Disinfecting Recycle Water Systems and Biofilters

SOP for UWSP Northern Aquaculture Demonstration Facility for Disinfecting cold water or warm water (<75°F) water recirculation systems utilizing fluidized sand biofilter or biofilter media. This is an example document based on UWSP NADF protocols and may not be exact to your system.

-Prepare to disinfect a RAS: make sure all fish are out of system and it is running as tight as possible (no influx or outflow of water from the system).

-Clean and remove as much organic material from sumps, tanks, and related piping before disinfecting.

-Run 100ppm chlorinated granules (we use HTH brand for swimming pool use) for 60 minutes roughly through entire system (tank, sump, biofilter, LH oxygenator, uv sterilizer). A no-foam additive can be used also at this time to decrease the amount of protein scum from the biofilter, which can overflow your system. The brand “No-Foam” is what is used at UWSP-NADF

-Use chlorine test strips a few times during disinfecting to make sure disinfection is at accurate ppm through entire system. Check in multiple locations throughout system.

-After system has been fully disinfected for a minimum of 1 hour, add a neutralizer to the sump to neutralize chlorinated water. This must be done before it can be flushed out of facility. We use the brand Thio-Trine. Read instructions for usage. Only takes seconds to neutralize chlorine in water that is in contact with Thio-Trine but use the chlorine test strips again to verify chlorine is neutralized throughout system.

-Running a second disinfection treatment with chlorine is recommended to guarantee a thoroughly disinfected system and biofilter.

-Flush out neutralized water from system and rinse system with fresh water several times through entire system.

-Run system with fresh water for several days and check water quality parameters before addition of fish. To restart system, add a low amount fish or ammonia to begin growing nitrifying bacteria. Take water quality samples every week or so to track system. Biofilters can take 6 to 9 months to fully operational at full densities. Shoot for 8 to 10 weeks (about 3 months) from beginning for cold water, about 6-8weeks (2 months) for warm water system, to be fully activated.

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