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AURO WITH FILTRATION SYSTEM NSF PROTOCOL P231 TEST REPORT

Report # 16-18 (Auro Solution with filtration system)

Report Date: 01/14/2016

Customer Name: Auro, LLC.

EXECUTIVE SUMMARY

The Auro mineral solution with the Auro filtration system were tested for Microbiological Reduction following the NSF protocol P231.

INTRODUCTION

Tap water adjusted and spiked with bacteria (*Klebsiella terrigena*); virus (Poliovirus 1 and Rotavirus); and Cyst (*Giardia lamblia*) was treated with Auro mineral solution for 24 hours then filtered through the Auro 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.

Auro Filtration System.

Auro 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 $10^8/L$, Poliovirus at $10^7/L$, Rotavirus at $10^7/L$, and *Giardia lamblia* at $10^6/L$. Table 1 summarizes the Influent water properties. Added 4 mL of Auro and let it sit for 24 hours. Passed the 2 liters of influent water through the Auro 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
Auro Filtration System Test Results

Micro-organism Tested	Influent Water Concentration	Auro 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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