

EC (Electrical Conductivity) Logging



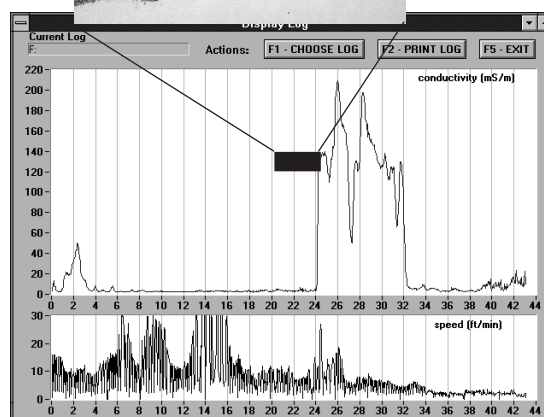
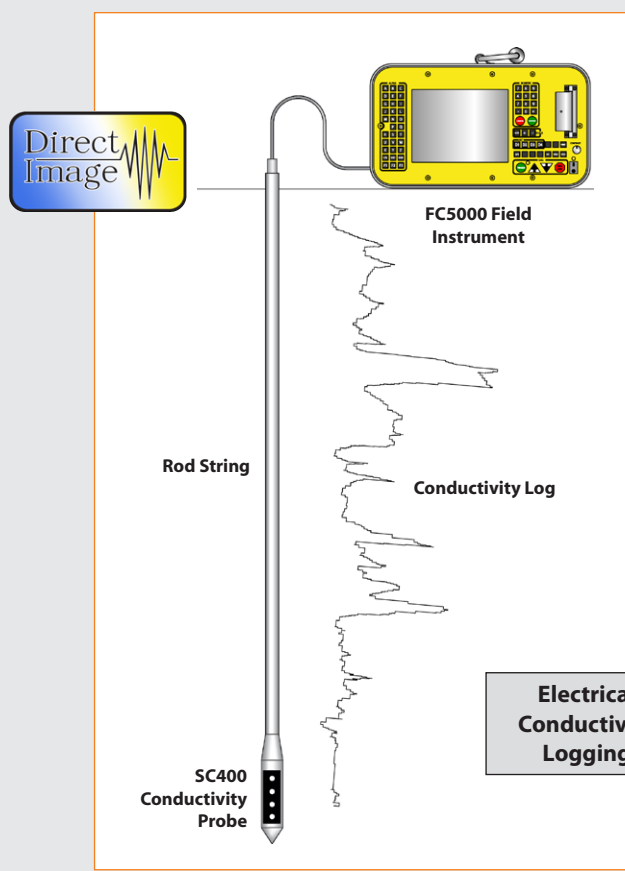
Electrical Conductivity (EC) Logging for classifying soils and geologic formations.

- Obtain accurate and reliable lithology information
- FC5000 Field Instrument provides graphic display of depth, soil conductivity, and probe speed
- Site specific lithologic logging of unconsolidated soils and sediments in 20% to 30% of the time as conventional methods.
- Determination of the thickness and lateral extent of aquifers, aquitards, and other lithologic units based on electrical conductivity logs
- Limited soil sampling required to verify log response
- Cost-effective alternative to borehole logging
- Measures soil conductivity and probing speed simultaneously
- No drill cuttings generated during the logging process
- Real time or "On Screen" data as logs are run



Field Applications

- Site specific lithologic logging based on EC logs and limited soil core sampling
- Construction of geologic cross sections based on EC logs
- Delineation of aquifers and aquitards in the subsurface based on EC logs
- Assist in locating appropriate lateral and vertical placement of wells and well screens
- Construct contour maps on the upper surface of sand formations
- Construct contour maps on the surface of an aquitard or impermeable bedrock contact based on EC logs to determine potential DNAPL flow paths and collection points.
- Construction of isopach maps (thickness) for lithologic units based on EC logs.



This log is a good example of conductivity logging. This log was obtained in a glacial outwash formation in Minneapolis, MN. Once the log was obtained, it was confirmed using a discrete soil sample from the 23-25 foot (7-7.5 m) interval using the Large Bore Soil Sampler. The sample shown in the photo showed a clean sand above 24 feet and clay below 24 feet. In this situation, the log showed a very clear image of the clay layer. Further logs could be done across the site to determine whether the clay layer is continuous. Probing speed from the log also provides useful information. Even though the zone from 4-24 feet (1-7 m) is all sand, the probing speed attests to the variable density of sand within this zone.



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