**Separation of colloidal polymetric waste using a local soil**

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**Abstract:** The use of a local soil as a destabilizer for an emulsified colloidal wastewater was investigated in this study. The soil was found to contain 68% quartz, 24% muscovite, and 8% hedenbergite and to have a surface area, a pore volume, and a pore diameter of 173 m2/g, 0.16 c3/g, and 40.5 A°, respectively. While preliminary investigation of the pollutants in the raw wastewater revealed their poor solubility and settleability, the reduction of the supernatant COD increased with the increase in soil mass and time until equilibrium was reached (within 24 h). Furthermore, the lowest supernatant COD achieved was within the acceptable range set by the regulatory authority. While destabilization of the colloidal polymers by the soil was attributed to the adhesion enhanced by the large soil surface area and the existence of aluminum and iron oxides, sedimentation was believed to occur because of discrete and zone types of settling. A considerable portion of the removal efficiency was achieved in the first hour and in the time range of (6-24 h), resulting in removal efficiencies as high as 95%. While the loading rate and the capacity of the soil were inversely proportional to the soil mass, the findings of the study indicated that lower kinetics and higher equilibrium capacities are expected if the clay proportion in the soil is increased by separation of quartz.