Wastewater Sludge Dewatering

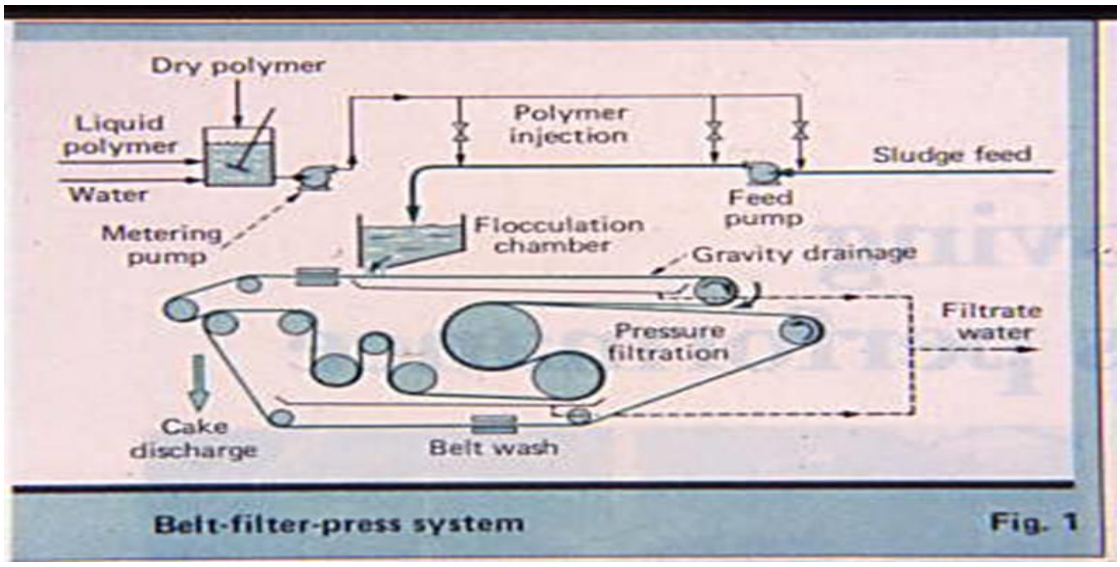
Sewage and industrial sludges are generally considered difficult to dewater, particularly waste activated sludges and their digested successors. In a project funded by the Water Environmental Research Foundation (WERF) a series of sewage sludges were conditioned and tested in two laboratory piston filter presses. Although this work was rigorously and carefully done it was unsuccessful in predicting the performance of a belt filter press, which is the major dewatering device used today in the US for municipal biosolids. Another WERF study attempted to quantify the polymer flocculant demand based on sludge properties, but even though quite successful there still were some sludges that could not be characterized or didn't fit the general trends. Thus, the practitioner is basically left with a trial-and-error approach where careful bench-and pilot scale testing must be done to determine the best dewatering option for his/her sludge.

Centrifuge and filter press technologies are generally more advanced, particularly in Europe where drier cake solids are a requirement. Nevertheless, the practitioner still must undertake a careful bench & pilot-scale study; and AFSS can help with this through their extensive conferences and short courses (particularly the Wastewater Treatment/Sludge Dewatering course to be presented at the Valley Forge, PA conference on May 19, 2008).

Dr. Ernest Mayer

Biosludge 1500mm / 450psig (30 bar) Membrane Filter Press on Rendering Wastewater in Europe.

Typical Bird Solid-Bowl Decanter Centrifuge on Sewage Sludge.



Belt Filter Press System Schematic

Keywords
Water, Wastewater & Water Reuse
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Filter and Filtration Processes