



Biological Consulting Services

Of North Florida, Inc.

2023-02-07

Weeplow

209 Avenue de la Republique
93800 Epinay-sur-Seine France

Contact@weeplow.com

Client ID: Weeplow O Pure D, Weeplow O Pure E, Weeplow O Pure F
RE: Gravity Filter Units; Batch systems with reservoir

BCS ID: 2301178, 2301179, 2301180

Project Name: WeePlow 01192023 Microbial Filtration Efficacy

Dear Study Sponsor ,

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 Microbiological Reduction Efficacy: Screening of performance as per client request; BCS SOP-F1 (ISO17025:2017 accredited).

Report Conclusion: Study performed as per sponsors request

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

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Final Report BCS ID 2301178, 2301179, 2301180 Revision #1 GL 02/07/2023

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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4609 NW 6TH STREET, STE. A, GAINESVILLE, FLORIDA 32609
TEL. (352) 377-9272, FAX. (352) 377-5630

WWW.MICROBIOSERVICES.COM

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Analysis: *Total Coliforms Reduction Efficacy*

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9222)

Test Point: Initial Efficacy on Start of Day One

Challenge Date: 2023-01-31 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 256.4 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 8.4E+05 cfu/mL Ambient Temp(C): 23.5

Analysis Date: 2023-02-01 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weepow O Pure D				
Eff Conc 1: 3.8E+01 cfu/mL	% Reduct 1: 99.995	Log10 Reduct 1: 4.3			
BCS Sample ID 2: 2301179	Client ID 2: Weepow O Pure E				
Eff Conc 2: 5.3E+02 cfu/mL	% Reduct 2: 99.94	Log10 Reduct 2: 3.2			
BCS Sample ID 3: 2301180	Client ID 3: Weepow O Pure F				
Eff Conc 3: 4.3E+02 cfu/mL	% Reduct 3: 99.95	Log10 Reduct 3: 3.3			

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. coli* (25922) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9215)

Test Point: Initial Efficacy on Start of Day One

Challenge Date: 2023-01-31 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 256.4 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.2E+05 cfu/mL Ambient Temp(C): 23.5

Analysis Date: 2023-02-01 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weepow O Pure D				
Eff Conc 1: 1.1E+01 cfu/mL	% Reduct 1: 99.998	Log10 Reduct 1: 4.7			
BCS Sample ID 2: 2301179	Client ID 2: Weepow O Pure E				
Eff Conc 2: 1.6E+02 cfu/mL	% Reduct 2: 99.97	Log10 Reduct 2: 3.5			
BCS Sample ID 3: 2301180	Client ID 3: Weepow O Pure F				
Eff Conc 3: 1.8E+02 cfu/mL	% Reduct 3: 99.97	Log10 Reduct 3: 3.5			

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. faecalis* (ATCC 19433) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Method EPA 1600)

Test Point: Initial Efficacy on start of Day One

Challenge Date: 2023-01-31 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 256.4 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.1E+05 cfu/mL Ambient Temp(C): 23.5

Analysis Date: 2023-02-01 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weepow O Pure D

Eff Conc 1: 1.7E+01 cfu/mL % Reduct 1: 99.997 Log10 Reduct 1: 4.5

BCS Sample ID 2: 2301179 Client ID 2: Weepow O Pure E

Eff Conc 2: 1.6E+02 cfu/mL % Reduct 2: 99.97 Log10 Reduct 2: 3.5

BCS Sample ID 3: 2301180 Client ID 3: Weepow O Pure F

Eff Conc 3: 1.7E+02 cfu/mL % Reduct 3: 99.97 Log10 Reduct 3: 3.5

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *Total Coliforms Reduction Efficacy*

Test Water: General Test Water

Method: Spread Plating (Standard Method 9222) Test

Point: End of Day Two (150 Liters)

Challenge Date: 2023-02-01 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.9

pH: 7.4 Turbidity (NTU): 0.2 TOC (ppm): 0.5 TDS(ppm): 209.6 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 7.5E+05 cfu/mL Ambient Temp(C): 22.7

Analysis Date: 2023-02-02 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weeplow O Pure D				
Eff Conc 1: 5.3E+01 cfu/mL	% Reduct 1: 99.993	Log10 Reduct 1: 4.2			
BCS Sample ID 2: 2301179	Client ID 2: Weeplow O Pure E				
Eff Conc 2: 6.7E+02 cfu/mL	% Reduct 2: 99.91	Log10 Reduct 2: 3.0			
BCS Sample ID 3: 2301180	Client ID 3: Weeplow O Pure F				
Eff Conc 3: 5.9E+02 cfu/mL	% Reduct 3: 99.92	Log10 Reduct 3: 3.1			

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. coli* (25922) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9222)

Test Point: End of Day Two (150 Liters)

Challenge Date: 2023-02-01 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.9

pH: 7.4 Turbidity (NTU): 0.2 TOC (ppm): 0.5 TDS(ppm): 209.6 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 4.6E+05 cfu/mL Ambient Temp(C): 22.7

Analysis Date: 2023-02-02 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weepow O Pure D				
Eff Conc 1: 1.9E+01 cfu/mL	% Reduct 1: 99.996	Log10 Reduct 1: 4.4			
BCS Sample ID 2: 2301179	Client ID 2: Weepow O Pure E				
Eff Conc 2: 2.8E+02 cfu/mL	% Reduct 2: 99.94	Log10 Reduct 2: 3.2			
BCS Sample ID 3: 2301180	Client ID 3: Weepow O Pure F				
Eff Conc 3: 2.4E+02 cfu/mL	% Reduct 3: 99.95	Log10 Reduct 3: 3.3			

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. faecalis* (ATCC 19433) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Method EPA 1600)

Test Point: End of Day Two (150 Liters)

Challenge Date: 2023-02-01 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.9

pH: 7.4 Turbidity (NTU): 0.2 TOC (ppm): 0.5 TDS(ppm): 209.6 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.1E+05 cfu/mL Ambient Temp(C): 22.7

Analysis Date: 2023-02-02 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weeplow O Pure D

Eff Conc 1: 1.7E+01 cfu/mL % Reduct 1: 99.997 Log10 Reduct 1: 4.5

BCS Sample ID 2: 2301179 Client ID 2: Weeplow O Pure E

Eff Conc 2: 2.1E+02 cfu/mL % Reduct 2: 99.96 Log10 Reduct 2: 3.4

BCS Sample ID 3: 2301180 Client ID 3: Weeplow O Pure F

Eff Conc 3: 1.8E+02 cfu/mL % Reduct 3: 99.97 Log10 Reduct 3: 3.5

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *Total Coliforms Reduction Efficacy*

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9222)

Test Point: End of Day Three (225 Liters)

Challenge Date: 2023-02-02 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.1

pH: 7.4 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 202.1 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 8.8E+05 cfu/mL Ambient Temp(C): 22.1

Analysis Date: 2023-02-03 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weepow O Pure D				
Eff Conc 1: 3.3E+01 cfu/mL	% Reduct 1: 99.996	Log10 Reduct 1: 4.4			
BCS Sample ID 2: 2301179	Client ID 2: Weepow O Pure E				
Eff Conc 2: 4.3E+02 cfu/mL	% Reduct 2: 99.95	Log10 Reduct 2: 3.3			
BCS Sample ID 3: 2301180	Client ID 3: Weepow O Pure F				
Eff Conc 3: 3.0E+02 cfu/mL	% Reduct 3: 99.97	Log10 Reduct 3: 3.5			

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. coli* (25922) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9222)

Test Point: End of Day Three (225 Liters)

Challenge Date: 2023-02-02 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.1

pH: 7.4 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 202.1 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.7E+05 cfu/mL Ambient Temp(C): 22.1

Analysis Date: 2023-02-03 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weeplow O Pure D

Eff Conc 1: 2.6E+01 cfu/mL % Reduct 1: 99.995 Log10 Reduct 1: 4.3

BCS Sample ID 2: 2301179 Client ID 2: Weeplow O Pure E

Eff Conc 2: 3.6E+02 cfu/mL % Reduct 2: 99.94 Log10 Reduct 2: 3.2

BCS Sample ID 3: 2301180 Client ID 3: Weeplow O Pure F

Eff Conc 3: 2.5E+02 cfu/mL % Reduct 3: 99.96 Log10 Reduct 3: 3.4

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. faecalis* (ATCC 19433) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Method EPA 1600)

Test Point: End of Day Three (225 Liters)

Challenge Date: 2023-02-02 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.1

pH: 7.4 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 202.1 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.1E+05 cfu/mL Ambient Temp(C): 22.1

Analysis Date: 2023-02-03 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weepow O Pure D

Eff Conc 1: 2.0E+01 cfu/mL % Reduct 1: 99.996 Log10 Reduct 1: 4.4

BCS Sample ID 2: 2301179 Client ID 2: Weepow O Pure E

Eff Conc 2: 2.6E+02 cfu/mL % Reduct 2: 99.95 Log10 Reduct 2: 3.3

BCS Sample ID 3: 2301180 Client ID 3: Weepow O Pure F

Eff Conc 3: 2.2E+02 cfu/mL % Reduct 3: 99.96 Log10 Reduct 3: 3.4

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *Total Coliforms Reduction Efficacy* Analysis

Test Water: General Test Water

Method: Spread Plating (Standard Method 9222)

Test Point: End of Day Four (300 Liters)

Challenge Date: 2023-02-03 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 224.2 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 8.8E+05 cfu/mL Ambient Temp(C): 22.4

Analysis Date: 2023-02-04 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weepow O Pure D

Eff Conc 1: 4.3E+01 cfu/mL % Reduct 1: 99.995 Log10 Reduct 1: 4.3

BCS Sample ID 2: 2301179 Client ID 2: Weepow O Pure E

Eff Conc 2: 5.8E+02 cfu/mL % Reduct 2: 99.93 Log10 Reduct 2: 3.2

BCS Sample ID 3: 2301180 Client ID 3: Weepow O Pure F

Eff Conc 3: 3.9E+02 cfu/mL % Reduct 3: 99.96 Log10 Reduct 3: 3.4

Client: Weepow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. coli* (25922) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Standard Method 9222)

Test Point: End of Day Four (300 Liters)

Challenge Date: 2023-02-03 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 224.2 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.8E+05 cfu/mL Ambient Temp(C): 22.4

Analysis Date: 2023-02-04 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178	Client ID 1: Weeplow O Pure D				
Eff Conc 1: 4.0E+01 cfu/mL	% Reduct 1: 99.993	Log10 Reduct 1: 4.2			
BCS Sample ID 2: 2301179	Client ID 2: Weeplow O Pure E				
Eff Conc 2: 5.7E+02 cfu/mL	% Reduct 2: 99.9	Log10 Reduct 2: 3.0			
BCS Sample ID 3: 2301180	Client ID 3: Weeplow O Pure F				
Eff Conc 3: 3.6E+02 cfu/mL	% Reduct 3: 99.94	Log10 Reduct 3: 3.2			

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Analysis: *E. faecalis* (ATCC 19433) Reduction Efficacy

Test Water: General Test Water

Analysis Method: Spread Plating (Method EPA 1600)

Test Point: End of Day Four (300 Liters)

Challenge Date: 2023-02-03 Challenge Analysts: Jonathon Nunes

Initial Pres. (PSI): NA Temp(C): 20.5

pH: 7.3 Turbidity (NTU): 0.1 TOC (ppm): 0.4 TDS(ppm): 224.2 Hardness(ppm): NA

Alkalinity(ppm): NA Total Chlorine(ppm): 0.0 Polyphosphate (as ppm phosphorus): NA

Influent Conc: 5.0E+05 cfu/mL Ambient Temp(C): 22.4

Analysis Date: 2023-02-04 Analysts: Jonathon Nunes

Test Notes: Units' performance are provided below.

BCS Sample ID 1: 2301178 Client ID 1: Weeplow O Pure D

Eff Conc 1: 2.5E+01 cfu/mL % Reduct 1: 99.995 Log10 Reduct 1: 4.3

BCS Sample ID 2: 2301179 Client ID 2: Weeplow O Pure E

Eff Conc 2: 3.2E+03 cfu/mL % Reduct 2: 99.4 Log10 Reduct 2: 2.2

BCS Sample ID 3: 2301180 Client ID 3: Weeplow O Pure F

Eff Conc 3: 3.1E+02 cfu/mL % Reduct 3: 99.94 Log10 Reduct 3: 3.2

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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Project: WeePlow 01192023 Microbial Filtration Efficacy

Date Received: 2023-01-19 12:40 Test Start Date: 2023-01-31 Test End Date: 2023-02-04

System Type: Nonplumbed pourthrough batch sys. w/o manfac. Recom. use patr Est. Capacity: N/A

Performance Indicating Device: N/A Batch Volume: N/A Batch, number per day: N/A

Test Cycle (min): NA Volume Per Day: 75 L Restricted Flow Rate: No

Test Duration (hr/day): 8 Test Conditioning: See report notes

Report Notes:

The purifier units were received from the study sponsor and each was assigned the referenced BCS identifier. Units were assembled and conditioned as per sponsor's instructions. Two filters were inserted into each upper reservoir and remaining filter ports were sealed. Conditioning/priming was performed as per video: https://www.youtube.com/watch?v=fWCw630MyhU&ab_channel=BigBerkeyWaterFilters. This was followed by 4 complete cycles of filtration of 8 liters of water. Each of the units were tested for initial bacterial reduction efficacy. Aliquots of the challenge species were added to General Test Water (GTW, NSF P231 (dechlorinated municipal tap water)) and the water was homogenized. 8-liters of challenge water was added to each units' upper reservoir and allowed to pass through. The filters' effluent was collected in its entirety, and the cumulative flow rate was determined. Influent and effluent samples were analyzed shortly following collection. following the challenge, water passage through each of the units was continued so that 75 liters of water was passed through each of the units on days 1-4. A float valve ensured that water level remained at full height (approximately 8 liters) in the upper reservoir except during no flow condition (overnight). The microbial filter challenge was repeated on days 1-4. The study was conducted as per laboratory's accredited ISO17025:2017 methodology: bacteria as per SM 9222 (APHA 2012) and EPA 1600, turbidity was determined as per SM2130B, pH as per SM4500HB, TDS as per SM2510, chlorine as per SM4500-Cl G, Total Organic Carbon (TOC) as per SM5310C, & hardness as per SM2340C (if needed). All analysis was conducted using calibrated and/or validated Instruments to traceable standards (NIST). All method QC was within method acceptance limit. No general environmental conditions are specified in the standard or have been identified that could affect the test results or measurements. END OF REPORT NOTES.

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

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*I certify that I have examined and I am familiar with the information submitted herein. The results pertain only to the sample(s) tested, associated identifier #(s), and condition at receipt. 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 following receipt. 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 17025-2017 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: 2023-02-04

Client: Weeplow

Project: WeePlow 01192023 Microbial Filtration Efficacy

BCS LABORATORIES, INC. — GAINESVILLE
4609 NW 6TH STREET, STE. A, GAINESVILLE, FLORIDA 32609
TEL. (352) 377-9272, FAX. (352) 377-5630

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Pictures:



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*Balance ID: BL-10	Description: Sartorius Practum Precision Balance
Range of Function: 0-3100 g	Instrument Reporting Limit: 0.01g
Last Service Date: 2022-08-09	Service Due Date: 2023-08-09
Service Type: Manufacturer Cal	NIST Validation Instrument: Reference Std/Instrument
*pH Meter ID: PH-09	Description: Orion Versa Star Pro Meter w/pH and Conductivity Modules
Range of Function: 0.001-12.000	Instrument Reporting Limit: 0.001
Last Service Date: 2023-01-31	Service Due Date: 2023-02-04
Service Type: Validation to NIST	NIST Validation Instrument: NIST Standard Solutions
*Conductivity Meter ID: CM-08	Description: Orion Versa Star Pro Meter w/pH and Conductivity Modules
Range of Function: 0.01-2400 ppm	Instrument Reporting Limit: 0.01ppm
Last Service Date: 2023-01-31	Service Due Date: 2023-02-04
Service Type: Validation to NIST	NIST Validation Instrument: NIST Standard Solutions
*Alkalinity Meter ID: N/A	Description:
Range of Function:	Instrument Reporting Limit:
Last Service Date:	Service Due Date:
Service Type:	NIST Validation Instrument:
*Hardness Meter ID: N/A	Description:
Range of Function:	Instrument Reporting Limit:
Last Service Date:	Service Due Date:
Service Type:	NIST Validation Instrument:
*Turbidity Meter ID: TM-05	Description: Hach Turbidimeter
Range of Function: 0.00-999NTU	Instrument Reporting Limit: 0.01NTU
Last Service Date: 2022-10-04	Service Due Date: 2023-10-04
Service Type: Manufacturer OEM	NIST Validation Instrument: NIST Standard Solutions
*Spectrophotometer ID: SPEC-02	Description: Hach DR 3900 Spectrophotometer Colorimeter
Range of Function: 320-1000nm	Instrument Reporting Limit: 0.01nm
Last Service Date: 2023-01-25	Service Due Date: 2024-01-25
Service Type: Manufacturer service	NIST Validation Instrument: NIST Standard Solutions
Incubator ID: I-20	Description: Thermo Fisher Forma 29 cu. ft. Reach-In Incubator
Range of Function: 10-65C	Instrument Reporting Limit: 0.1C
Last Service Date: 2022-09-02	Service Due Date: 2023-09-30
Service Type: Annual Service	NIST Validation Instrument: Reference Std./Instrument

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**Flow Meter ID 1: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
**Flow Meter ID 2: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
**Flow Meter ID 3: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Microscope ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Refrigerator ID: FR-11	Description: Migali B Series Glass Door Refrigerator		
Range of Function: 1-8C		Instrument Reporting Limit: N/A	
Last Service Date: 2022-09-02		Service Due Date: 2023-09-30	
Service Type: Annual Service		NIST Validation Instrument: Reference Std./Instrument	
Centrifuge ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Pressure Source Pump ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Pressure Meter ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	

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Cert. Pressure Meter ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
TOC Analyzer ID: TOC-01	Description: GE M5310C Lab TOC Analyzer		
Range of Function: 40ppb-50ppm		Instrument Reporting Limit: 0.01ppb	
Last Service Date: 2022-04-27		Service Due Date: 2023-04-27	
Service Type: Manufacturer Cal.		NIST Validation Instrument: NIST Standard Solutions	
Spectrograph ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Thermometer ID: IR-11 NIST	Description: VWR Traceable Infrared Thermometer Gun		
Range of Function: 0-300 C		Instrument Reporting Limit: 0.1 C	
Last Service Date: 2022-09-12		Service Due Date: 2023-09-12	
Service Type: Annual calibration		NIST Validation Instrument: Manufacturer calibration	
Particle Counter ID: N/A	Description:		
Range of Function:		Instrument Reporting Limit:	
Last Service Date:		Service Due Date:	
Service Type:		NIST Validation Instrument:	
Timer ID: T-45	Description: VWR Traceable Lap-Top Timer		
NIST Expiration Date: 2024-01-04			
*Validated at each day of use using NIST traceable standards. Other major equipment validated quarterly.			
**Validated at each use using traceable volume and time measurements.			
All above equipment with completed fields were used from Test Start Date to Test End Date unless otherwise noted. Service Date indicates PM or calibration by accredited service provider. Service Dates reported for latest period. If Last Service Date occurs during study duration, please contact us for the previous period's validation information.			

END OF REPORT

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