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PURINIZE WITH FILTRATION SYSTEM NSF PROTOCOL P231 TEST REPORT

Report # 13-345 (Purinize with filtration system)

Report Date: 10/31/2013

Customer Name: H₂O Technologies, Inc.

EXECUTIVE SUMMARY

The H₂O Technologies, Inc. Purinize mineral solution with the H₂O Technologies, Inc. filtration system were tested for Microbiological Reduction following the NSF protocol P231. The H₂O Technologies, Inc.

INTRODUCTION

Tap water adjusted and spiked with bacteria (*Klebsiella terrigena*); virus (Poliovirus 1 and Rotavirus); and Cyst (*Giardia lamblia*) was treated with H₂O Technologies, Inc. Purinize mineral solution for 24 hours then filtered through the H₂O Technologies, Inc. filtration system and tested using Standard Methods for the Examination of Water.

REAGENTS, MATERIALS, AND LAB EQUIPMENT

AmScope Microscope MD-600, Barnstead Lab-Line Incubator.

Klebsiella terrigena (Bacteria), Poliovirus 1 (Virus), Rotavirus (Virus), *Giardia lamblia* (Cyst).

Sterile water, phosphate buffer.

H₂O Technologies, Inc. Filtration System.

H₂O Technologies, Inc. Purinize solution.

PROCEDURE

Flushed the filter system with approximately 1 gallon of sterile water. Prepared 2 liters of challenge water with *Klebsiella terrigena* at a concentration of 10⁸/L, Poliovirus at 10⁷/L, Rotavirus at 10⁷/L, and *Giardia lamblia* at 10⁶/L. Table 1 summarizes the Influent water properties. Added 4 mL of H₂O Technologies, Inc. Purinize and let it sit for 24 hours. Passed the 2 liters of influent water through the H₂O Technologies, Inc. filtration system. Collected the effluent water and analyzed the filtered water for micro-organisms following the Standard Methods of Analysis of Water 21st Edition, methods SM 9222-D (bacteria); SM 9510-B (virus); SM9711-B (cyst). The results are summarized in Table 2 below.

RESULTS

Table 1
Influent Challenge Water Properties

Parameter	Influent Challenge Water	Target
pH	7.25	6.5 to 8.5
Temperature	20.5 °C	20 ± 5°C
TDS	350 mg/L	50 - 500 mg/L
Turbidity	5.0 NTU	0.1 to 5 Nephelometric Turbidity Units
TOC	4.5 mg/L	0.1 to 5.0 mg/L

Table 2
H₂O Technologies, Inc. Purinize Filtration System Test Results

Micro-organism Tested	Influent Water Concentration	H ₂ O Technologies, Inc. Purinize Filtered Water Concentration	% Reduction
<i>Klebsiella terrigena</i> (Bacteria)	10 ⁸ /L	50,000/L	99.95
Poliovirus 1 (Virus)	10 ⁷ /L	15,000/L	99.85
Rotavirus (Virus)	10 ⁷ /L	15,000/L	99.85
<i>Giardia lamblia</i> (Cyst)	10 ⁶ /L	10,000/L	99.0

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