

ARCHIMEDES 1991 - 1995

Acquisition and regulation of water chemistry in a clay formation.



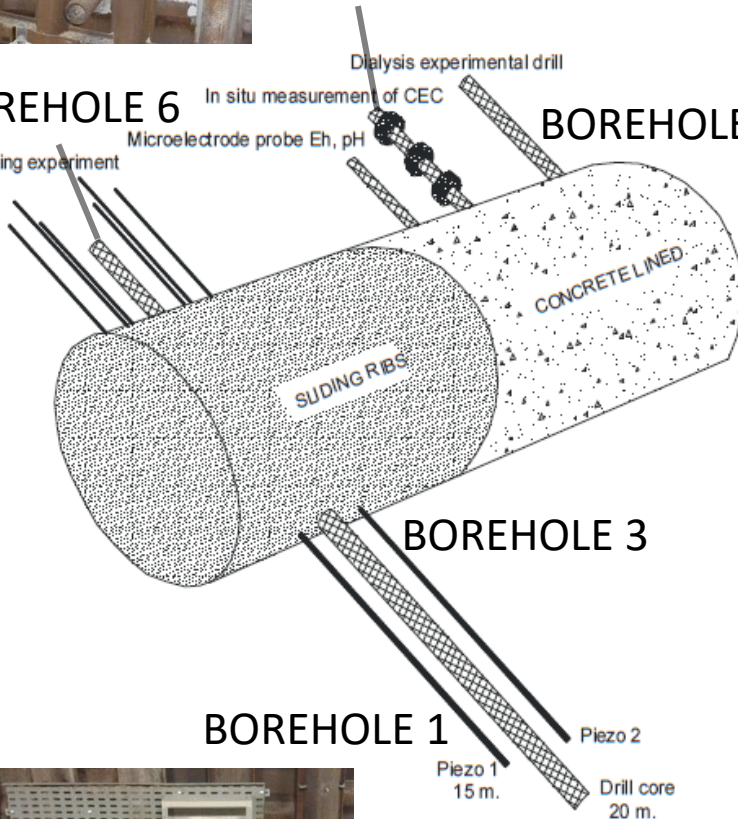
BOREHOLE 5



BOREHOLE 4



BOREHOLE 6



BOREHOLE 1

BOREHOLE 2



GOAL

STUDY OF THE COMPOSITION OF BOOM CLAY PORE WATER

INTERSTITIAL FLUID: GEOCHEMICAL AND MICROBIOLOGICAL CHARACTERIZATION

SOLID: MINERALOGICAL AND PHYSICO-CHEMICAL CHARACTERIZATION

BOREHOLE 1 & 3

15m stainless steel sterile piezometers with filters at 3, 7, 8, 14 and 15 meters

BOREHOLE 2

21m borehole equipped with optical pH electrode

BOREHOLE 4

Dialysis piezometer for H_2O analysis

BOREHOLE 5

Follow-up of the cation exchange capacity of host rock

BOREHOLE 6

surrounded by 6 freezing tubes. Clay core analysis.

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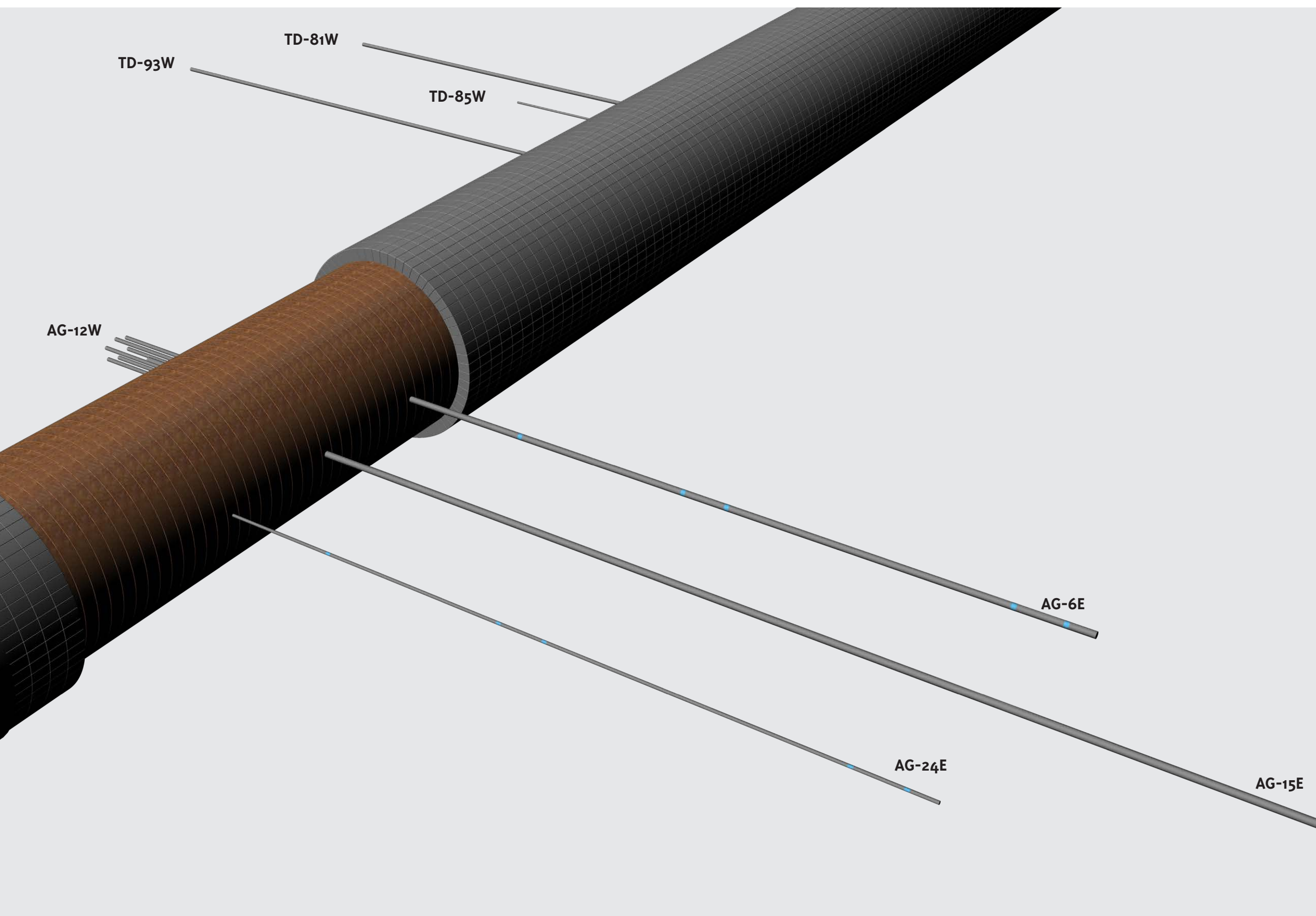
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ARCHIMEDES

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GOAL

Study of the composition
of Boom Clay pore water.
Geochemical characterization
of the interstitial fluid.
Mineralogical and physico-
chemical characterization
of the solid phase.

AG-24E & AG-6E

Stainless steel sterile piezometers (15m)
with multiple filters at 3, 7, 8, 14
and 15 meters

AG-15E

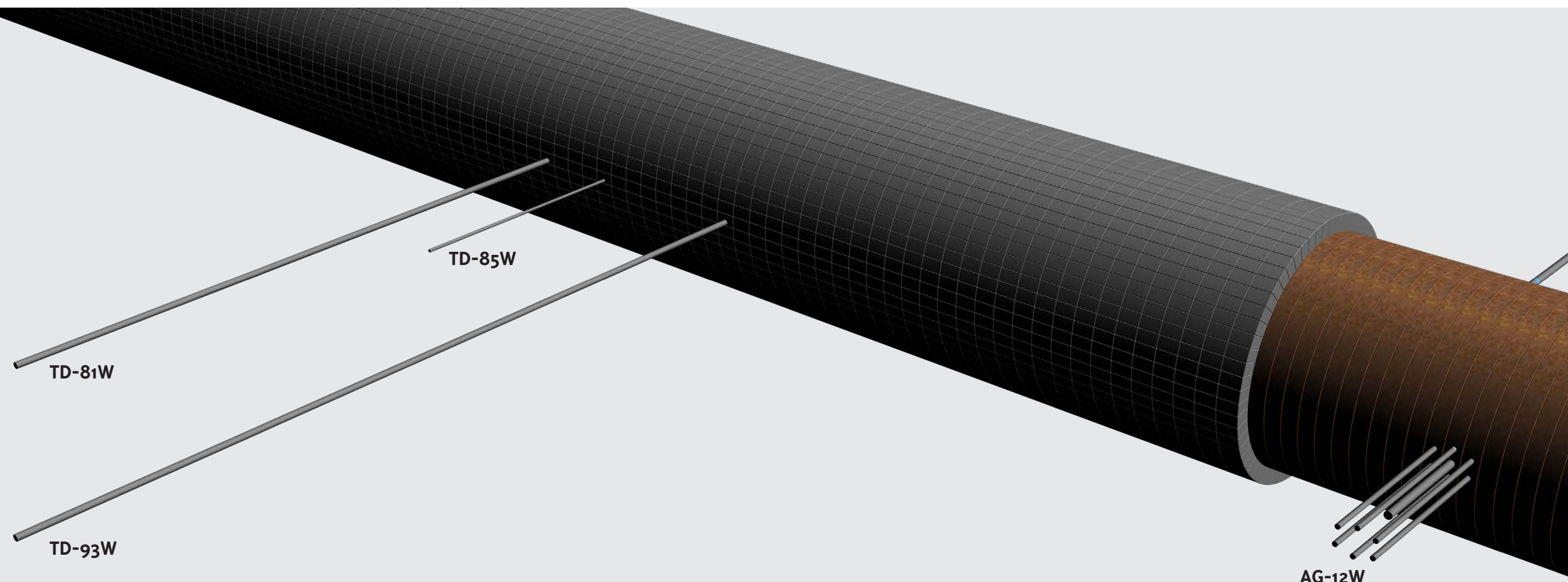
First and successful use of an optode
(optical pH electrode) to measure
the pH of interstitial water
at a hydraulic pressure of 17,6 bar



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Study of the composition of Boom Clay pore water. Geochemical characterization of the interstitial fluid. Mineralogical and physico-chemical characterization of the solid phase.

TD-81W
“Metal-free” dialysis piezometer (CEA)
for H₂O analysis

TD-85W
Follow-up of the cation exchange capacity
of the host rock (BRGM)

TD-93W
Dialysis piezometer

AG-12W
Central tube surrounded by 6 freezing tubes
Analysis of hydrogen and oxygen isotopes
on frozen clay cores (BRGM)
Isotopic measurements on clay water (CEA)

