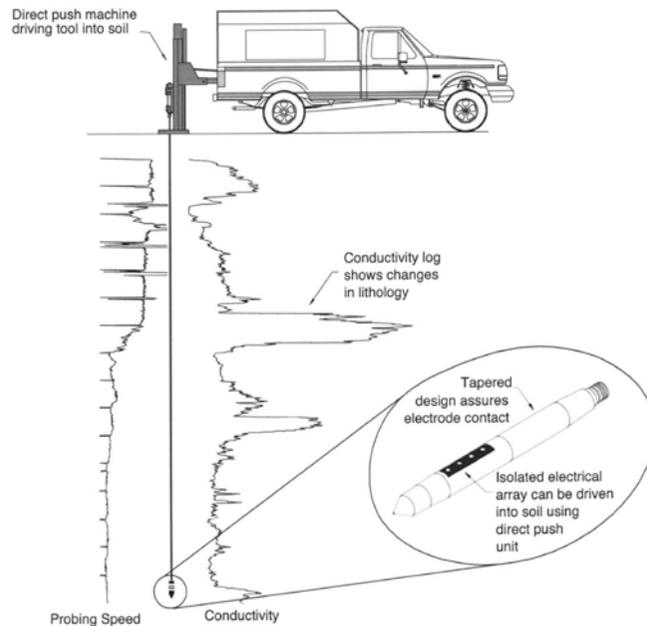


EC-log

The EC sensor measures electrical conductivity of the surrounding as the probe is pushed into a geological formation. The probe reacts to different degrees of salinity in the strata. Sand usually has a much lower salinity compared to silt, whereas the highest salinity is usually measured in clay structures. Therefore, the EC log can be used to identify different sediment structures.



Sensatec provides sophisticated technologies for contaminated site analysis and remediation. Furthermore, it offers intelligent sensor-based environmental monitoring systems. With more than 300 successful reference projects, Sensatec belongs to Germany's market leaders in in-situ groundwater remediation services.

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**Direct Image Drilling
Technology for Site Investigation**

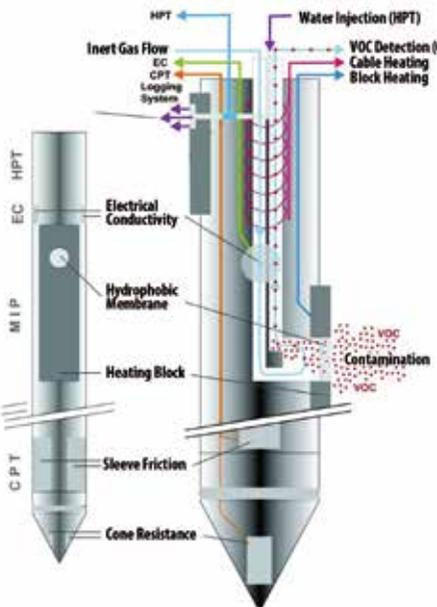
Direct Image Drilling Technology for Site Investigation

The identification of the contaminant distribution at sites even with a complex geological structure requires high resolution approaches for site investigations. Data and high resolution 3D-images of such investigations represent a very good basis for economical and successful planning of in-situ remediation approaches.

Sensor probes measuring contamination, hydraulic features and soil types enable a fast, cost effective and comprehensive screening of contamination in soil and groundwater. The probes can be pushed by static push or by percussion hammers. The following types of sensors are available for site investigations.

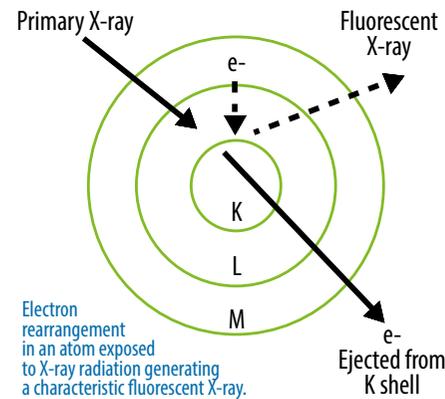
MIP – Membrane Interface Probe

The MIP probe heats up the soil, mobilizes organic contaminants which enter through a membrane and taken up in a nitrogen gas stream to be measured in a detector system at the surface. The MIP provides semi-quantitative data of contamination level versus depth in high resolution. The MIP is mostly used for CHC and BTEX contamination in soil and groundwater.



LIF – Laser Induced Fluorescence

The LIF probe makes use of laser light to excite hydrocarbon based contaminants in the soil and measures the corresponding fluorescence emitted by the contaminants in a detector at the surface. The system provides a semi quantitative real time contaminant profile of hydrocarbons like fuels, crude oil and tar versus depth. The LIF is the ideal tool to delineate source areas or core plumes.



MPT – Metal Profiling Tool

The MPT probe contains an X-ray source to excite elements and measures the specific fluorescence energy of metals present in the soil. A proper calibration delivers a quantitative profile of elements versus depth in high resolution. The MPT can be used to identify, quantify and delineate heavy metal contamination in soils and sediments. A new application is the identification and delineation of raw metals and REE in tailings for secondary mining.

HPT – Hydraulic Profiling Tool

The HPT probe injects water while being pushed into the geological formation. By measuring the corresponding injection pressure and flow rate the HPT delivers continuous data of the hydraulic permeability. Combined with other tools for contaminant identification a detailed analysis of contaminated flux in plumes is possible.

