Clearbrook Filtration Element Test Results

Chemical Disinfectants

Contaminant	Challenge Water (mg/L)	Filtered Water (mg/L)	% Removal
Ammonia	2	<0.0001	>99.99%
Calcium Hypochlorite	2.1	<0.01	>99.52%
Chloramine	3.1	<0.01	>99.68%
Chloride	850	<1	>99.88%
Chlorine	2.1	<0.01	>99.52%
Formaldehyde	0.05	<0.0005	>99.00%
Iodine	2	<0.01	>99.50%
Nitrate	27	<0.01	>99.96%
Nitrate and nitrite	15	<0.01	>99.93%
Nitrite	3	<0.01	>99.67%
Perchlorate	0.1	<0.004	>96.00%
Sulfate	852	1	99.88%
Sulfide	1	<0.01	>99.00%

Haloacetic Acids (HAA)

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Bromochloroacetic acid	50.76	<0.01	>99.98%
Bromodichloroacetic acid	47.33	0.33	99.30%
Dibromoacetic Acid	52.68	<0.01	>99.98%
Dichloroacetic Acid	54.99	<0.01	>99.98%
Haloacetic acids (HAA5)	54.02	<0.01	>99.98%
Monobromoacetic Acid	54.19	<0.01	>99.98%
Monochloroacetic Acid	55.12	<0.01	>99.98%
Trichloroacetic Acid	53.11	0.01	99.98%

Heavy Metals

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Aluminum	115	<1	>99.13%
Antimony	50	<1	>98.00%
Arsenic	50	<1	98.00%
Barium	10,200	1	99.99%
Beryllium	52	<1	>98.08%
Cadmium	33	1	96.97%
Chromium (hexavalent)	312	1	99.68%
Cobalt	59	<1	>98.31%
Copper	3,284	1	99.97%
Germanium	71	<0.1	>99.86%
Iron	3,017	1	99.97%
Lead	152	1	99.34%
Lithium	144	<1	>99.31%
Manganese	1,042	<1	>99.90%
Mercury (inorganic)	5.9	<0.1	>98.31%
Molybdenum	62	<1	>98.39%
Nickel	105	1	99.05%
Selenium	111	1	99.10%
Silver	102	<1	>99.02%
Strontium	81	<1	>98.77%
Thallium	51	<1	>98.04%
Uranium	30	1	96.67%
Vanadium	40	1	97.50%
Zinc	10,364	1	99.99%

Herbicides

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
2,3,7,8-TCDD (Dioxin)	52.43	<1	>98.09%
2,4-D	51.53	<0.01	>99.98%
2,4-DB	53.01	<0.01	>99.98%
2,4,5-T	51.67	<0.01	>99.98%
2,4,5-TP (Silvex)	53.87	<0.01	>99.98%
3,5-Dichlorobenzoic Acid	53.18	<0.01	>99.98%
Acetochlor	56.09	<1	>98.22%
Acifluorfen (Blazer)	53.59	<0.01	>99.98%
Bentazon (Basagran)	54.55	<0.01	>99.98%
Chloramben	52.3	<0.01	>99.98%
Dacthal	98.2	<1	>98.98%
Dalapon	46.05	<0.01	>99.98%
DCPA di-acid degradate	50.2	<0.01	>99.98%
Desethylatrazine	62.54	<1	>98.40%
Desisopropylatrazine	89.15	<1	>98.88%
Dicamba	53.32	<0.01	>99.98%
Dichlorprop	44.18	0.01	99.98%
Dinoseb	52.95	<0.01	>99.98%
Diquat	83.6	<1	>98.80%
Endothall	76.61	<1	>98.69%
Glyphosate	800.5	<0.01	>99.99%
Hexachloropentadiene	50.12	<0.01	>99.98%
Paraquat	95.54	<1	>98.95%
Picloram	53.51	<0.01	>99.98%
Quinclorac	53.27	<0.01	>99.98%
Tetrachloroterephthalic Acid	91.58	<1	>98.91%
Thiobencarb	83.28	<1	>98.80%

Microplastics

Contaminant	Challenge Water (CFU/L)	Filtered Water (CFU/L)	% Removal
Microplastic	50,000,000	<1	>99.99%

Perfluorinated Chemicals (PFAS)

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
EPFB	0.1	<0.005	>95.00%
NFBS	0.1	<0.005	>95.00%
Perfluoro-2-methyl-3-oxahexanoic acid (GenX)	0.9	<0.005	>99.44%
Perfluorobutane sulfonate (PFBS)	0.1	<0.005	>95.00%
Perfluorobutanoic acid (PFBA)	0.1	<0.005	>95.00%
Perfluoroheptanoic acid (PFHpA)	0.1	<0.005	>95.0%
Perfluorononanoic acid (PFNA)	0.1	<0.005	>95.00%
Perfluorooctane sulfonate (PFOS)	1	<0.005	>99.50%
Perfluorooctanoic acid (PFOA)	0.5	<0.005	>99.00%

Pesticides

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
2-Furancarboxaldehyde	91.58	<1	>98.91%
3-Hydroxycarbofuran	45.95	0.44	99.04%
Acenaphthene	68.42	0.23	99.66%
Alachlor (Lasso)	44.9	<0.1	>99.78%
Alachlor ESA	44.9	<0.1	>99.78%
Aldicarb Sulfone	79.43	<1	>98.74%
Aldicarb Sulfoxide	82.1	<1	>98.78%
Aldrin	46.1	<0.1	>99.78%
Alpha - BHC	77.9	<0.1	>99.87%
Alpha-Chlordane	78.89	<1	>98.73%
Alpha-Lindane	70.03	<1	>98.57%
Atrazine	53.2	<0.1	>99.81%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
beta-BHC	52.3	<0.1	>99.81%
bis(2-Chloroethyl) ether	57.44	<1	>98.26%
Bromacil	44.4	<0.1	>99.77%
Butachlor	49.4	<0.1	>99.80%
Butylate	53.5	<0.1	>99.81%
Carbaryl	58.89	<1	>98.30%
Carbofuran	75.06	<1	>98.67%
Chlordane	78.89	<1	>98.73%
Chlormeb	50.5	<0.1	>99.80%
Chloroacetonitrile	48.9	0.12	99.75%
Chlorothalonil (Bravo)	51.2	<0.1	>99.80%
Chlorpropham	52.1	<0.1	>99.81%
Chlorprophame	52.5	<0.1	>99.80%
Chlorpyriphos	53.5	<0.1	>99.81%
Cis - Chlordane	52.7	<0.1	>99.81%
Cyanazine (Bladex)	54.1	<0.1	>99.82%
delta-BHC	59.2	<0.1	>99.83%
Diazinon (Spectracide)	85.32	<1	>98.83%
Dichlorvos	61.3	<0.1	>99.84%
Dieldrin	48.7	<0.1	>99.79%
Dimethoate	88.35	<1	>98.87%
Diphenamid	51.2	<0.1	>99.80%
Disulfoton	53.6	<0.1	>99.81%
Endosulfan I	50	<0.1	>99.80%
Endosulfan II	62.4	<0.1	>99.84%
Endosulfan Sulfate	46.9	<0.1	>99.79%
Endrin	50.6	<0.1	>99.80%
Endrin aldehyde	50.6	<0.1	>99.80%
Endrin Ketone	50.6	<0.1	>99.80%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Ethoprop	51.2	<0.1	>99.80%
Fenamiphos	59.2	<0.1	>99.83%
Fenarimol	37.6	<0.1	>99.73%
Fluridone	52.3	<0.1	>99.81%
Heptachlor	50.4	<0.1	>99.80%
Heptachlor Epoxide	57.1	<0.1	>99.82%
Hexachlorobenzene (HCB)	37.6	<0.1	>99.73%
Hexachlorocyclopentadiene	52.1	<0.1	>99.81%
Hexadecanoic Acid	70.06	<1	>98.57%
Iodomethane	98.81	<1	>98.99%
Lindane	47.2	<0.1	>99.79%
Methomyl	55.37	<1	>98.19%
Methoxychlor	49.5	<0.1	>99.80%
Metolachlor	57	<0.1	>99.82%
Metolachlor Oxanilic Acid	88.96	<1	>98.88%
Metribuzin	58.2	<0.1	>99.83%
Molinate	61.3	<0.1	>99.84%
N-Nitroso-di-N-butylamine	93.65	<1	>98.93%
N-Nitrosodimethylamine (NDMA)	91.47	<1	>98.91%
Nano-Chlordane	48.5	<0.1	>99.80%
Octadecanoic Acid	77.65	<1	>98.71%
Oxamyl (Vydate)	78.16	<1	>98.72%
p,p' - DDD	43.7	<0.1	>99.77%
p,p' - DDE	50.5	<0.1	>99.80%
p,p' - DDT	43.7	<0.1	>99.77%
Pentachlorophenol	50.31	<0.01	>99.98%
Polychlorinated biphenyls (PCBs)	10.9	<0.1	>99.08%
Propachlor	51.2	<0.1	>99.80%
Propazine	40.9	<0.1	>99.76%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Simazine	52.3	<0.1	>99.81%
Tetradecanoic Acid	78.45	<1	>98.73%
Toxaphene	40.9	<0.1	>99.76%
trans-Nonachlor	27.1	<0.1	>99.63%
Vernolate	50.7	<0.1	>99.80%

Pharmaceutical Drugs

Contaminant	Challenge Water (ng/L)	Filtered Water (ng/L)	% Removal
17-beta-Estradiol	210	<0.1	>99.95%
4-Androstene-3,17-dione	69.53	<1	>98.56%
4-para-Nonylphenol	20	<0.1	>99.99%
4-tert-Octylphenol	258	<0.1	>99.96%
Acetaminophen	200	<0.1	>99.95%
Atenolol	227	<0.1	>99.96%
Bisphenol A	2,641	<0.1	>99.99%
Caffeine	200	<0.1	>99.95%
Carbamazepine	1,237	<0.1	>99.99%
Ciprofloxacin	200	<0.1	>99.95%
DEET	47.56	<0.1	>99.79%
Diclofenac Sodium	245	<0.1	>99.96%
Erythromycin	20.1	<0.1	>99.50%
Estradiol	200	<0.1	>99.95%
Estriol	67.88	<1	>98.53%
Estrone	133	<0.1	>99.92%
Ethinyl estradiol	62.61	<1	>98.40%
Fluoxetine	212	<0.1	>99.95%
Gemfibrozil	250	<0.1	>99.96%
Ibuprofen	419	<0.1	>99.98%
Linuron	134	<0.1	>99.93%

Contaminant	Challenge Water (ng/L)	Filtered Water (ng/L)	% Removal
Meprobamate	402	<0.1	>99.98%
Naproxen	141	<0.1	>99.93%
Nonylphenol	1,359	<0.1	>99.99%
Phenytoin	208	<0.1	>99.95%
Primidone	253	<0.1	>99.96%
Progesterone	252	<0.1	>99.96%
Sulfamethoxazole	200	<0.1	>99.95%
TCCP	5,224	<0.1	>99.99%
TCEP	200	<0.1	>99.95%
TCPP	5,169	<0.1	>99.99%
Testosterone	200	<0.1	>99.95%
Triclosan	245	<0.1	>99.96%
Trimethoprim	151	<0.1	>99.93%

Phthalates

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Butyl benzyl phthalate	49.71	<0.1	>99.80%
Di-n-butyl phthalate	46.23	<0.1	>99.78%
Di-n-octyl phthalate	49.95	<0.1	>99.90%
Di(2-ethylhexyl) phthalate	49.95	<0.1	>99.80%
Diethyl phthalate	47.91	<0.1	>99.79%
Diisobutyl phthalate	53.43	<1	>98.13%
Dimethyl phthalate	56.66	<0.1	>99.82%
Phthalates	40.4	<0.1	>99.80%

Radiological Elements

Contaminant	Challenge Water (mCi/L)	Filtered Water (mCi/L)	% Removal
Gross Alpha (Thorium 230)	50	<1	>98.00%

Contaminant	Challenge Water (mCi/L)	Filtered Water (mCi/L)	% Removal
Gross Beta (Cesium 137)	51	<1	>98.04%

Semi-Volatile Compounds (SVOCs)

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
2-Chloronaphthalene	53.67	<0.01	>99.98%
2-Chlorophenol	53.61	<0.01	>99.98%
2-Nitrophenol	51.49	<0.01	>99.98%
2,2-Dimethylphenol	71.27	<0.01	>99.99%
2,2'-Oxybis(1-chloropropane)	50.29	<0.01	>99.98%
2,4-Dichlorophenol	54.74	<0.01	>99.98%
2,4-Dinitrophenol	52.88	<0.01	>99.98%
2,4-Dinitrotoluene	46.63	<0.1	>99.79%
2,4,6-Trichlorophenol	54.91	<0.01	>99.98%
2,6-Dinitrotoluene	48.69	<0.1	99.79%
4-Bromophenyl phenyl ether	61.38	<0.01	>99.98%
4-Chloro-3-methylphenol	52.19	<0.01	>99.98%
4-Chloro-phenyl-phenyl ether	71.82	<0.01	>99.99%
4-Nitrotoluene	57.17	<0.01	>99.98%
Acenaphthylene	46.69	<0.1	>99.79%
Anthracene	48.65	<0.1	>99.79%
Atraton	48.26	<0.1	>99.79%
Benzo(a)anthracene	45.36	<0.1	>99.78%
Benzo(a)pyrene	49.27	<0.1	>99.80%
Benzo(b)fluoranthene	48.71	<0.1	>99.79%
Benzo(g,h,i)perylene	49.49	<0.1	>99.80%
Benzo(k)fluoranthene	49.27	<0.1	>99.80%
BHT	43.52	<0.1	>99.77%
Bis (2-ethylhexyl) adipate	48.19	<0.1	>99.79%
bis(2-Chloroethoxy) Methane	62.28	<0.01	>99.98%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Chrysene	46.46	<0.1	>99.78%
Cycloate	48.78	<0.1	>99.79%
Di(2-ethylhexyl) adipate	77.64	<1	>98.71%
Dibenz[a,h]anthracene	49.02	<0.1	>99.80%
Dinitro-o-cresol	55.37	<0.01	>99.98%
Diphenylamine	70.39	<0.01	>99.99%
EPTC (Eptam)	51.26	<0.1	>99.80%
Etridiazole	49.34	<0.1	>99.80%
Fluoranthene	54.64	<0.1	>99.82%
Fluorene	47.9	<0.1	>99.79%
Hexachloroethane	63.83	<0.01	>99.98%
Hexazinone	49.47	<0.1	>99.80%
Indeno[1,2,3-cd]pyrene	49.49	<0.1	>99.80%
Isophorone	46.07	<0.1	>99.78%
MGK 264 - isomer a	42.1	<0.1	>99.76%
N-Nitrosodi-n-propylamine	54.04	<0.01	>99.98%
Napropamide	50.18	<0.1	>99.80%
Nitrobenzene	63.64	<0.01	>99.98%
Nitrofen	54.19	<0.1	>99.82%
Norflurazon	51.15	<0.1	>99.80%
Oxyfluorfen	48.49	<0.1	>99.79%
p-Cresol	67.16	<1	>98.51%
Pebulate	47.14	<0.1	>99.79%
Phenanthrene	49.87	<0.1	>99.80%
Phenols	59.66	<0.1	>99.83%
Prometon	48.33	<0.1	>99.79%
Prometryn	48.62	<0.1	>99.79%
Propyzamide	56.02	<0.1	>99.82%
Pyrene	52.07	<0.1	>99.81%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Simetryn	52.91	<0.1	>99.81%
Tebuconazole	50.17	<0.1	>99.80%
Tebuthiuron	74.28	<0.1	>99.87%
Terbacil	46.6	<0.1	>99.79%
Terbutryn	48.18	<0.1	>99.79%
Triadimefon	46.87	<0.1	>99.79%
Trifluralin	45.47	<0.1	>99.78%
Vinclozolin	48.01	<0.1	>99.79%

Volatile Organic Compounds (VOCs)

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
1,1-Dichloroethane	44.2	<0.1	>99.77%
1,1-Dichloroethene	22.6	<0.1	>99.56%
1,1-Dichloroethylene	60.44	<0.01	>99.98%
1,1-Dichloropropene	22.4	<0.1	>99.55%
1,1,1-Trichloroethane	30.6	<0.1	>99.67%
1,1,1,2-Tetrachloroethane	55.55	<0.01	>99.98%
1,1,2-Trichloroethane	68.4	<0.1	>99.85%
1,1,2,2-Tetrachloroethane	56.6	<0.1	>99.82%
1,2-Dibromo-3-chloropropane (DBCP)	52.39	<0.01	<99.98%
1,2-Dibromoethane	54.43	<0.01	>99.98%
1,2-Dichloroethane	48.2	<0.1	>99.79%
1,2-Dichloropropane	54.4	<0.1	>99.82%
1,2,3-Trichlorobenzene	48.1	<0.1	>99.79%
1,2,3-Trichloropropane	59.47	<0.01	>99.98%
1,2,3-Trimethylbenzene (Hemellitol)	78.17	<1	>98.72%
1,2,4-Trichlorobenzene	53.2	<0.1	>99.81%
1,2,4-Trimethylbenzene	53	<0.1	>99.81%
1,3-Butadiene	60.24	<0.01	>99.98%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
1,3-Dichloropropane	56.8	<0.1	>99.82%
1,3,5-Trimethylbenzene	51	<0.1	>99.80%
1,4-Dioxane	101	<0.1	>99.90%
2-Hexanone	60.66	<0.01	>99.98%
2-Methylbutane	50.56	<0.01	>99.98%
2-Nitropropane	54.56	<0.01	>99.98%
2,2-Dichloropropane	27	<0.1	>99.63%
Acetone	62.36	<0.01	>99.98%
Acetonitrile	61.66	<0.01	>99.98%
Acrylonitrile	58.02	<0.01	>99.98%
Benzaldehyde	60.24	<0.01	>99.98%
Benzene	43.3	<0.1	>99.77%
Bromobenzene	58.8	<0.1	>99.83%
Bromochloromethane	56	<0.1	>99.82%
Bromodichloromethane	62.9	<0.1	>99.84%
Bromomethane	64.66	<0.01	>99.98%
Carbon Disulfide	73.31	<0.01	>99.99%
Carbon Tetrachloride	25.6	<0.1	>99.61%
Chloroethane	47.3	<0.01	>99.79%
Chloroform	50.7	<0.1	>99.80%
Chloromethane	96.46	<0.01	>99.99%
Chlorotrifluoromethane	63.65	<0.01	>99.98%
cis-1,2-Dichloroethene	54	<0.1	>99.81%
cis-1,2-Dichloroethylene	75.11	<0.01	>99.99%
cis-1,3-Dichloropropene	45.3	<0.1	>99.78%
Cyclohexane	86.05	<1	>98.84%
Dibromochloromethane	70	<0.1	>99.86%
Dibromomethane	57.74	<0.01	>99.98%
Dichlorodifluoromethane	52.76	<0.01	>99.98%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Dichloromethane (methylene chloride)	77.4	<0.1	>99.87%
Ethylbenzene	45.7	<0.1	>99.78%
Ethylene Dibromide	51.05	<0.01	>99.98%
Fluorotrichloromethane	50.1	<0.1	>99.80%
Hexachlorobutadiene	37.6	<0.1	>99.73%
Hexane(s)	56.8	0.01	99.98%
Isopropyl Alcohol	54.84	<0.01	>99.98%
Isopropylbenzene	46.4	<0.1	>99.78%
m-Dichlorobenzene	57.8	<0.1	>99.83%
m-Xylene	49.1	<0.1	>99.80%
Methyl ethyl ketone	64.66	<0.01	>99.98%
Methyl isobutyl ketone	64.66	<0.01	>99.98%
Methylcyclohexane	66.01	<1	>98.48%
Methylcyclopentane	52.02	0.11	99.79%
Monochlorobenzene (chlorobenzene)	55.5	<0.1	>99.82%
MTBE	51.1	<0.1	>99.80%
n-Butylbenzene	43.1	<0.1	>99.77%
n-Propylbenzene	44	<0.1	>99.77%
Naphthalene	48.1	<0.1	>99.79%
o-Chlorotoluene	44	<0.1	>99.77%
o-Dichlorobenzene	59.1	<0.1	>99.83%
o-Xylene	54.4	<0.1	>99.82%
p-Chlorotoluene	52.4	<0.1	>99.81%
p-Dichlorobenzene	59.5	<0.1	>99.83%
p-Isopropyltoluene	61.99	<0.01	>99.98%
p-Xylene	49.1	<0.1	>99.80%
Pentane	72.58	<1	>98.62%
Sec-Butylbenzene	53	<0.1	>99.81%
Styrene	59.5	<0.1	<99.83%

Contaminant	Challenge Water (µg/L)	Filtered Water (µg/L)	% Removal
Tert-Butyl Alcohol	66.21	<0.01	>99.98%
Tert-Butylbenzene	46.2	<0.1	>99.78%
Tetrachloroethylene	34.2	<0.1	>99.71%
Tetrahydrofuran	49.9	<0.01	>99.98%
Toluene	46.1	<0.1	>99.78%
Total trihalomethanes (TTHMs)	50.7	<0.1	>99.80%
trans-1,2-Dichloroethene	29.7	<0.1	>99.66%
Trans-1,2-Dichloroethylene	50.56	<0.01	>99.98%
trans-1,3-Dichloropropene	41.1	<0.1	>99.76%
Trichloroethylene	44.4	<0.1	>99.77%
Trichlorofluoromethane	67.07	<0.01	>99.99%
Vinyl chloride	50.4	<0.1	>99.80%
Xylenes (total)	49.1	<0.1	>99.80%