RBC SERVICES UPDATE

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Division of McNish Corporation

RBC OVERLOADING

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RBC Technology got its start in the U.S. in 1970. Neither the total effects of RBCs in wastewater treatment nor the shortcomings of their designed use were able to be evaluated for another 5 to 10 years.

Since that time, RBC manufacturers and engineers have made modifications to requirements for building RBC plants. Considering that suspended solids reactors and other forms of fixed film reactors had been used for a century prior, RBC technology was still a relatively new process.

In most cases, RBC overloading has been misunderstood regarding failures. An RBC overload does not necessarily relate to the designed hydraulic or organic capacity of the plant, but the designed capacity of the equipment itself.

Even though a plant may be operating at 50 to 75 percent of its hydraulic capacity, the possibility of RBC overloading remains by virtue of the organic loading and various constituents in the wastewater. RBC Loading is determined by the level of Soluble BOD and the amount of biomass on the media, and not necessarily the hydraulic load.

Although plant influent organic loadings may be within the plant's design parameters, operating methods and recycle procedures within the plant may have an adverse effect on the overall process.

Generally, the first stage RBC acquires the heaviest load of biomass. RBCs, As provided by various manufacturers, vary in their recommended weight limits. Listed below are various types of RBCs and their approximate operating weight limits for a 25ft. single stage RBC shaft.

AUTOTROL ¾"	:	31,800 LBS.
AUTOTROL 1"	:	42,000 LBS.
ENVIREX 1"	:	42,000 LBS.
CLOW	:	50,000 LBS.
WALKER	:	50,000 LBS.
LYCO	:	50,000 LBS.

In cases when the RBC shaft has multiple stages of media or when it is shorter than the standard 25ft., the weight limitation decreases. The weight consideration then focuses on the weight bearing capability of the media itself, and not the shaft.

RBC Process treatment is at its optimum when biomass thickness is controlled and kept between .040 and .060 of an inch for Standard Density RBCs. At this level, overall shaft weight is well within the recommended limit, which also assures protection for the equipment.

The constituents in the wastewater cause various effects on the thickness of biomass. For example, if the plant receives waste from an industry, the effects on SBOD can be dramatic. Certain polymers may also have an adverse effect on the biomass.

Again, stress is put on the importance of knowing the weights of RBCs and a method of controlling biomass thickness, which can be accomplished with Load Cells and an Aeration System. They will help maintain an efficient process and a form of protection for the equipment.

The treatment plant represents a major investment by the community. Everything possible should be done to protect it.

If you ever have any question regarding RBC weight problems, Load Cells, RBC Aeration Systems or RBC operations in general, please do not hesitate to give me a call.

Together, we can GET MAXIMUM PERFORMANCE FROM YOUR RBCs.