Aquatic Toxicology Laboratory
Department of Environmental Studies
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2-28-03

New Millennium

Challenge: Microbial Enumeration/Isolation Generation III™ Formula
Method: 9215, Standard Methods for the Evaluation of Water & Waste Water, 20th Edition
Approvals: EPA, American Public Health Assn., American Water Works Assn.
Date Tested: 2-18-03

Matrix: Water samples from two Gen. III™ filters

The Berkey unit containing two Gen. III™ filters was rinsed with DI water and tested for microbial colonies according to Method 9215 (heterotrophic plate count).

Three Liters of feed water were prepared with Escherichia coli, Pseudomonas aeruginosa, and Klebsiella sp. The method was modified by the clients request to mix all the cultures rather than test for each, one at a time.

Cultures of >10→5 for each colony formation are required. The actual colony formation was lawn growth >10→9. Three liters of inoculated DI feed water were passed through the Gen. III™ filters. The filtrate water sample was tested for residual cultures. The filtrate sample was then incubated overnight to propagate any isolated colonies and inspected under an electron microscope.

A second eight liter inoculated DI feed water challenge was prepared with lawn growth cultures and passed through the same Gen. III™ filter units.

Analytical Result:

Test Sample	Colony Formation	CFU/L	Comments
DI Rinse of Gen. III Unit	none	none	Initial Rinse
Influent, Inoculated DI Water	Lawn growth	>10→9	Feed Water, 3 Liters
Effluent, 1st Filtrate Sample	>10→9	0	ND, >9 log reduction
Influent, Inoculated DI Water	Lawn growth	>10→9	2nd Feed Water, 8 Liters
Effluent, 2nd Filtrate Sample	>10→9	0	ND, >9 log reduction

Additional analysis: Filtrates samples were inspected under electron microscope after a 24 hour incubation period. Filtrate samples were pure H^2O

All of above tests were performed as approved by client. Unless otherwise directed, the samples listed above with be disposed of by laboratory staff.