santevia®

Pure **EARTH** Water

Santevia Gravity Water Systems (Countertop and Dispenser Models) Contaminant Reduction Results

Testing done by the following independent laboratory:

British Columbia Institute of Technology

Using NSF 42 and 53 Methodologies

Start Date: April 1, 2011

End Date: June 10, 2011

TESTING OVERVIEW

The British Columbia Institute of Technology (BCIT) is a technical university located in Vancouver, British Columbia. Santevia Water Systems (a division of Wellness Warehouse Inc.) contracted with BCIT to test the Santevia gravity water systems to determine if these products meet the criteria for certain contaminant reductions set out in NSF/ANSI Standards 42 and 53. Testing was performed according to NSF/ANSI protocols with parallel testing of two systems for each target contaminant, with all systems tested to 2,250 litres (594 gallons), which is 150% of the rated filter life of 1,500 litres (396 gallons). Input water was salted with the concentration of each target contaminant as required in the NSF/ANSI standards. Because the efficacy of these systems is based on long contact filtration, testing took place over a number of months, and more than 20 systems were utilized in the test program.

For each contaminant listed in this report, the Santevia gravity systems met or exceeded NSF/ANSI standards.

Legend

mg/L (ppm): Results and standards are expressed as an amount in milligrams per liter or parts per million.
ND: The contaminant was not detected above the minimum detection level.
NA: The contaminant was not analyzed.

Exceeds or meets NSF reduction requirements.

Does not meet NSF reduction requirements.

No NSF reduction requirement available.

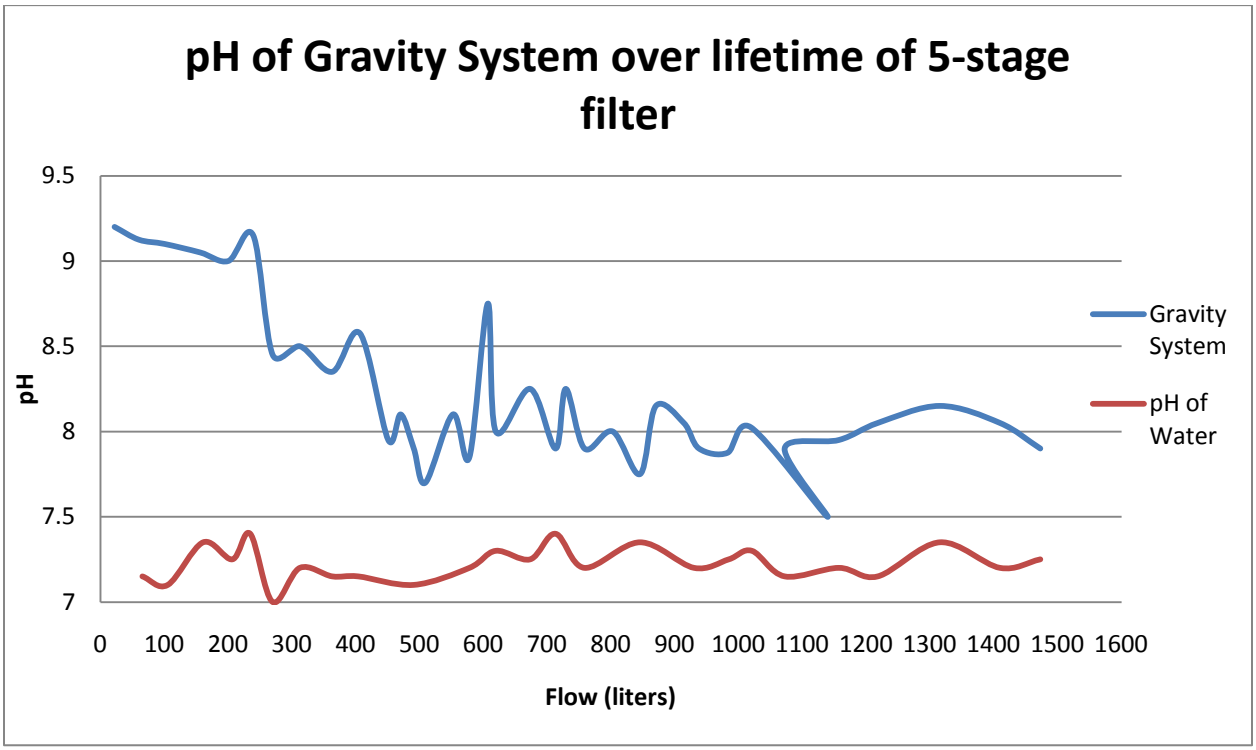
NSF 42 Testing							
Status	Contaminant	Average Reduction %	NSF Standard	Effluent Water Concentration	Influent Water Concentration	Units	Drinking Water Regulatory Level (mg/L)
	Chlorine	99.73%	50%	0.0054	1.88	mg/L (ppm)	
	Taste and Odour	99.51%	50%	0.00985	2.025	mg/L (ppm)	
NSF 53 Testing							
Status	Contaminant	Average Reduction %	NSF Standard	Effluent Water Concentration	Influent Water Concentration	Units	Drinking Water Regulatory Level (mg/L)
	Mercury	95.0	66.70 %	0.0003175	0.006	mg/L (ppm)	0.002
Volatile Organic Chemicals							
	alachor	> 98	95%	0.001	0.050	mg/L (ppm)	0.002
	benzene	>99	95%	0.001	0.081	mg/L (ppm)	0.005
	carbofuren	>99	95%	0.001	0.190	mg/L (ppm)	0.04
	carbon tetrachloride	98	95%	0.0018	0.078	mg/L (ppm)	0.005
	chlorobenzene	> 99	95%	0.001	0.077	mg/L (ppm)	0.1
	chloropicrin	99	95%	0.0002	0.015	mg/L (ppm)	None
	2,4-D	98	95%	0.0017	0.110	mg/L (ppm)	0.07
	dibromochloropropane (DBCP)	> 99	95%	0.00002	0.052	mg/L (ppm)	0.0002

	o-dichlorobenzene	> 99	95%	0.001	0.080	mg/L (ppm)	0.6
	p-dichlorobenzene	> 98	95%	0.001	0.040	mg/L (ppm)	0.075
	1,2-dichloroethane	95	95%	0.0048	0.088	mg/L (ppm)	0.005
	1,1-dichloroethylene	> 99	95%	0.001	0.083	mg/L (ppm)	0.007
	cis-1,2-dichloroethylene	> 99	95%	0.0005	0.170	mg/L (ppm)	0.07
	trans-1,2-dichloroethylene	> 99	95%	0.001	0.086	mg/L (ppm)	0.1
	1,2-dichloropropane	> 99	95%	0.001	0.080	mg/L (ppm)	0.005
	cis-1,3-dichloropropylene	> 99	95%	0.001	0.079	mg/L (ppm)	None
	dinoseb	99	95%	0.0002	0.170	mg/L (ppm)	0.007
	endrin	99	95%	0.00059	0.053	mg/L (ppm)	0.002
	ethylbenzene	> 99	95%	0.001	0.088	mg/L (ppm)	0.7
	ethylene dibromide (EDB)	> 99	95%	0.00002	0.044	mg/L (ppm)	0.00005
	haloacetonitriles (HAN) bromochloroacetonitrile dibromoacetonitrile dichloroacetonitrile trichloroacetonitrile	 98 98 98 98	95%	 0.0005 0.0006 0.0002 0.0003	 0.022 0.024 0.0096 0.015	mg/L (ppm)	None
	haloketones (HK): 1,1-dichloro-2-propanone 1,1,1-trichloro-2-propanone	 99 96	95%	 0.0001 0.0003	 0.0072 0.0082	mg/L (ppm)	None
	heptachlor (H-34, Heptox)	> 99	95%	0.00001	0.025	mg/L (ppm)	0.0004
	heptachlor epoxide	98	95%	0.0002	0.0107	mg/L (ppm)	0.0002
	hexachlorobutadiene	> 98	95%	0.001	0.044	mg/L (ppm)	None
	hexachlorocyclopentadiene	> 99	95%	0.000002	0.060	mg/L (ppm)	0.05
	lindane	> 99	95%	0.00001	0.055	mg/L (ppm)	0.0002
	methoxychlor	> 99	95%	0.0001	0.050	mg/L	0.04

						(ppm)	
	pentachlorophenol	> 99	95%	0.001	0.096	mg/L (ppm)	0.001
	simazine	> 97	95%	0.004	0.120	mg/L (ppm)	0.004
	styrene	> 99	95%	0.0005	0.150	mg/L (ppm)	0.1
	1,1,2,2-tetrachloroethane	> 99	95%	0.001	0.081	mg/L (ppm)	None
	tetrachloroethylene	> 99	95%	0.001	0.081	mg/L (ppm)	0.005
	toluene	> 99	95%	0.001	0.078	mg/L (ppm)	1
	2,4,5-TP (silvex)	99	95%	0.0016	0.270	mg/L (ppm)	0.05
	triboromoacetic acid	> 98	95%	0.001	0.042	mg/L (ppm)	None
	1,2,4-trichlorobenzene	> 99	95%	0.0005	0.160	mg/L (ppm)	0.07
	1,1,1-trichloroethane	95	95%	0.0046	0.084	mg/L (ppm)	0.2
	1,1,2-trichloroethane	> 99	95%	0.0005	0.150	mg/L (ppm)	0.005
	trichloroethylene	> 99	95%	0.0010	0.180	mg/L (ppm)	0.005
	trihalomethanes (includes): chloroform bromoform bromodichloromethane chlorodibromomethane	95	95%	0.015	0.300	mg/L (ppm)	0.080
	xylenes (total)	> 99	95%	0.001	0.070	mg/L (ppm)	10
Pesticides Atrazine, a pesticide, falls under the NSF VOC test protocol. Santevia has commissioned separate testing of this contaminant due to its toxicity and prevalence in the environment.							
Status	Contaminant	Average Reduction %	NSF Standard	Effluent Water Concentration	Influent Water Concentration	Units	Drinking Water Regulatory Level (mg/L)
	Atrazine (used as surrogate)	100%	95%	ND	0.100	mg/L (ppm)	0.003

Pharmaceuticals							
Status	Contaminant	Average Reduction %	NSF Standards	Effluent Water Concentration	Influent Water Concentration	Units	Drinking Water Regulatory Level (mg/L)
	Sulfamethoxazole (used as surrogate)	100%	None	ND	0.05	mg/L (ppm)	None

Physical Properties				
	Property	Results	Units	Drinking Water Regulatory Level (mg/L)
	Alkalinity (Total) CaCO3	12	mg/L (ppm)	None
	Hardness	20.2	mg/L (ppm)	100
	pH*	8.6	mg/L (ppm)	7.0-9.5



*Santevia gravity systems increase the pH of the input water by an average of 1.0 pH points over the life of the filter (1500 L or 375 US gallons).

Note: pH testing was performed in-house. Hardness and alkalinity testing was performed by the independent laboratory Maxxam Analytics in Burnaby, BC.