



Summary of Accepted Bag and Cartridge Alternative Filtration Technologies

Colorado Department of Public Health and Environment - Water Quality Control Division - Engineering Section

<http://www.cdphs.state.co.us/wq/engineering/techhom.html>

Revised May 2011

Colorado Department
of Public Health
and Environment

Manufacturer	Model	Compliance Credit Awarded		Log Inactivation Required through Disinfection			Flow Rate / Flux	Max Differential Pressure (DP) or Trans Membrane Pressure (TMP) (psid)	Max Influent Turbidity	Demonstrated Log Removal		Local Contact
		Giardia	Crypto	Giardia	Crypto	Viruses				Giardia	Crypto	
Bag and Cartridge												
Graver Technologies	QCR, QMA Cartridge Filter	2.5	2.0*	0.5	N/A*	4.0	10 gallons per minute (GPM) for 10 inch (in.) cartridges	35	Prefiltration is required	3.5	3.5	Dirk Lamprecht Industrial Process Technologies 303-975-9487 / 303-887-7676 dirk@industrialprocesstech.net
	ZTEC-B Cartridge Filter	2.5	2.0*	0.5	N/A*	4.0	15 GPM for 20 in 18 GPM for 30 in 22 GPM for 40 in			4.0	4.0	
Rosedale	GFS-302P2-150S-ESBB	2.0	2.0*	1.0	N/A*	4.0	10 GPM	15	1 NTU	2.0	2.0	Dan Morosky Rosedale Products 734-623-1129 / 734-665-8201 danm@rosedaleproducts.com
Harmsco	PPFS-HC-40-1, PPFS-HC-90-1, PPFS-HC-170-1	2.5	2.0*	0.5	N/A*	4.0	15 GPM (HC 40) 30 GPM (HC 90) 50 GPM (HC 170)	25	1 NTU	3.5	3.5	Darryl McCormick Harrington Plastics 303-371-4480 dmccormick@HIPCO.com
Strainrite	Strainrite Two Stage Filtration System: Aqua-Maxx PF-A Prefilter Aqua-Maxx FF-A Final Filter AQ2-2 vessel (manufactured after 1/1/2007) with AQB-Perf support basket	2.5	2.0*	0.5	N/A*	4.0	50 GPM	18- across both stages	Comprehensive Particle Size Analysis Test Recommended	3.5	3.5	Dennis Smith ProWest Filtration, Inc. 303-803-8301 dsmith@prowestfiltration.com
	Strainrite Two Stage Filtration System: HPM99-CC-2-SR Prefilter HPM99-CCX-2-SR Final Filter AQ2-2B vessel with AQC-1 compression device	2.5	2.0*	0.5	N/A*	4.0	20 GPM	25 - per individual stage	5 NTU Pretreatment can be utilized to meet this goal	3.0	3.0	

Disclaimer: This document is a summary of accepted alternative filtration technologies in the State of Colorado. It is not intended to be used as a standalone document for the planning, designing, or operation a water treatment plant. The summary does not contain all the Conditions of Acceptance, exceptions or qualifications for the individual filtration technologies. Please refer to the individual Acceptance Letters for each technology for the Conditions of Acceptance and additional information.

* - The Division reserves the right to re-evaluate the Pathogen Log Removal Credits for any alternative filtration technology as required by the LT2ESWTR.

Addition of filtration treatment or replacement of existing filtration treatment is considered to be a change in treatment. Article 1.11.2(b) of the *Colorado Primary Drinking Water Regulations* (CPDWR) requires that no person shall commence construction of any new waterworks, or make improvements to or modify the treatment process of an existing waterworks, or initiate the use of a new source, until plans and specifications for such construction, improvements, modifications or use have been submitted to, and approved by the Department. A Professional Engineer registered in the State of Colorado shall design all treatment systems serving a community water supply. For additional information regarding the plans approval process, please contact your regional Colorado Department of Public Health and Environment Office.



Colorado Department of Public Health and Environment

Summary of Accepted Alternative Membrane Filtration Technologies

Colorado Department of Public Health and Environment - Water Quality Control Division - Engineering Section
<http://www.cdphe.state.co.us/wq/engineering/techhom.html>
 Revised September 2011

Manufacturer	Model	Compliance Credit Awarded		Log Inactivation Required through Disinfection			95% Effluent Turbidity	Direct Integrity Testing Frequency	Max Flux @ 20°C	Max Flux @ 1°C	Max Trans Membrane Pressure (TMP) (psid)	Max Influent Turbidity or Prescreening	Local Contact
		Giardia	Crypto	Giardia	Crypto	Viruses							
Microfiltration/Ultrafiltration													
Filter Tech System Inc. / Norit X-Flow	Norit X-Flow SXL-225 Membrane	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	70 Gallons Per Square Foot of Membrane Per Day (GFD) at 20 deg. C	70 Gallons Per Square Foot of Membrane Per Day (GFD) at 20 deg. C	31	Pretreatment required if raw water exceeds 100 NTU	Deb Jensen Filter Tech Systems, Inc. 888-287-8292 / 970-254-2855 Deb@filtertechsystems.com
GE-Zenon	Homespring UF211	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	4.5 GPM continuous at 20 deg. C	4.5 GPM continuous at 1 deg. C	40	Prefiltration is required	Jack Barker Innovative Water Technologies 719-254-4426/ 877-567-9310 sales@innovativeH2o.com
	Zeeweed 500	IN REVIEW											
	Zeeweed 1000	IN REVIEW											
	Zeeweed 1500	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	100	57	45	500 micron pre-screen – additional pretreatment may be required	Adam Colling GE Water 760-685-7959 Adam.Colling@ge.com
Pall	Microza	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	120	69	43.5	Not spec'd. Prescreen typical.	Mark Sampson Water Control Corp 303-477-1970 m.sampson@watercontrolcorp.com
Siemens	L10V	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	80	46	22	250 - 500 micron pre-screening is required.	Russ Swerdfeger or Nick Lucas Siemens Water Technologies 719-622-5342 Russell.Swerdfeger@siemens.com Nicholas.Lucas@siemens.com
	L20V	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week	80	46	22		
WesTech	Polymem UF120S2	IN REVIEW											
Reverse Osmosis/ Nanofiltration													
Various	Various	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week - surrogate WQ parameter (sulfate, TOC, etc.)	Based on specific manufacturer information	Based on specific manufacturer information	Based on vendors specs	Pretreatment is required	Various
Hydranautics	Various	3.0	3.0*	0.0	N/A*	4.0	0.1 NTU - CFE	1X Week - surrogate WQ parameter (sulfate, TOC, etc.)	Site Specific	Site Specific	Site Specific	Pretreatment is required	Hydranautics - A Nitto Denko Company 760-901-2563

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Colorado Department
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Summary of Accepted Membrane Filtration Skids

Colorado Department of Public Health and Environment - Water Quality Control Division - Engineering Section

<http://www.cdphe.state.co.us/wq/engineering/techhom.html>

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Manufacturer	Model	Compliance Element/Module	Accepted Flow Rate	Flow Rate Units (gpm, MGD, gallons per day)	Backflow prevention for CIP	Local Contact
Microfiltration/Ultrafiltration						
Filter Tech System Inc. / Norit X-Flow	UltraFlex Hollow Fiber UltraFiltration System UFX-1, UFX-2, UFX-3, UFX-4, UFX-5, UFX-6, UFX-7	Norit X-Flow SXL-225 Membrane	None - must verify on each submittal	N/A	Double block and bleed	Filter 888-287- Tech Systems, Inc. 8292 / 970-254-2855 Deb@filtertechsystems.com
Innovative Water Technologies (IWT) GE-Zenon	UF 5	Homespring UF211	5,000	gallons per day	Air gap	Jack Barker Innovative Water Technologies 719-254-4426/ 877-567-9310 sales@innovativeH2o.com
	UF 10	Homespring UF211	10,000	gallons per day	Air gap	
	UF 20	Homespring UF211	20,000	gallons per day	Air gap	
	UF 30	Homespring UF211	30,000	gallons per day	Air gap	
	UF 40	Homespring UF211	40,000	gallons per day	Air gap	
	UF 50	Homespring UF211	50,000	gallons per day	Air gap	
	SS 24	Homespring UF211	5,000	gallons per day	Air gap	
	SS 36	Homespring UF211	10,000	gallons per day	Air gap	
Pall Corporation	Aria AP1	Microza	28	gpm	Double block and bleed	Mark Sampson Water Control Corp 303-477-1970 m.sampson@watercontrolcorp.com
	Aria AP2	Microza	49	gpm	Bleed to tank 2 - w/level sensor	
	Aria AP3	Microza	174	gpm	Bleed to tank 2 - w/level sensor	
	Aria AP4	Microza	347 (500)* - starting 2011	gpm	Bleed to tank 2 - w/level sensor	
	Aria AP6	Microza	694	gpm	Bleed to tank 2 - w/level sensor	
	Aria AP6x	Microza	867	gpm	Bleed to tank 2 - w/level sensor	
	Aria AP8	Microza	1388	gpm	Bleed to tank 2 - w/level sensor	
Siemens Water Technology, Inc.	XP 3-24L10V	L10V	25,000 - 750,000 must show flux calcs	gallons per day	Double block and bleed	Russ Swerdfeger or Nick Lucas Siemens Water Technologies 719-622-5342 Russell.Swerdfeger@siemens.com Nicholas.Lucas@siemens.com
	XP 18-42L20V	L20V			Double block and bleed	
	CP 48-120L20V	L20V	500,000 - 6,000,000 - must show flux calcs	gallons per day	Double block and bleed	
	CP 132-240L20V	L20V			Double block and bleed	
	XPE 2L10V	L10 V	9	gpm	Manual Air gap	
	XPE 3L10V	L10V	13.5	gpm	Manual Air gap	
	XPE 4L10V	L10V	18	gpm	Manual Air gap	
	XPE 6L10V	L10V	27	gpm	Manual Air gap	
	XPE 9L10V	L10V	40.5	gpm	Manual Air gap	
	XPE 12L10V	L10V	54	gpm	Manual Air gap	

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