

## User-friendly Summary of Test Results for the H2 Series UltraWater Filter



All test results are certified and performed in NELAP accredited labs to proper EPA Standards.

**Abstract:** All tests performed were done in manner to replicate the flow rates and contact times of AlkaViva H2 Series ionizers with a flow rate of 3 liters per minute. No ionization, or form of electrolysis was used in testing to avoid the effect of ionic separation.

All control water samples, influent samples, were created using DI water then spiked with contaminant samples from ERA Labs (<http://www.eraqc.com>) and scanned separately for accurate starting values without passing through UltraWater filters. Start values were prepared to be as close as possible to EPA MCL levels where applicable. In the case of contaminants that are added during treatment such as fluoride or the chlorine based disinfectant group, start values were prepared to be at least the level that typically found in municipally treated water.

All filters were flushed prior to testing using 10 gallons of DI water, then cleared of excess water by air. Prior to collection approximately 2 liters of control water sample was passed through and the effluent samples were collected at this time.

Testing for the VOC, disinfectant and heavy metals sample groups was performed by Silver State Analytical Laboratories and completed on 12/10/12 and 2/19/16 respectively. Testing for a sample group of PPCP (pharmaceuticals / personal care products / herbicides and pesticides) was performed by MHW on 8/3/12. Glyphosate testing was performed by eurofins / Eaton Analytical on 4/14/16. Original lab reports available upon request.

### Test Result Definitions:

**Influent** = The levels found in the control sample prior to passing through the UltraWater Filtration System.

**Effluent** = The levels found in the collected sample after passing through the UltraWater Filtration System.

**mg/L** = Milligrams per liter, or Parts Per Million (PPM)

**ug/L** = Nanograms per Liter, or Parts Per Billion (PPB)

**ND** = Nondetectable levels were found in testing. ND is an indicator if the lowest level of accurate reporting based on the equipment's capabilities and the type of tests performed.



Drinking Water Contaminant	Influent Contaminant Level	Unit of Measure	UltraWater Results (Effluent)	Reporting Limits
<b><u>Disinfectants and TDS Sample Group</u></b>				
Total Residual Chlorine	1	mg/L	ND	0.25
Free Chlorine	0.33	mg/L	ND	0.25
TDS	105	mg/L	100	10
<b><u>Heavy Metal Sample Group</u></b>				
Aluminum	0.065	mg/L	ND	0.05
Antimony	0.038	mg/L	ND	0.001
Arsenic	0.043	mg/L	ND	0.001
Barium	1.6	mg/L	0.009	0.001
Beryllium	0.003	mg/L	ND	0.001
Boron	1.7	mg/L	ND	0.01
Cadmium	0.017	mg/L	ND	0.001
Chromium	0.059	mg/L	ND	0.001
Copper	0.22	mg/L	ND	0.001
Iron	1.2	mg/L	ND	0.01
Lead	0.061	mg/L	ND	0.001
Manganese	0.31	mg/L	0.003	0.01
Molybdenum	0.038	mg/L	ND	0.001
Mercury	0.0008	mg/L	ND	0.002
Nickle	0.054	mg/L	ND	0.001

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Drinking Water Contaminant	Influent Contaminant Level	Unit of Measure	UltraWater Results (Effluent)	Reporting Limits
Selenium	0.082	mg/L	ND	0.001
Silver	0.28	mg/L	ND	0.001
Thalium	0.009	mg/L	ND	0.001
Vanadium	0.31	mg/L	ND	0.001
Zinc	0.23	mg/L	ND	0.001
<b><u>VOC Sample Group</u></b>				
1,1,1,2-Tetrachloethane	201	ug/L	ND	5
1,1,1-Trichlorethane	156	ug/L	ND	5
1,1,2,2-Tetrachloroethane	616	ug/L	ND	5
1,1,2-Trichloroethane	60.2	ug/L	ND	5
1,1-Dichlorethane	397	ug/L	5.43	5
1,1-Dichloroethene	98.5	ug/L	ND	5
1,1-dichloropropene	246	ug/L	ND	5
1,2,3-Trichloropropane	528	ug/L	ND	5
1,2,4-Trichlorobenzene	101	ug/L	ND	5
1,2,4-Trimethylbenzene	192	ug/L	ND	5
1,2-Dichlorobenzene	228	ug/L	ND	5
1,2-Dichloroethane	108	ug/L	ND	5
1,2-Dichloropropane	186	ug/L	ND	5
1,3,5-Trimethylbenzene	387	ug/L	ND	5
1,3-Dichloropropane	275	ug/L	ND	5

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Drinking Water Contaminant	Influent Contaminant Level	Unit of Measure	UltraWater Results (Effluent)	Reporting Limits
1,4-Dichlorobenzene	203	ug/L	ND	5
2,2-Dichloropropane	179	ug/L	ND	5
2-Chlorotoluene	429	ug/L	ND	5
4-Chlorotoluene	94.5	ug/L	ND	5
Benzene	172	ug/L	ND	5
Bromobenzene	59.6	ug/L	ND	5
Carbon Tetrachloride	153	ug/L	ND	5
Chlorobenzene	231	ug/L	ND	5
cis-1,2-dichloroethane	366	ug/L	ND	5
cis-1,3-Dichloropropene	145	ug/L	ND	5
Dibromomethane	156	ug/L	ND	5
Dichlorodifluoromethane	160	ug/L	ND	5
Ethylbenzene	262	ug/L	ND	5
Hexachlorobutadine	80.3	ug/L	ND	5
Isopropylbenzene	328	ug/L	ND	5
m+p-Xylene	72.5	ug/L	ND	5
Methylene chloride	266	ug/L	ND	5
methyl-t-butyl ether (MTBE)	372	ug/L	5.36	5
Napthalene	124	ug/L	ND	5
n-Propylbenzene	247	ug/L	ND	5

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Drinking Water Contaminant	Influent Contaminant Level	Unit of Measure	UltraWater Results (Effluent)	Reporting Limits
o-Xylene	59.8	ug/L	ND	5
p-isopropyltoluene	124	ug/L	ND	5
Styrene	85.4	ug/L	ND	5
tert-Butylbenzene	318	ug/L	ND	5
Tetrachloroethane	168	ug/L	ND	5
Toluene	265	ug/L	ND	5
trans-1,2-Dichloroethane	186	ug/L	ND	5
trans-1,3-Dichloropropene	205	ug/L	ND	5
Trichloroethane	259	ug/L	ND	5
Vinyl Chloride	136	ug/L	ND	5
<b><i>Hormone Sample Group</i></b>				
<b>Contraceptive Hormone</b>	EE2 (17 Alpha-ethynylestradiol)	500	ND	5
<b>Estrogenic Hormone</b>	E2 (17 Beta-Estradiol)	380	ND	5
<b>Estrogenic Hormone</b>	Estrone	400	ND	5
<b>Steroid Hormone</b>	Androstenedione	370	ND	5
<b>Steroid Hormone</b>	Norethisterone	600	ND	5
<b>Steroid Hormone</b>	Progesterone	550	ND	5
<b>Steroid Hormone</b>	Testosterone	410	ND	10

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Compounds Action	Compound Name	Influent Compound Level (ng/L)	AlkaViva UltraWater Results	Reporting Limit (ng/L)
<b><u>Over the Counter Pharmaceutical Sample Group</u></b>				
Analgesic	Acetaminophen	640	ND	5
Analgesic	Phenazone	530	ND	5
Analgesic-NSAID	Ibuprofen	1800	ND	10
<b><u>Prescription Drug Sample Group</u></b>				
Analgesic	Lidocaine	280	ND	5
Analgesic-NSAID	Butalbital	310	ND	5
Anti anxiety	Meprobamate	520	ND	5
Anti Asthmatic	Albuterol	1800	ND	5
Anti Asthmatic	Theophylline	310	ND	10
Anti Convulsant	Primidone	230	ND	5
Anti Inflammatory	Diclofenac	390	ND	5
Anti Inflammatory	Ketoprofen	280	ND	5
Anti Inflammatory	Ketorolac	230	ND	5
Anti Inflammatory	Meclofenamic Acid	380	ND	5
Anti seizure	Carbamazepine	480	ND	5
Antibiotic	Amoxicillin	480	ND	20
Antibiotic	Azithromycin	31000	810	5
Antibiotic	Chloramphanicol	360	ND	5

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Compounds Action	Compound Name	Influent Compound Level (ng/L)	AlkaViva UltraWater Results	Reporting Limit (ng/L)
Antibiotic	Erythromycin	700	ND	10
Antibiotic	Flumequine	110	ND	10
Antibiotic	Lincomycin	270	ND	10
Antibiotic	Oxolinic acid	1200	ND	10
Antibiotic	Trimethoprim	84	ND	5
Anti-cholesterol	Clofibric acid	470	ND	5
Anticoagulant	Warfarin	860	ND	5
Antidepressant	Fluoxetine (Prozac)	470	ND	10
Anti-Seizure	Dilantin	2400	ND	20
Beta Blocker	Atenolol	1000	ND	5
Beta Blocker	Lopressor	3400	ND	20
Blood thinner	Pentoxifylline	490	ND	5
Calcium Blocker	Nifedipine	1600	87	20
Enzyme	Chloridazon	120	ND	5
H2 Blocker	Cimetidine	4400	ND	5
Heart Medication	Dehydronifedipine	230	ND	5
Lipid Regulator	Bezafibrate	1200	ND	5
Lipid Regulator	Gemfibrozil	450	ND	5
Muscle Relaxant	Carisoprodol	540	ND	5
Sulfa Antibiotic	Sulfachloropyridazine	3400	ND	5

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Sulfa Antibiotic	Sulfadimethoxine	550	ND	5
Sulfa Antibiotic	Sulfamerazine	170	ND	5
Sulfa Antibiotic	Sulfadiazine	630	ND	5
Sulfa Antibiotic	Sulfamethazine	200	ND	5
Sulfa Antibiotic	Sulfamethizole	270	ND	5
Sulfa Antibiotic	Sulfathiazole	200	ND	5
Sulfa Antibiotic	Sulfamethoxazole	290	ND	5
Triazide	Bendroflumethiazide	880	ND	5
Valium- Antianxiety	Diazepam	620	ND	5
<b><u>Stimulant Sample Group</u></b>				
Caffeine Degradate	1,7-dimethylxanthine	700	ND	5
Caffeine Degradate	Theobromine	560	ND	5
Nicotine Degradate	Cotinine	1900	ND	10
Stimulant	Caffeine	780	ND	5
Analgesic-NSAID	Naproxen	240	ND	10
<b><u>Personal Care Product Sample Group</u></b>				
Antibacterial	Triclosan	1000	ND	10
Mosquito Repellant	DEET	340	ND	2
<b><u>Preservatives</u></b>				
Preservative	Butylparaben	730	ND	5
Preservative	Ethylparaben	2100	ND	20

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Compounds Action	Compound Name	Influent Compound Level (ng/L)	AlkaViva UltraWater Results	Reporting Limit (ng/L)
Preservative	Isobutylparaben	780	ND	5
Preservative	Methylparaben	1400	ND	20
Preservative	Propylparaben	270	ND	5
<b><u>Pesticide/Herbicide Sample Group</u></b>				
Herbicide	2,4-D	250	ND	5
Herbicide	Bromacil	480	ND	5
Herbicide	Chlorotoluron	440	ND	5
Herbicide	Diuron	940	ND	5
Herbicide	Glyphosate (Roundup)	860	ND	5
Herbicide	Isoproturon	2000	ND	100
Herbicide	Linuron	420	ND	5
Herbicide	Metazachlor	520	ND	5
Pesticide	Quinoline	250	ND	5
Triazine Herbicide	Atrazine	390	ND	5
Triazine Herbicide	Cyanazine	16	ND	5
Triazine Degradate	DACT (Diaminochlorotriazine)	260	ND	5
Triazine Degradate	DEA (Deethylatrazine)	120	ND	5
Triazine Degradate	DIA (Deisopropylatrazine)	250	ND	5

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Triazine Herbicide	Propazine	340	ND	5
Triazine Herbicide	Simazine	120	ND	5
<b><u>Wastewater Indicator Sample Group</u></b>				
Flame Retardant	TCEP	29	ND	5
Flame Retardant	TCPP	440	ND	5
Flame Retardant	TDCPP	1000	ND	5
Plasticizer	BPA (Bis Phenol A)	270	ND	10
Sugar Substitute	Acesulfame-K	1300	ND	20
Sugar Substitute	Sucralose	15000	ND	100
Surfactant	4-nonylphenol	710	ND	100
Surfactant	4-tert-octylphenol	400	ND	50
X-ray Contrast agent	Iohexol (Iohexal)	240	ND	10
X-ray Contrast agent	Iopromide	290	ND	5

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