



November 16, 2010  
Report #: N1049097

UV Flu Technologies, Inc.  
*Attn: Roger Nelson, Director of Operations*  
1694 Falmouth Road #125  
Centerville, MA 02632

EmailAddress: RKN802@aol.com

Dear Mr. Nelson:

**Ref: CHAMBER STUDY: Phage Reduction in a Chamber Test (Using the UV Flu 400 Unit)**

Enclosed is a report on the findings of tests conducted on the UF Flu 400 Air Purifier, submitted to Northeast Laboratories, Inc. on September 10, 2010. This report references earlier reports under the EcoAir brand.

The results show good reduction in phage levels at all speeds tested. The results are based on analysis using the two (2) units supplied. Units were allowed to run for several hours as a break-in

If you have any questions concerning any of the results or any comments concerning this report, please feel free to contact us at any time.

**CHAMBER STUDY:**

1. Please see previous reports for details on the chamber (March 23, 2007 and May 07, 2007 for Eco-Rx).
2. The study organism was Escherichia coli bacteriophage MS2, ATCC 15597-B1. The host culture was Escherichia coli ATCC 13706. Escherichia coli was revived per ATCC instructions, with a six (6) hour host used for recovery and propagation of coliphage MS2.
3. Initial recovery showed levels of phage from 10,000 to 30,000 plaque-forming units (PFU) per milliliter of recovery broth.
4. Phage for inoculation was propagated in Tryptic Soy Broth with Glycerin (as per Standard Methods for the Examination of Water and Wastewater #9211D). Aliquots were incubated overnight, briefly sonicated, centrifuged and the supernatant filtered through 0.45µm syringe filters (glass microfiber). Sterile 50mL centrifuge tubes were used for storage; cultures were frozen at -22°C in a non-frost-free freezer.
5. Phage for chamber inoculation were thawed overnight in a refrigerator.
6. Chamber was inoculated through aerosolization of the TSB/Glycerin mixture using a DeVilbiss Model 15 Atomizer with a 25 mL reservoir.

Northeast Laboratories, Inc. 129 Mill Street Berlin, CT 06037

[www.nelabsct.com](http://www.nelabsct.com)

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*continued . . .*

- 7. Anemometer Readings for the three (3) speeds used on the UV Flu 400:
  - High: 1,062 FPM
  - Medium: 750 FPM
  - Low: 344 FPM
- 8. Lethen Broth was used for recovery of Coliphage from the atmosphere. Some foaming was noted, but a second impinger was placed in series to capture any carryover.
- 9. Samples were plated into Tryptic Soy Agar containing E.coli host. Plates were incubated at 35°C for six (6) hours, and then reincubated another eighteen (18) hours. All plaques were counted. Plaques varied from clear to hazy and halo-like.

**SUMMARY OF RESULTS: % Reduction @ Specific Settings**  
**(corrected for natural decay)**

<b><u>High Speed:</u></b>	One (1) Hour:	63.6
	Two (2) Hours:	97.6
	Three (3) Hours:	99.2
	Four (4) Hours:	>99.2
<b><u>Medium Speed:</u></b>	One (1) Hour:	91.9
	Two (2) Hours:	99.0
	Three (3) Hours:	>99.8
	Four (4) Hours:	>99.8
<b><u>Low Speed:</u></b>	One (1) Hour:	84.5
	Two (2) Hours:	93.3
	Three (3) Hours:	97.5
	Four (4) Hours:	99.1

Approved by: \_\_\_\_\_  
Laboratory Director



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*continued...*

## 1. Chamber Study -- NO UV USED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/18/2010	Temperature:	70°F	Relative Humidity:	43%
Test Organism:	Coliphage MS2		ATCC#:	15597.B1	
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 8:42 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	9:01	9:16	3.5	52.5
Time chamber inoculated:	9:20			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	9:35	9:50	3.5	52.5
Time UV Unit Started:	No UV in Use			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	10:53	11:08	3.5	52.5
Time 2 (120 min.):	11:55	12:10	3.5	52.5
Time 3 (180 min.):	12:58	1:13	3.5	52.5
Time 4 (240 min.):	1:59	2:14	3.5	52.5

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<170
Baseline	120	14	---	---	21,000
Time 1 (60 min = 1 hour)	84	3	---	---	12,000
Time 2 (120 min = 2 hours)	77	12	---	---	10,000
Time 3 (180 min = 3 hours)	59	7	---	---	7,000
Time 4 (240 min = 4 hours)	39	1	---	---	3,900

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued . . .*

## 2. Chamber Study -- NO UV USED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>		
Date:	10/19/2010	Temperature:	72°F
		Relative Humidity:	41%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1
Phage Solution Volume:	50 mL		

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 7:45 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	8:00	8:15	3.5	52.5
Time chamber inoculated:	8:20			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	8:35	8:50	3.5	52.5
Time UV Unit Started:	No UV in Use			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	10:00	10:15	3.5	52.5
Time 2 (120 min.):	11:00	11:15	3.5	52.5
Time 3 (180 min.):	12:04	12:19	3.5	52.5
Time 4 (240 min.):	1:05	1:20	3.5	52.5

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<170
Baseline	180	18	---	---	31,000
Time 1 (60 min = 1 hour)	66	3	---	---	11,000
Time 2 (120 min = 2 hours)	56	3	---	---	9,600
Time 3 (180 min = 3 hours)	22	6	---	---	3,800
Time 4 (240 min = 4 hours)	9	2	---	---	1,500

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued . . .*

### **3 Chamber Study -- NO UV USED**

Chamber volume:	<u>12.04 m<sup>3</sup> / 12,036 Liters / 425 ft<sup>3</sup></u>		
Date:	<u>10/19/2010</u>	Temperature:	<u>72°F</u>
		Relative Humidity:	<u>41%</u>
Test Organism:	<u>Coliphage MS2</u>	ATCC#:	<u>15597.B1</u>
Phage Solution Volume:	<u>50 mL</u>		

#### **TESTING:**

Impinger solution Volume: 9 mL  
Air circulation started: 7:45 am

#### **Sampling:**

<u>Air Pump:</u>	<u>Time ON</u>	<u>Time OFF</u>	<u>Flow (LPM)</u>	<u>Volume (Liters)</u>
Background	<u>1:55</u>	<u>2:10</u>	<u>3.5</u>	<u>52.5</u>
Time chamber inoculated:	<u>2:48</u>			
<u>Air Pump:</u>	<u>Time ON</u>	<u>Time OFF</u>	<u>Flow (LPM)</u>	<u>Volume (Liters)</u>
Baseline:	<u>2:30</u>	<u>2:45</u>	<u>3.5</u>	<u>52.5</u>
Time UV Unit Started:	No UV in Use			
<u>Air Pump:</u>	<u>Time ON</u>	<u>Time OFF</u>	<u>Flow (LPM)</u>	<u>Volume (Liters)</u>
Time 1 (60 min.):	<u>3:15</u>	<u>3:30</u>	<u>3.5</u>	<u>52.5</u>
Time 2 (120 min.):	<u>4:15</u>	<u>4:30</u>	<u>3.5</u>	<u>52.5</u>
Time 3 (180 min.):	<u>5:15</u>	<u>5:30</u>	<u>3.5</u>	<u>52.5</u>
Time 4 (240 min.):	<u>6:15</u>	<u>6:30</u>	<u>3.5</u>	<u>52.5</u>

#### **Phage Plaque Counts**

<u>Sample Volume Used:</u>	<u>1 mL</u>	<u>0.1 mL</u>	<u>0.01 mL</u>	<u>0.001 mL</u>	<u>CFU/m3</u>
Background	<u>0</u>	<u>0</u>	---	---	<u>&lt;170</u>
Baseline	<u>61</u>	<u>3</u>	---	---	<u>10,000</u>
Time 1 (60 min = 1 hour)	<u>53</u>	<u>0</u>	---	---	<u>9,100</u>
Time 2 (120 min = 2 hours)	<u>50</u>	<u>6</u>	---	---	<u>8,600</u>
Time 3 (180 min = 3 hours)	<u>41</u>	<u>9</u>	---	---	<u>7,000</u>
Time 4 (240 min = 4 hours)	<u>21</u>	<u>7</u>	---	---	<u>3,600</u>

#### **PFU Per Plate:**

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued...*

### 4. Chamber Study -- UNIT ON HIGH SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	11/01/2010	Temperature:	76°F	Relative Humidity:	35%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1		
Phage Solution Volume:	50 mL				

**TESTING:**

Impinger solution Volume: 9 mL  
Air circulation started: 8:43 am

**Sampling:**

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	9:00	9:30	3.5	105
Time chamber inoculated:	9:35			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	9:50	10:05	3.5	105
Time UV Unit Started:	10:10			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	11:10	11:40	3.5	105
Time 2 (120 min.):	12:10	12:40	3.5	105
Time 3 (180 min.):	1:10	1:40	3.5	105
Time 4 (240 min.):	2:10	2:40	3.5	105

**Phage Plaque Counts**

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<86
Baseline	190	13	---	---	16,000
Time 1 (60 min = 1 hour)	26	3	---	---	2,200
Time 2 (120 min = 2 hours)	0	0	---	---	<86
Time 3 (180 min = 3 hours)	0	0	---	---	<86
Time 4 (240 min = 4 hours)	0	0	---	---	<86

**PFU Per Plate:**

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued . . .*

## 5. Chamber Study -- UNIT ON HIGH SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/21/2010	Temperature:	70°F	Relative Humidity:	40%
Test Organism:	Coliphage MS2		ATCC#:	15597.B1	
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 8:40 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	8:55	9:20	3.5	87.5
Time chamber inoculated:	9:30			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	9:45	10:15	3.5	105
Time UV Unit Started:	10:18			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	11:20	11:50	3.5	105
Time 2 (120 min.):	12:20	12:50	3.5	105
Time 3 (180 min.):	1:20	1:50	3.5	105
Time 4 (240 min.):	2:20	2:50	3.5	105

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<100
Baseline	87	12	---	---	7,457
Time 1 (60 min = 1 hour)	21	7	---	---	1,800
Time 2 (120 min = 2 hours)	4	0	---	---	342
Time 3 (180 min = 3 hours)	1	0	---	---	87
Time 4 (240 min = 4 hours)	0	0	---	---	<87

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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continued...

6. Chamber Study -- UNIT ON HIGH SPEED

Chamber volume: 12.04 m³ / 12,036 Liters / 425 ft³
Date: 10/22/2010 Temperature: 75°F Relative Humidity: 34%
Test Organism: Coliphage MS2 ATCC#: 15597.B1
Phage Solution Volume: 50 mL

TESTING:

Impinger solution Volume: 9 mL
Air circulation started: 8:31 am

Sampling:

Table with 5 columns: Air Pump, Time ON, Time OFF, Flow (LPM), Volume (Liters). Rows include chamber inoculation and four sampling times (60, 120, 180, 240 min).

Phage Plaque Counts

Table with 6 columns: Sample Volume Used, 1 mL, 0.1 mL, 0.01 mL, 0.001 mL, CFU/m3. Rows include Background, Baseline, and four time points (60, 120, 180, 240 min).

PFU Per Plate:

Phage: PFU per cubic meter =
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter





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*continued . . .*

## 7. Chamber Study -- UNIT ON MEDIUM SPEED

Chamber volume:	<u>12.04 m<sup>3</sup> / 12,036 Liters / 425 ft<sup>3</sup></u>		
Date:	<u>11/02/2010</u>	Temperature:	<u>77°F</u>
		Relative Humidity:	<u>31%</u>
Test Organism:	<u>Coliphage MS2</u>	ATCC#:	<u>15597.B1</u>
Phage Solution Volume:	<u>50 mL</u>		

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 10:33 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	<u>10:45</u>	<u>11:15</u>	<u>3.5</u>	<u>105</u>
Time chamber inoculated:	<u>11:18</u>			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	<u>11:30</u>	<u>12:00</u>	<u>3.5</u>	<u>52.5</u>
Time UV Unit Started:	<u>12:00</u>			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	<u>1:00</u>	<u>1:30</u>	<u>3.5</u>	<u>105</u>
Time 2 (120 min.):	<u>2:00</u>	<u>2:30</u>	<u>3.5</u>	<u>105</u>
Time 3 (180 min.):	<u>3:00</u>	<u>3:30</u>	<u>3.5</u>	<u>105</u>
Time 4 (240 min.):	<u>4:00</u>	<u>4:30</u>	<u>3.5</u>	<u>105</u>

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	<u>0</u>	<u>0</u>	---	---	<u>&lt;86</u>
Baseline	<u>190</u>	<u>11</u>	---	---	<u>16,000</u>
Time 1 (60 min = 1 hour)	<u>19</u>	<u>1</u>	---	---	<u>1,600</u>
Time 2 (120 min = 2 hours)	<u>3</u>	<u>2</u>	---	---	<u>260</u>
Time 3 (180 min = 3 hours)	<u>0</u>	<u>0</u>	---	---	<u>&lt;86</u>
Time 4 (240 min = 4 hours)	<u>0</u>	<u>0</u>	---	---	<u>&lt;86</u>

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued . . .*

### 8. Chamber Study -- UNIT ON MEDIUM SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/25/2010	Temperature:	70°F	Relative Humidity:	43%
Test Organism:	Coliphage MS2		ATCC#:	15597.B1	
Phage Solution Volume:	50 mL				

**TESTING:**

Impinger solution Volume: 9 mL  
Air circulation started: 8:42 am

**Sampling:**

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	8:58	9:23	3.5	105
Time chamber inoculated:	9:45			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	10:00	10:15	3.5	105
Time UV Unit Started:	10:20			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	11:20	11:50	3.5	105
Time 2 (120 min.):	12:20	12:50	3.5	105
Time 3 (180 min.):	1:20	1:50	3.5	105
Time 4 (240 min.):	2:20	2:50	3.5	105

**Phage Plaque Counts**

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<86
Baseline	TNTC	77	---	---	66,000
Time 1 (60 min = 1 hour)	29	1	---	---	2,500
Time 2 (120 min = 2 hours)	1	1	---	---	26
Time 3 (180 min = 3 hours)	0	0	---	---	<26
Time 4 (240 min = 4 hours)	0	0	---	---	<26

**PFU Per Plate:**

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued . . .*

## 9. Chamber Study -- UNIT ON MEDIUM SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/26/2010	Temperature:	72°F	Relative Humidity:	52%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1		
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 9:15 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	9:30	10:00	3.5	105
Time chamber inoculated:	10:08			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	10:20	10:50	3.5	105
Time UV Unit Started:	11:00			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	12:00	12:30	3.5	105
Time 2 (120 min.):	1:00	1:30	3.5	105
Time 3 (180 min.):	2:00	2:30	3.5	105
Time 4 (240 min.):	3:00	3:30	3.5	105

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<86
Baseline	290	11	---	---	25,000
Time 1 (60 min = 1 hour)	16	1	---	---	1,400
Time 2 (120 min = 2 hours)	2	0	---	---	170
Time 3 (180 min = 3 hours)	0	0	---	---	<86
Time 4 (240 min = 4 hours)	0	0	---	---	<86

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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*continued...*

## 10. Chamber Study -- UNIT ON LOW SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/27/2010	Temperature:	73°F	Relative Humidity:	56%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1		
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 8:55 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	9:15	9:45	3.5	105
Time chamber inoculated:	10:00			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	10:30	11:00	3.5	105
Time UV Unit Started:	11:00			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	12:00	12:30	3.5	105
Time 2 (120 min.):	1:00	1:30	3.5	105
Time 3 (180 min.):	2:00	2:30	3.5	105
Time 4 (240 min.):	3:00	3:30	3.5	105

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<86
Baseline	99	10	---	---	8,500
Time 1 (60 min = 1 hour)	9	0	---	---	770
Time 2 (120 min = 2 hours)	3	0	---	---	260
Time 3 (180 min = 3 hours)	0	0	---	---	<86
Time 4 (240 min = 4 hours)	0	0	---	---	<86

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



UV Flu Technologies, Inc.  
Attn: Roger Nelson, Director of Operations  
1694 Falmouth Road #125  
Centerville, MA 02632

November 16, 2010  
Report #: N1049097

**Ref: CHAMBER STUDY: Phage Reduction in a Chamber Test (Using the UV Flu 400 Unit)**  
*continued . . .*

## 11. Chamber Study -- UNIT ON LOW SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/28/2010	Temperature:	73°F	Relative Humidity:	55%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1		
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 9:05 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	9:25	9:55	3.5	105
Time chamber inoculated:	10:00			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	10:15	10:45	3.5	105
Time UV Unit Started:	10:48			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	11:45	12:15	3.5	105
Time 2 (120 min.):	12:45	1:15	3.5	105
Time 3 (180 min.):	1:45	2:15	3.5	105
Time 4 (240 min.):	2:45	3:15	3.5	105

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 mL	0.01 mL	0.001 mL	CFU/m3
Background	0	0	---	---	<86
Baseline	270	17	---	---	23,000
Time 1 (60 min = 1 hour)	16	1	---	---	1,400
Time 2 (120 min = 2 hours)	0	0	---	---	<86
Time 3 (180 min = 3 hours)	1	0	---	---	86
Time 4 (240 min = 4 hours)	0	0	---	---	<86

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter



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**Ref: CHAMBER STUDY: Phage Reduction in a Chamber Test (Using the UV Flu 400 Unit)**  
*continued . . .*

## 12. Chamber Study -- UNIT ON LOW SPEED

Chamber volume:	12.04 m <sup>3</sup> / 12,036 Liters / 425 ft <sup>3</sup>				
Date:	10/29/2010	Temperature:	71°F	Relative Humidity:	39%
Test Organism:	Coliphage MS2	ATCC#:	15597.B1		
Phage Solution Volume:	50 mL				

### TESTING:

Impinger solution Volume: 9 mL  
Air circulation started: 8:25 am

### Sampling:

Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Background	8:45	9:15	3.5	105
Time chamber inoculated:	9:20			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Baseline:	9:35	10:05	3.5	105
Time UV Unit Started:	10:10			
Air Pump:	Time ON	Time OFF	Flow (LPM)	Volume (Liters)
Time 1 (60 min.):	10:40	11:10	3.5	105
Time 2 (120 min.):	11:40	12:10	3.5	105
Time 3 (180 min.):	12:40	1:10	3.5	105
Time 4 (240 min.):	1:40	2:10	3.5	105

### Phage Plaque Counts

Sample Volume Used:	1 mL	0.1 ML	0.01 mL	0.001 ML	CFU/m3
Background	0	0	---	---	<86
Baseline	210	11	---	---	18,000
Time 1 (60 min = 1 hour)	26	8	---	---	2,200
Time 2 (120 min = 2 hours)	16	2	---	---	1,400
Time 3 (180 min = 3 hours)	4	1	---	---	340
Time 4 (240 min = 4 hours)	0	0	---	---	<86

### PFU Per Plate:

Phage: PFU per cubic meter =  
Plaques / Plate (dilution volume) 9,000 per air volume in liters = PFU per cubic meter