RBC SERVICES UPDATE

RBC Services **Phone: 630-264-5241 Fax: 630-892-7951**
Division of McNish Corporation

RBC AERATION: EQUIPMENT & OPERATION

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RBC Aeration serves a duel purpose; supplemental air for process enhancement ***and*** biomass control. A minimum of 125 CFM per unit is required for a supplemental mode, while biomass control requires up to 250 CFM per unit.

The following is only an example of equipment and operating procedures.

EQUIPMENT CONFIGURATION

Various materials can be used for the in-tank header which is positioned under the RBC; PVC, galvanized steel or stainless steel. PVC Is the most economical which is the material used in the **SideCar Aeration System**, configured using multiple drop "T"s and held in place with ballast, which eliminates the need for brackets at the tank bottom.

Regardless of the material used, it is recommended that coarse bubble diffusers be applied, such as the FLEXCAP Diffuser, and installed at 6" intervals along the header to provide an efficient distribution of air under the entire length of media. (Fine bubble diffusers are ***not recommended*** due to plugging, which has been experienced.)

OPERATING PROCEDURES

The use of load cells is very instrumental in the proper operation of an RBC aeration system. It is the first step to better process efficiency and overall equipment protection.

Plotting load cell data will enable you to determine various points of value:

1. Biomass thickness and overall shaft weight.
2. Trends in loading due to possible industrial activities or water temperature variance.
3. Intervals at which biomass control procedures should be implemented.
4. To what level the aeration decreases biomass weight.
5. How long biomass control procedures should be applied.

Initially, load cell readings should be taken twice weekly for the first six months. During this period, a trend of biomass control procedures should be revealed, meaning a frequency pattern. Load cell readings can then be backed down to once per week, but no less than once per month.

While the schedule of taking load cell readings can be decreased, it is important to learn the timing of how quickly the biomass weight increases in order to maintain a proper control schedule. Therefore, weekly load cell recording are recommended.

AT NO TIME SHOULD BIOMASS CONTROL PROCEDURES EXTEND MORE THAN 24 CONSECUTIVE HOURS IN A 14 DAY PERIOD.

RBC Biomass will acclimate itself to nearly any given condition, such as rotation reversal (which is ***not recommended***), RPM increase or even steady, constant aeration. This is the reason that biomass control procedures be implemented only on an intermittent basis.

By the end of the first year, an effective and efficient program of aeration operation and maintenance should be established.

The recommended weight limitations for RBCs vary with their respective manufacturer. The RBC process is most efficient when biomass thickness is controlled between .040 and .060 of an inch for Standard Density media and between .015 and .035 of an inch for High Density media.

New weights of RBCs also vary with their respective manufacturer. If the overall operating weight of an RBC is controlled between 60% and 80% of its recommended limit, you will experience both optimum process treatment and achieve a form of protection for the equipment.

As always, if you ever have any questions regarding any of the material included in the RBC Service UPDATE Series or your RBC operations in general, please feel free to give me a call.