Subject area: Characterization of waste materials

Characterization of fine fractions of excavated waste from municipal solid waste landfill with low content of construction and demolition waste (Material batch no. 4)

Background information:
Landfill mining (LFM) is a concept in the field of waste management in which waste contained in old landfill sites is excavated and processed in order to mitigate pollution caused by the landfill, regain landfill capacity, reclaim land occupied by the landfill, recover secondary raw materials and produce alternative fuels, among many others.

Problematic:
Previous investigations have shown that a great amount of the whole excavated material in a LFM project corresponds to fine fractions. In most previous LFM projects, these fine fractions have been directed back to the landfill without any valorization. Therefore, the determination of the composition and characteristics of these fractions is of critical importance to determine the environmental and economic feasibility of a LFM project.

Objective:
To determine the particle size distribution and material composition, of samples in raw and dry state, of fine fractions from excavated waste from a MSW landfill, as well as their physical properties (e.g. water content and bulk density).

Requisites:
- Basic knowledge in characterization of waste materials
- Interested in the subject and motivation to do practical work
- Availability, commitment, reliability and ability to work independently
- Communication and writing in English
- Microsoft Office (Word, Excel and Power Point)

Opportunity to:
- Collaborate on a EU project
- Integrate practical and theoretical work
- Access to state of the art research on the subject
- Work independently and have a flexible schedule
- Improve/practice your English
- Possibility to cooperate with “Studienarbeit (Material batch no. 3)”

Time frame: SCP (equating to 150 hours, from which about 90 h will correspond to practical work and about 60 h to the theoretical and written parts)

Contact person: Juan Carlos Hernández Parrodi, M.Sc. (Bergbaugebäude, Raum 112/113, bei Dr.-Ing. K. Raulf und C. García López, M.Sc.); juan.carlos.parrodi@renewi.com