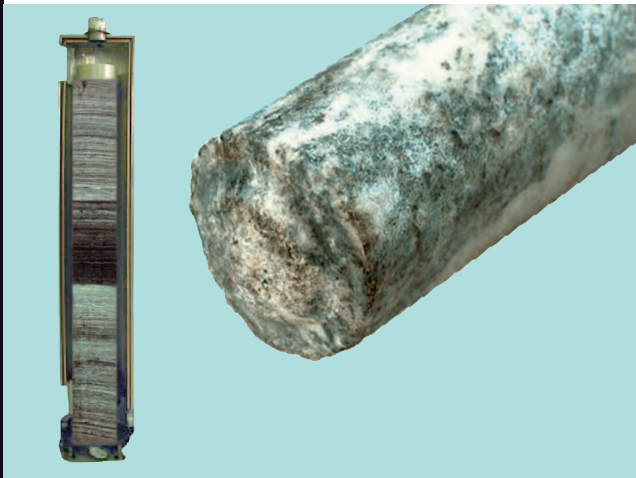


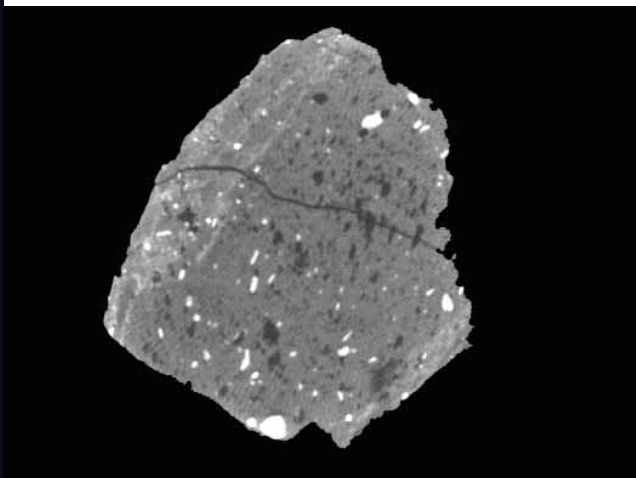
Inspection task: Analysis of rock samples

Inspection item: Bore core

Material: Sandstone, limestone



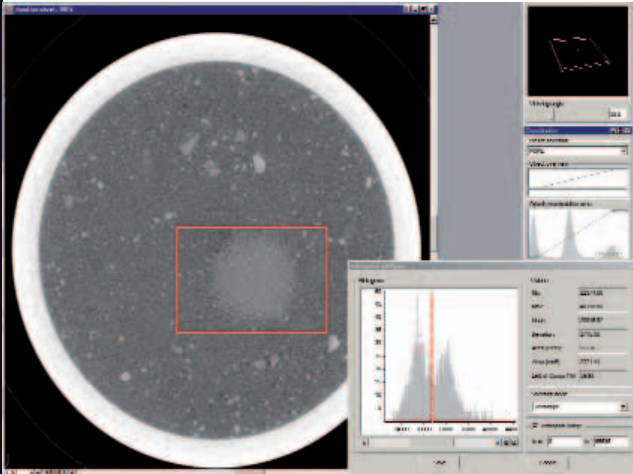
Bore sample with bore core



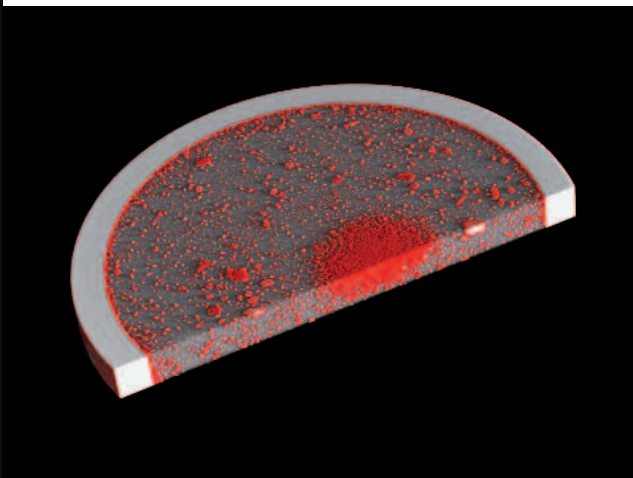
Rock pore structure

Inspection task

Extensive studies of soil and rock strata with reference to their geological and physical soil properties take place before oil fields are developed and production plants are erected. The aim of these studies is to obtain information about the composition and structure of soil samples taken from different depths. Liquid flowability and rock porosity in the individual strata play a central role thereby. Natural conditions such as gravity, pressure and temperature must have their effect on the bore sample for simulations of flow behavior during CT measurement. The type of rock, a three-dimensional reconstruction of the rock and the heterogeneity in the porous rock sample can all be defined with the help of computed tomography. These details provide inferences as to the saturation capability of the rock samples extracted.



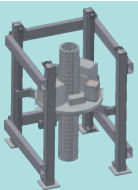
Determination of stratum density



A reconstructed volume display crude oil and rock in the bore sample

Analysis

After the CT system has been calibrated, spot density figures are able to be ascertained and classified in the course of a CT scan. The various component parts of a stratum from the bore sample can be identified afterward via the respective measured density. That way the existence and distribution of a variety of soil and rock types can be determined for each stratum within the bore sample. That also applies to component elements such as crude oil, subsoil water and natural gas. The upright inspection position reflecting conditions in the Earth's interior enable information to be gained on how crude oil is distributed within rock, as well as on the velocity at which crude oil can be flushed from that type of rock. Permeability of the rock strata is determined continuously by means of automated CT scans. This process can be documented in real time over a period of several weeks. An analysis of the flow behavior of crude oil/water composites over the entire period is obtained as the result.



Parameter

X-ray source:	225 kV
Focal Spot (EN 12543):	1.0 mm
Detector:	Line detector