

PROJECT ASSIGNMENTS (SA) (PTY) LTD

JUST WATER

WATER FILTRATION SYSTEM BY MONOLITHIC

REPORT ON REMOVAL OF BACTERIA FROM WATER

1. PORE SIZE OF FILTER

The filter is claimed to filter down to 0,2 μ .

2. WATER FILTRATION SYSTEM

A bucket filtration system was constructed, according to direction in a pamphlet provided by Water Filtration Systems/Monolithic, available on <http://www.monolithic.com/stories/water-filtration-system>.

3. MATERIAL TO BE TESTED

An initial run was performed on tap water to eliminate the possibility of any pre-contamination of the filter itself.

The was followed by a dilution 1 : 5 (effluent : tap water) of effluent from the secondary settling tanks at Zandvliet sewage treatment plant, in order to ensure that the water being tested was actually contaminated with bacteria.

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4. FILTRATION TESTS

The upper bucket in the filtration apparatus (paragraph 2 above) was filled with about 5 litres of water and this was allowed to drip to the lower bucket until about 1 -2 litres had passed.

The raw water was sampled, together with the filtrate discharged at the start and end of the run. Aseptic sampling procedures were followed.

The remaining tap water was discarded and the bucket refilled with about 5 litres of a 1 : 5 dilution of settling tank effluent with tap water.

The above procedure was repeated, allowing 1 – 2 litres of water to be filtered. Raw water and filtrate at the start and end of the run were sampled.

5. BACTERIOLOGICAL TESTING

The waters in question were tested for Total Plate Count, Total Coliforms, Faecal Coliforms and E.coli.

Results are attached as Table 1.

6. RESULTS

The 0,2 μ filter appears highly efficient in removing the bacteria tested.

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T.R. DAVIES Pr.Sci.Nat.
Chartered Water & Environmental Manager
DIRECTOR

Misc.Corr/P/2646
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TRD/bdm

TABLE 1 : JUST WATER FILTER**BACTERIOLOGICAL RESULTS**

| | | Total Coliforms (org./100 ml) | Faecal Coliforms (org./100 ml) | E.coli (org./100 ml) | Total Plate Count (org./ml) |
|--|--------------|----------------------------------|--------------------------------------|-------------------------|-----------------------------------|
| Tap Water : | Untreated | Nil | Nil | Nil | Nil |
| | Start of Run | Nil | Nil | Nil | Nil |
| | End of Run | Nil | Nil | Nil | Nil |
| 20% Dilution of Settling Tank Effluent : | Untreated | >1000 | >1000 | >1000 | 2310 |
| | Start of Run | Nil | Nil | Nil | Nil |
| | End of Run | Nil | Nil | Nil | Nil |