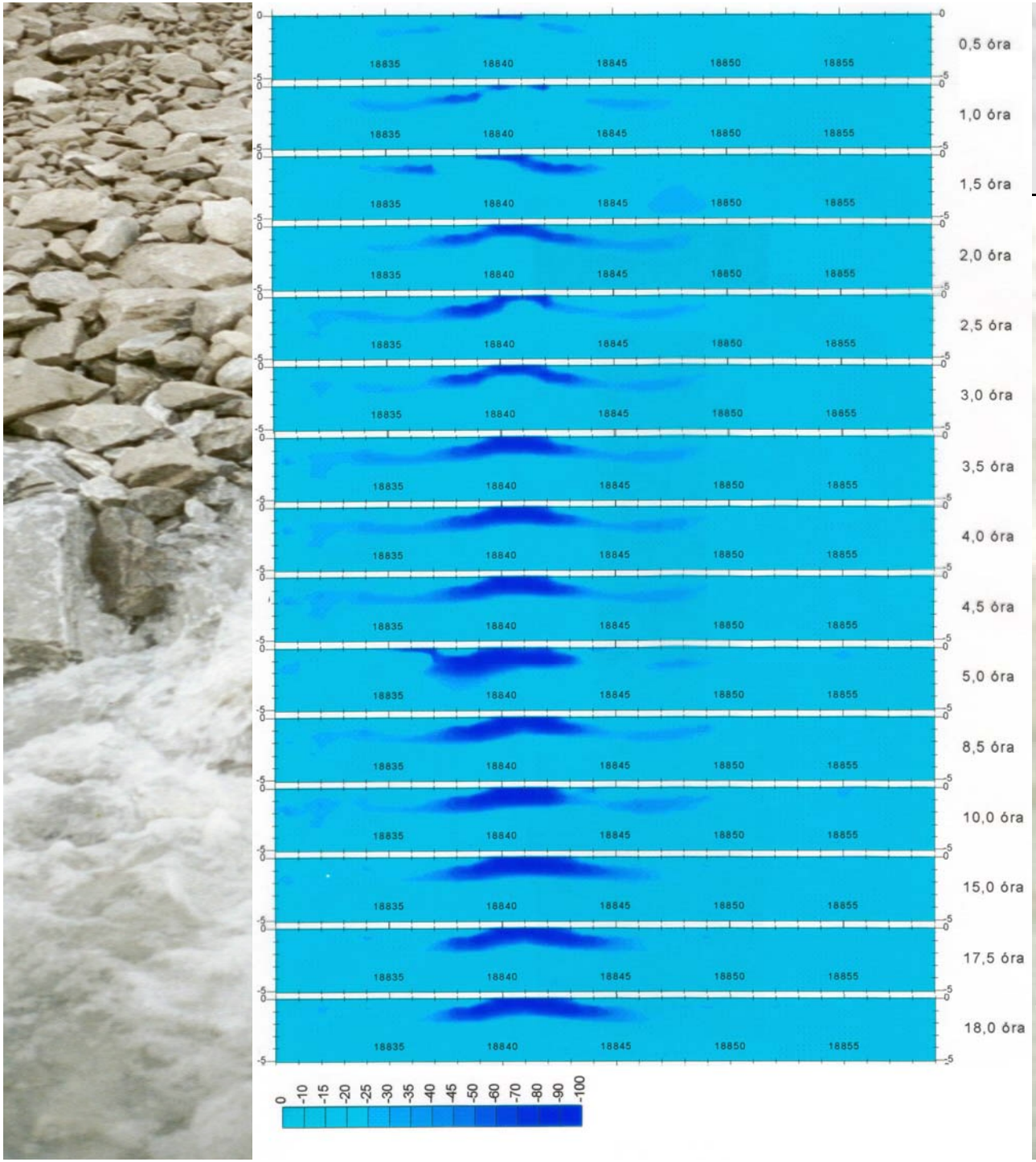


Identifying the drying cracked zones in a cross section

Geoelectrical net

for longitudinal measures





Identifying the cracked zones in a longitudinal section

Thank you,
for your kind attention!