July 25, 2018

Bill Carson
Go Fan Yourself
1032 National Parkway
Schaumburg, IL 60173
920-723-0531
bill@gofanyourself.com
Client ID: Recirculite With UV

BCS ID: 1806202, 1806203

Project Name: Recirculite with UV Efficacy Testing

Dear Bill Carson,

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

Client requested protocol; BCS SOP-D1 (ISO17025 accredited)

Following, you will find our report 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 (ANAB), PA DEP# 68-03950, EPA# FL01147

Analysis: *K. pneumoniae Aerosol Inactivation By Recirculite w/UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.2E+05 cfu/mL Contact Time: 60 and 120 Minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test Point: Efficacy at 1-Hour Qualifier: NONE

End Conc.**: 5.1E+02 cfu/mL % Reduct.: 99.6 Log10 Reduct.: 2.4

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours End Qualifier: U

Conc.**: <3.0E-01 cfu/mL % Reduct.: > 99 .9998 Log10 Reduct.: >5.6

Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: Undetected: Analyte was not detected in the sample analyzed; Value represents the method's detection limit for the amount of sample analyzed as per the method's standard reporting units

*Start Conc. is average concentration at time zero. **End Conc. is the average recovery following treatment

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Analysis: *K. pneumoniae Aerosol Inactivation By Recirculite w/o UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.2E+05 cfu/mL Contact Time: 60 and 120 Minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test Point: Efficacy at 1-Hour Qualifier: NONE

End Conc.**: 8.3E+04 cfu/mL % Reduct.: 30.8 Log10 Reduct.: 0.2

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours Qualifier: NONE

End Conc.**: 2.8E+03 cfu/mL % Reduct.: 97.7 Log10 Reduct.: 1.6

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

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Analysis: *K. pneumoniae Aerosol Inactivation w/o Recirculite and w/o UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.2E+05 cfu/mL Contact Time: 60 and 120 Minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test Point: Efficacy at 1-Hour Qualifier:

End Conc.**: 5.6E+04 cfu/mL % Reduct.: 53.3 Log10 Reduct.: 0.3

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours Qualifier:

End Conc.**: 9.1E+01 cfu/mL % Reduct.: 99.9 Log10 Reduct.: 3.1

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

*Start Conc. is average concentration at time zero. **End Conc. is the average recovery following treatment

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Analysis: *MS2 Virus Aerosol Inactivation By Recirculite w/UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.4E+05 pfu/mL Contact Time: 60 and 120 Minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test Point: Efficacy at 1-Hour Qualifier:

End Conc.**: 2.3E+03 pfu/mL % Reduct.: 98.4 Log10 Reduct.: 1.8

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours Qualifier:

End Conc.**: 5.5E+01 pfu/mL % Reduct.: 99.96 Log10 Reduct.: 3.4

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

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Analysis: *MS2 Virus Aerosol Inactivation By Recirculite w/o UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.1E+05 pfu/mL Contact Time: 60 and 120 Minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test Point: Efficacy at 1-Hour Qualifier:

End Conc.**: 8.0E+04 pfu/mL % Reduct.: 27.2 Log10 Reduct.: 0.1

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours Qualifier:

End Conc.**: 3.0E+03 pfu/mL % Reduct.: 97.2 Log10 Reduct.: 1.6

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

*Start Conc. is average concentration at time zero. **End Conc. is the average recovery following treatment

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Analysis: *MS2 Virus Aerosol Inactivation w/o Recirculite and w/o UV* Test Carrier: Aerosolized Particles

Application Method: Unit Placed in a Sealed Room with an Aerosol Generator Temp.: 22.6 C

Conformance of Study Control Data: Negative Control: Yes Positive Control: Yes Neutralizer Control: N/A

Start Conc.*: 1.3E+05 pfu/mL Contact Time: 60 and 120 minutes

Analyst: David Sekora, M.S. Challenge Start Date: 07/21/2018

BCS Sample ID: 1806202 Test point: Efficacy at 1-Hour Qualifier:

End Conc.**: 4.5E+04 pfu/mL % Reduct.: 65.3 Log10 Reduct.: 0.5

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

BCS Sample ID: 1806203 Test Point: Efficacy at 2-Hours Qualifier:

End Conc.**: 8.9E+02 pfu/mL % Reduct.: 99.3 Log10 Reduct.: 2.2

Sample Analyst: David Sekora, M.S. Sample Analysis Date: 07/21/2018

Sample Notes: None to report.

*Start Conc. is average concentration at time zero. **End Conc. is the average recovery following treatment

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Project: Recirculite with UV Efficacy Testing

Date Received: June 25, 2018 10:30

Test Start Date: July 21, 2018 Test End Date: July 22, 2018

Report Notes:

The referenced units were received from Go Fan Yourself. Each unit was assigned the referenced BCS identifier numbers; 1806202 and 1806203. As per client's request, the study was conducted to verify the units' microbial reduction efficacy of aerosolized contaminants. The units were mounted on the ceiling in a sealed 11' 10"x 11' 10" x 8'1" (1125 cu.ft) controlled environment room. The units fan and UV lamps were powered on and allowed to warm up over the course of 2-hours as part of conditioning. Aliquots of the microorganisms were added to a pre-sterilized nebulizer reservoir. Following, the units were switched off, the testing room was sealed; all equipment activation was performed remotely. The nebulizer was powered to aerosolize the microbial suspension. Following 5 minutes, the Recirculite fans and UV lamps were powered on. Samples of the air were collected immediately after unit activation using Bio-aerosol air impinger (Biosampler, SKC, Inc.). The air sample were collected over the course of three minutes. Air samples were collected again following 1 and 2-hours following start. The systems were deactivated and the room was exhausted for 25 minutes before entry for sample retrieval and subsequent analysis. The study was repeated as described with only the fans of the Recirculite units running and then again with the units completely powered off. All collected samples were analyzed in triplicate at the minimum as per standard lab operating procedures. Analysis was conducted as per laboratory's accredited ISO17025:2005 methodology: bacteria were analyzed as per SM 9215 (APHA 2012) and MS-2 as per EPA 1602. Analysis was conducted using calibrated and/or validated Instruments to traceable standards (NIST). All 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.

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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) analyzed and 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 its/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 its (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: July 25, 2018

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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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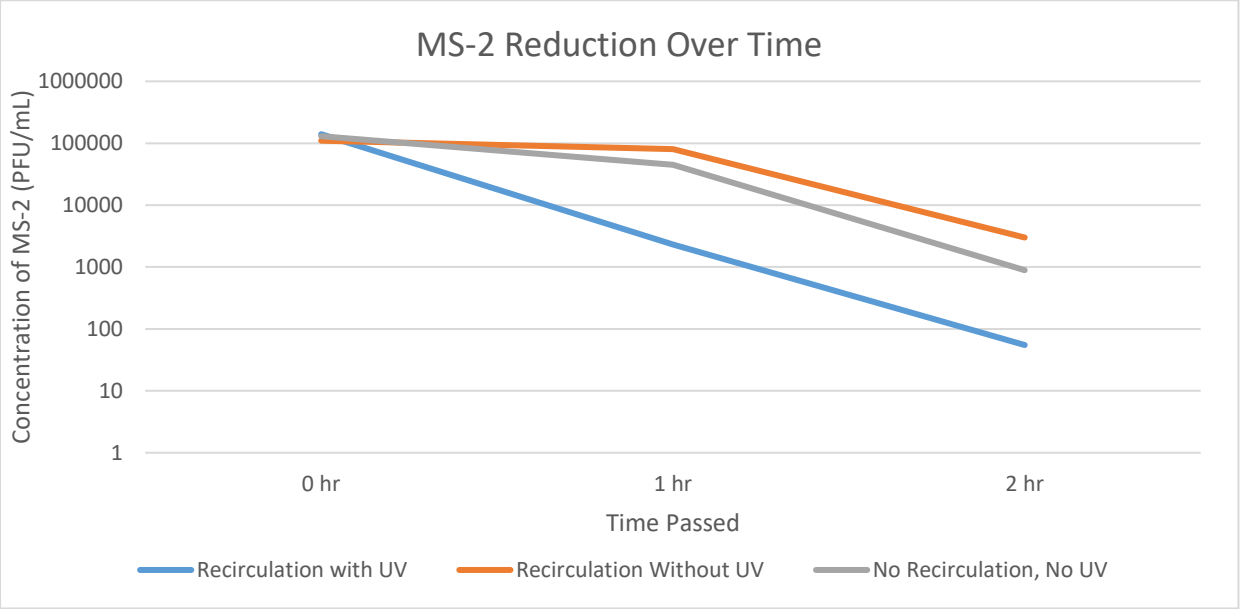
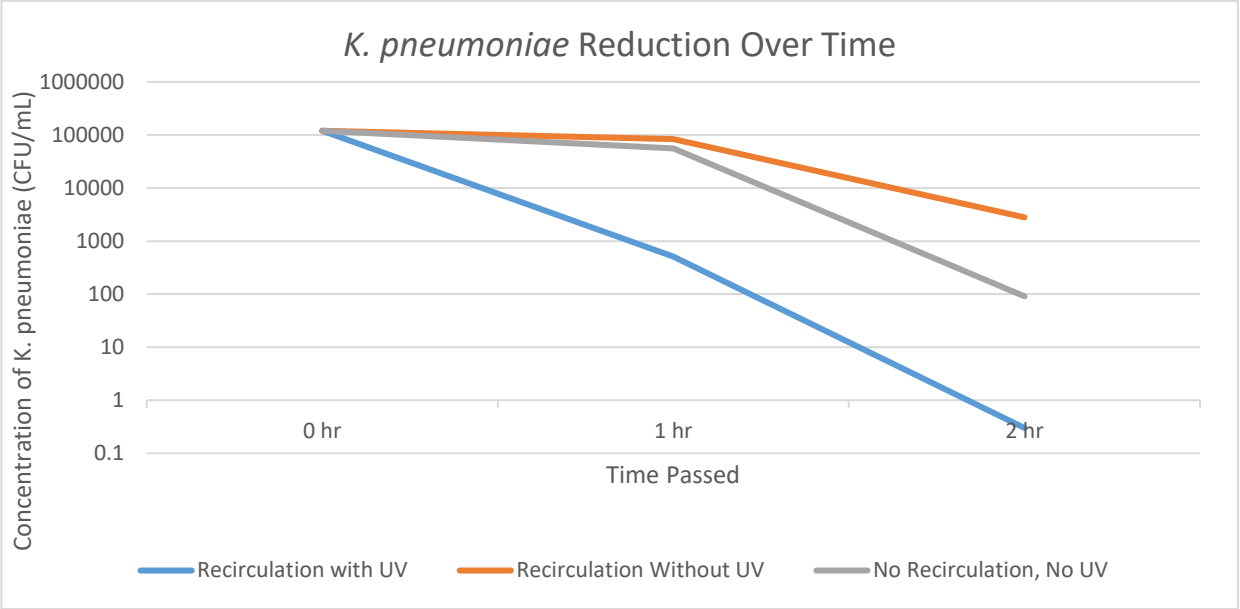
Appendix





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