

MEASURING THE PRESSURE-SATURATION CURVES OF UNDISTURBED SOIL SAMPLES USING WATER AND NAPL

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It was recently shown that estimated transport parameters for NAPLs can differ significantly from the measured parameters because of poor estimates for fluid conductivity and fluid retention. The most estimation procedures of the models assume that porous media are rigid and noninteracting (ideal porous medium). This assumption is not valid in clayey and/or in aggregated soils. Inadequate estimation of the NAPL retention may be a direct result of clay volume changes and soil aggregation changes when saturation with different fluids occurs. In order to expand the experimental data set of models describing the movement of organic liquids polluting the soils, a series of experiments was set up in which the fluid retention (P-S curves of the soils) were measured using water and NAPL. The measurements were carried out on undisturbed soil samples originated from different horizons of characteristic Hungarian soils. The presentation shows the used new measuring methodology, the results of the measurements and the statistical analysis of the data to discover the most important soil parameters effecting the NAPL retention of the undisturbed soils.