

ENVIRONMENTAL FOOTPRINT COMPARISON TOOL

A tool for understanding environmental decisions related to the pulp and paper industry



SOLID WASTE

EFFECTS OF DECREASED RELEASE OF BOD/COD & TSS ON SOLID WASTE

Effect of Source Reduction

Source reduction involves changes to the wood, pulp, and/or paper in-plant processing systems such that the loss of usable raw or intermediate materials is reduced. The resulting reduction in wastewater load sent to the treatment system can reduce the amount of solid waste that must be managed. This can occur in two ways: through reduction in the loss of solid materials (e.g., usable pulp fiber, filler, coatings); and by reductions in the amount of organic matter, measured as BOD or COD in effluents (e.g., by improved liquor loss control or alternate pulp bleaching practices). In both cases, the degree of solid waste reduction achieved will be mill- and treatment system-specific.

Reducing the loss of solid materials reduces the amount of these materials that must be managed in the mill primary treatment system, where settleable solids originating in the process are removed from the wastewaters. In most cases, these reductions would in turn decrease the load on residuals dewatering systems and, ultimately, requirements for their final disposal or beneficial use.

Reducing the load of treatable organic constituents in wastewater will reduce the intensity of biological treatment, resulting in a reduction of biomass grown as a result of treating organic waste. In activated sludge systems, some of the biomass grown is removed from the system and managed as solid waste (usually requiring dewatering). Reducing the organic load in process wastewaters also reduces the amount of biomass grown during treatment and thus the amount removed and managed as solid waste. For mills treating wastewaters in pond systems (i.e., aerated stabilization basins), reduced organic loading reduces the amount of biomass grown and, ultimately, the accumulation of biomass residuals in the treatment ponds. Because biomass residuals in treatment ponds are themselves degraded to a large extent in pond bottom sediments, the co-benefit to solid waste of source reduction of organic matter at mill operating treatment ponds is much less significant relative to mills with activated sludge systems.

To the extent that organic load reductions are achieved by improved capture and recovery of in-plant pulp mill process streams, there may be incremental increases in solid wastes that emerge from the chemical recovery and causticizing systems. Solid waste streams affected include green liquor dregs and slaker grits.