BIOLOGICAL CONSULTING SERVICES
OF NORTH FLORIDA, INC.

January 11, 2017

Kevin Kassel
Aqus
1207 W 29th St
Los Angeles CA 90007

Client ID: Aqus Filter A, Aqus Filter B, Aqus Filter C

BCS ID: 1612124, 1612125, 1701064

Project Name: Single Use Filtration Efficacy of Submitted Purifier Units

Dear Kevin Kassel,

We have completed the filtration efficacy study on the submitted units as outlined below. The contaminant species, study conditions, and water parameters utilized were based on client's request and adaptation of the guidance documents and protocols listed below:

Validation of Water Purifier Efficacy (Biological): Adaptation of ANSI/NSF protocol 53 and P231 (ISO17025 only accredited)

Following, you will find our report on the results of the study conducted on the referenced samples. Should you have any questions, please do not hesitate to contact me.

Sincerely,

George Lukasik, Ph.D.
Laboratory Director

BCS LABORATORIES, INC. – GAINESVILLE
4609 NW 6TH STREET. STE. A. GAINESVILLE. FLORIDA 32609
TEL. (352) 377-9272, FAX. (352) 377-5630
WWW.MICROBIOSERVICES.COM
FL DOH #E82924, ISO/IEC 17025:2005 L2422 (L-A-B), PA DEP# 68-03950, EPA# FL01147

Analysis: *3.0 Microspheres Filtration Efficacy (parasite)* Test Water: General Test Water #1

Test Point: Initial efficacy following Conditioning (Single Use)

Flow rate: 325 mL/min pH: 7.31 NTU: 0.44 TDS: 206 Hardness: 132

Influent Conc: 4.20E+04 microspheres/mL

BCS Sample ID 1 1612124 Client ID 1 Aqus Filter A Press 1(psi): N/A

Eff Conc 1: <1.00E+00 microspheres/mL % Reduct 1: >99.998 Log10 Reduct 1: >4.6

BCS Sample ID 2 1612125 Client ID 2 Aqus Filter B Press 2(psi): N/A

Eff Conc 2: <1.00E+00 microspheres/mL % Reduct 2: >99.998 Log10 Reduct 2: >4.6

BCS Sample ID 3 1701064 Client ID 3 Aqus Filter C Press 3(psi): N/A

Eff Conc 3: <1.00E+00 microspheres/mL % Reduct 3: >99.998 Log10 Reduct 3: >4.6

Test Notes: Microspheres were not detected in units effluent (Qualifier: U).

Analysis: *R. terrigena Bacteria Filtration Efficacy* Test Water: General Test Water #1

Test Point: Initial efficacy following Conditioning (Single Use)

Flow rate: 325 mL/min pH: 7.31 NTU: 0.44 TDS: 206 Hardness: 132

Influent Conc: 5.20E+05 cfu/mL

BCS Sample ID 1 1612124 Client ID 1 Aqus Filter A Press 1(psi): N/A

Eff Conc 1: <4.50E-01 cfu/mL % Reduct 1: >99.99991 Log10 Reduct 1: >6.1

BCS Sample ID 2 1612125 Client ID 2 Aqus Filter B Press 2(psi): N/A

Eff Conc 2: <4.50E-01 cfu/mL % Reduct 2: >99.99991 Log10 Reduct 2: >6.1

BCS Sample ID 3 1701064 Client ID 3 Aqus Filter C Press 3(psi): N/A

Eff Conc 3: <4.50E-01 cfu/mL % Reduct 3: >99.99991 Log10 Reduct 3: >6.1

Test Notes: Bacteria was not detected in units effluent (Qualifier: U).

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Project: Single Use Filtration Efficacy of Submitted Purifier Units

Date Received: December 15, 2016 10:03 Analyst: David Sekora, M.S.

Test Start Date: December 16, 2016 Test End Date: December 17, 2016 Qualifier: U

Report Notes:

Initially, the filters were connected to the bottom of individual 5 gallon container buckets (Lowes Hardware, USA) and 5 liters of General Test water 1 (GTW) was allowed to pass through the filters via gravity. For the challenge, four liters of GTW1 was seeded with described challenge species. The solution was homogenized was added to the containers immediately following conditioning. The challenge water was allowed to pass through the filter via gravity. The flow rate was measured at 300-350 mL/min. Duplicate 50mL samples were collected from the Filter effluent when 75% of the water had passed through the filter. A sample of the influent challenge water was removed prior to the beginning of the study and at the end. Influent samples were diluted 1/1,000 in phosphate buffered water prior to analysis. The collected samples were analyzed in duplicates of 0.1 and 1.0 mL for bacteria and in duplicates of 0.5mL for micropheres as per standard lab operating procedures. 3.0 Micron Microspheres were used as surrogates for pathogenic parasites. End of report notes.

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*I certify that I have examined I am familiar with the information submitted herein. The results pertain only to the sample(s) analyzed associated identifier #(s). Based on my inquiry of the individuals responsible for the analysis, I believe the data to be true, accurate, and complete. Unit descriptions and names were obtained from the submitted documents. The analysis was authorized and commissioned by the client or client's representative. The resulting data are representative of the analysis conducted on the collected samples and it's/their condition at the time of analysis. The data provided is strictly representative of the study conducted under laboratory conditions using the material/samples/articles provided by the client (or client's representative) and it's (their) condition at the time of test. The data obtained may not be representative or indicative of a real-life process and/or application. The sample(s) were analyzed in accordance with the appropriate method, however due to the inherent limitations of methods, microorganisms may avoid detection. BCS Laboratories offers no express or implied warranties concerning the quality, safety, and/or purity of any sample, batch, source, or the process they are derived from. Quality assurance controls were performed as outlined in the method and as per Good Laboratory Practices. Analyses were performed in accordance with laboratory practices and procedures set-forth by ISO 17025-2005 and NELAP/TNI accreditation standards unless otherwise noted. BCS makes no express or implied warranty regarding the ownership, merchantability, safety or fitness for a particular purpose of any such property or product.

Signature of Laboratory Director/Authorized Rep. _____ Date: January 11, 2017

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DATA QUALIFIER CODES	
SYMBOL	MEANING
D	Measurement was made in the field.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J1	The sample matrix interfered with the ability to make any accurate determination.
J2	No Quality Control criteria exist for the component.
^	analysis conducted outside the Laboratory's scope of accreditation
L	Off scale high. Actual value is known to be greater than value given.
O	Sampled, but analysis not performed.
Q	Sample held beyond the accepted holding time.
U	Indicates that the compound was analyzed for but not detected. The reported value is the method detection limit.
V	Analyte was detected in both sample and associated method blank. Data may not be accurate.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies present (TNTC); the numeric value given represents the upper end of the value that can be determined based on the volume.
?	Data are rejected and should not be used. QC data did not meet acceptance criteria.
**	Analysis of analyte submitted to an accredited sub-contract laboratory.
!	Data deviate from historically established concentration range.
#	BCS Lab specific qualifier. See laboratory analysis notes.

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