3933 US Route 11
Cortland, NY 13045

Telephone: +01 607 753 6711
Facsimile: +01 607 756 9891
www.intertek-etlsemko.com

26 July 2010

Mr. Rudy Vandenbelt
FilterStream - div. of Headwaters Inc.
169 Ethel St
Ottawa, ON K1L 5X3 CAN
Ph: +01 (613)-521-6715
Fx: +01 (613)-482-1759
Email: rudy.vandenbelt@filterstream.com

Mr. Vandenbelt,

We appreciate the opportunity to be of service to you. Please find enclosed one (1) copy of Report No. G100128113CRT-001, covering the ozone emissions test on the model(s) noted below as per quote 500234544.

Sample #	Model Number	Serial Number	Control Number
1 of 2	AirTamer A302	NA	208439.00
2 of 2	AirTamer A302	NA	208439.01

If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned or your account representative, Deb Blanchard at 607-758-6348.

Sincerely,

Denis Niggli
Associate Engineer

3933 US Route 11
Cortland, NY 13045

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Facsimile: +01 607 756 9891
www.intertek-etlsemko.com

Order No. G100128113 26 July 2010

Report Number: G100128113CRT-001
Model Number: AirTamer A302
ARB Number: 1227

RENDERED TO:

Mr. Rudy Vandenbelt
FilterStream - div. of Headwaters Inc.
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Ottawa, ON K1L 5X3 CAN
Ph: +01 (613)-521-6715
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Report Scope:	Ozone Emissions Testing of Household Electrostatic Air Cleaners.
Limitation Statement:	The test data and results contained in this report are provided for client information and evaluation. No conclusions are drawn by Intertek.
Authorization:	The tests were authorized by signed quote # 500234544, dated 5/20/2010.
Standard Used:	UL Standard for Safety for Electrostatic Air Cleaners, UL 867, Section 37 Fourth Edition, December 21, 2007. - Std. 867 Certification Requirement Decision, Section/Paragraph 37.2.2 a) 2), Ozone Test – Chamber Air tightness - Std. 867 Certification Requirement Decision, Section/Paragraph 37.4.8 & 37A.5, Ozone Test – Test Conditions. - Std. 867 Certification Requirement Decision, Section/Paragraph 37A.1, Peak Ozone Determination Test – Room Dimensions. - Std. 867 Certification Requirement Decision, Section/Paragraph 37.4.6, Definition of Steady-State Hours 7-8. - Std. 867 Certification Requirement Decision, Section/Paragraph 37.2.3, Chamber Setup. - Std. 867 Certification Requirement Decision, Section/Paragraph 3.3A, 3.9A, 3.11A , 37.4.6A, 37.4.7, 37.4.8, 37A.5, 37A.4, 37.5A, 37A.5, 37A.5B, 37.4.1. Filter Test Iterations.
Report Content:	1. Unit Under Test 2. Peak Ozone Test Results 3. Max Ozone Test Results 4. Chamber Equipment 5. Summary/Signatures 6. Appendix

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1. Unit Under Test Information

MODEL

Manufacturer:	Headwaters, Inc.	Pre-Filter:	No
Model Number:	AirTamer A302	HEPA Filter:	No
		ESP Filter:	No
Output Setting:	1	Carbon Filter:	No
O3/Voltage Settings:	-	UV Light:	No
O3 Monitor:	-	Ionizer:	Yes
Model Notes:	The unit is a pendant that is worn around the neck or can be set on a surface. Unit has an ON/OFF switch which controls an Ionizer that is attached to the top of the pendent. Battery Powered		

FIRST SAMPLE

Control Number:	208439.00	Run-in Start:	6/4/10 16:45
Serial Number:	NA	Run-in End:	6/7/10 10:00
Manufacture Date:	March 2010	Run-in Temperature:	77 ± 4 degF
Receive Date:	6/3/10		
Received Status:	Ok		
Sample Notes:			

SECOND SAMPLE

Control Number:	208439.01	Run-in Start:	NA
Serial Number:	NA	Run-in End:	NA
Manufacture Date:	March 2010	Run-in Temperature:	NA
Receive Date:	6/3/10		
Received Status:	Ok		
Sample Notes:			

2. Peak Ozone Test Results

GRILL AND AIR PERIPHERY DIMENSIONS

		Date of Test:	6/30/2010
Grill Height:	-	Air Periphery Height:	-
Grill Width:	-	Air Periphery Width:	-
Estimated Grill Area:	-	Est. Air Periphery Area:	-
Notes:	Unit has one single Ionizer protruding from the unit. Peak testing measurement was taken 2 inches above said Ionizer		

PEAK LOCATIONS

Loc.	X	Y
-	[inches]	[inches]
1	0	0

* Location measurements are coordinates in reference to the center point.

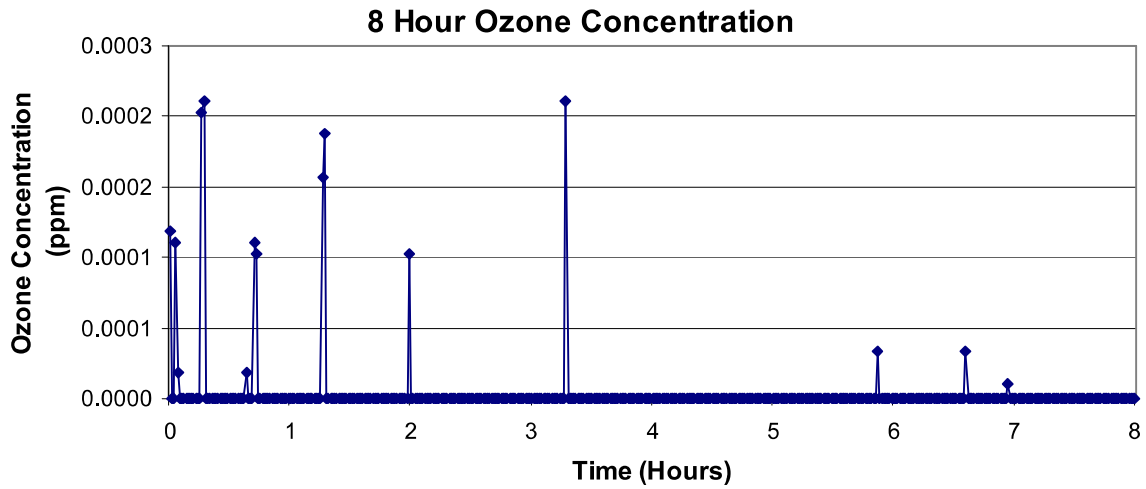
PEAK OZONE CONCENTRATIONS

Location								
	On							
1	**0.0010**							
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Notes:	- Ozone Concentrations less background level; in units of PPM. - Peak concentration for each iteration is in **BOLD**. - Only one peak location.

3. Max Ozone Test Results

Date of Test:	7/19/2010
Sample:	1 of 2
Setting:	ON
Filter(s):	No



MAXIMUM OZONE TEST RESULTS							
	UL Ref.	Pass/Fail	Mean	Min	Max	Delta	Units
Background C(t) O3:	37.4.3	PASS	0.001	0.000	0.001	0.001	[ppm]
Test 1min C(t) O3:	37.1.2	PASS	0.000	0.000	**0.000**	0.000	[ppm]
Test 5min C(t) O3:	37.1.2	PASS	0.000	0.000	0.000	0.000	[ppm]
Chamber Temperature:	37.4.2	PASS	77	77	77	1	[degF]
Chamber Humidity:	37.4.2	PASS	50	49	51	2	[%RH]
Chamber Static Pressure:	-	PASS	0.02	0.01	0.04	0.03	["H2O]
Chamber Supply Air Flow:	-	-	19	19	19	0	[SCFM]
Required to Test 2nd Sample:	37.1.1	NO					
Test Duration:	*37.4.6	8 hours					

Notes:	Unit does not have filters

4. Chamber Equipment Information

Test Equipment List

Instrument	Model	Intertek Ctrl #	Cal Due Date
Teledyne – Advanced Pollution Instrumentation Ozone Calibrator	703E	O200	1-5-2011
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O201	*
Teledyne – Advanced Pollution Instrumentation Ozone Monitor	400E	O202	*
Vaisala – Temperature & Humidity Transducer	HMD-70Y	T1307	04-09-11
Dwyer Airflow – Anemometer	471	Y202	07-22-10

* The 400E Ozone Monitor is calibrated using the 703E calibrator.

5. Summary/Signatures

The test sample(s) documented in this report were tested in accordance to the standard(s) and Certification Requirement Decision(s) (CRDs) referenced in the first page of this report.

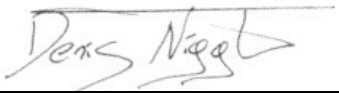
The representative sample(s) have been tested, investigated, and found to comply with the requirements of the UL Standard 867 Section 37.1.2 criteria of emitting a maximum ozone concentration of less than 0.050 ppm. Furthermore a second sample was not required to be tested as the first sample's maximum emissions were less than 0.030 ppm to satisfy the exception in the Section 37.1.1.

This testing was conducted as part of California's Air Resource Board Certification program and is referenced with ARB Application No. 1227.

This report completes our evaluation covered by Intertek Project No. G100128113CRT-001. If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned.

Please note; this Report does not represent authorization for the use of any Intertek certification marks.

OZONE EMISSIONS SUMMARY			
Setting	Filter(s)	O3/Voltage Setting	$C(t)_{max}$ [ppm]
ON	-	-	0.000

Completed by: Title:	Denis Niggli Associate Engineer	Reviewed by: Title:	Eric Dunay Engineer
Signature:		Signature	
Date	26 July 2010	Date:	26 July 2010

6. Appendix

DATA FILES

Test Name	Raw Data File
Model Half Life	571_HalfLife_ozonelog.csv
Max Ozone: ON	572_ON_ozonelog.csv

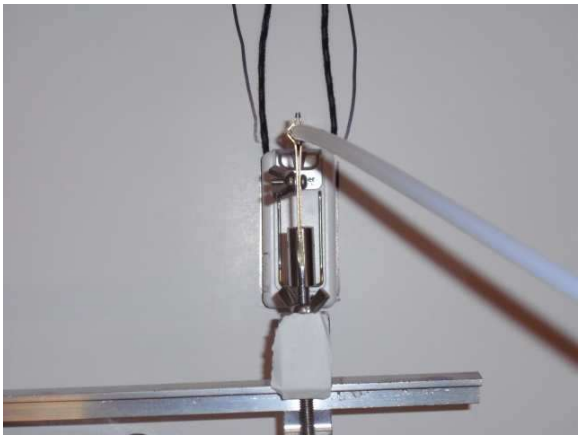
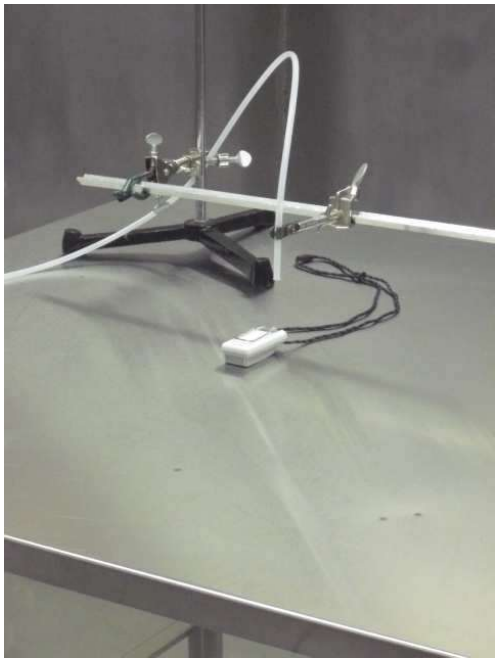
ATTACHMENT DOCUMENTS

Document	Soft-copy File Name
ARB Application	CARBApplication for Listing 2010 - FilterStream A320 - CARB#1227.pdf
Chain of Custody: Sample 1	COC_208439.00.pdf
Chain of Custody: Sample 2	COC_208439.01.pdf

UUT PHOTOGRAPHS

UUT

Nameplate

UUT PHOTOGRAPHS: PEAK TEST	UUT PHOTOGRAPHS: MAX OZONE TEST
	
ON	ON

Chain of Custody Form

Ozone Testing Facility

As of: 7/20/2010 9:17:52 AM

Control Number: 208439

Client: Headwaters, Inc.

Model Number: AirTamer A302

Project Number: G100128113

Serial Number:

Sample Selection: 1 / 2

Notes:

Name	Purpose	Location	Date	Notes
Shipping Dept	Received	Shipping	6/3/2010	
Shipping Dept	Move	Fan Lab	6/3/2010	
Denis Niggli	48 hr Run-in	Fan Lab	6/4/2010	Start 16:45
Denis Niggli	48 hr Run-in	Fan Lab	6/7/2010	Stop 10:00
Denis Niggli	Peak O3 Test	Fan Lab	6/30/2010	
Denis Niggli	Move	O3 Lab	7/19/2010	
Denis Niggli	Max O3 Test	O3 Lab	7/19/2010	ON
Denis Niggli	Move	O3 Lab	7/20/2010	

Chain of Custody Form

Ozone Testing Facility

As of: 7/20/2010 9:18:29 AM

Control Number: 208439.01

Client: Headwaters, Inc.

Model Number: AirTamer A302

Project Number: G100128113

Serial Number:

Sample Selection: 2 / 2

Notes:

Name	Purpose	Location	Date	Notes
Shipping Dept	Received	Shipping	6/3/2010	
Shipping Dept	Move	Fan Lab	6/3/2010	