DIVISION OF INDUSTRY SERVICES
Plumbing Product Review
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TTY: Contact Through Relay

Scott Walker, Governor
Dave Ross, Secretary

May 28, 2015

DIAMOND WATER CONDITIONING
JOHN GRIESBACH / DAN SCHLENZ
N1022 QUALITY DRIVE
PO BOX 170
GREENVILLE WI 54942

Re: Description: WATER TREATMENT DEVICE - REVERSE OSMOSIS
Manufacturer: DIAMOND WATER CONDITIONING
Product Name: CLEARFLO ELEMENT SERIES
Model Number(s): ELE-800 AND ELE-1600
Product File No: 20140361

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of May 2020.

This approval is contingent upon compliance with the following stipulation(s):

- These products have undergone sufficient testing to document the product's ability to reduce only those contaminants and/or substances as specified in this approval letter when the product is installed and maintained in strict accordance with the manufacturer's published instructions.

- Where the Department of Natural Resources (DNR) has jurisdiction, a written approval may be required prior to installation of this product in a water supply system to reduce the concentration of a contaminant that exceeds the primary drinking water standards contained in ch. NR 809, Wis. Admin. Code, the enforcement standards contained in ch. NR 140, Wis. Admin. Code, or for a water supply system that is subject to a written advisory opinion by the DNR. For more information contact the DNR Section of Private Water Systems, P.O. Box 7921, Madison, WI 53707, telephone (608) 267-9787.

- If these approved devices are modified or additional assertions of function or performance are made, then this approval shall be considered null and void, unless the change is submitted to the department for review and the approval is reaffirmed.

- In addition to the product water quality monitor specified elsewhere in this letter, this device shall be provided with one of the following means to warn the user when the system is not performing its function:

  a. a nitrate/nitrite monitor on the product water stream; or

  b. a sampling and analysis kit for nitrate/nitrite with explicit instructions of recommended frequency of analysis.

- The system shall be provided with an in-line total dissolved solids (TDS) monitor, or other acceptable means, to warn the user when the system is not performing its functions. Acceptable alternatives to an in-line TDS monitor include:

  1. terminating the discharge of treated water;

  2. sounding an alarm which is connected to acceptable power source;

  3. flashing a light connected to an acceptable power source;

  4. providing the user with an obvious, readily interpretable, indication of the system's ability to perform (e.g. decreasing the flow rate of treated water by 50% or more for systems making mechanical filtration claims;

  5. providing a sampling service by the manufacturer, either directly or through an authorized dealer, a minimum of once every six months;

  6. providing a sampling kit for analysis of TDS or other appropriate contaminants; or

  7. providing a TDS monitor to measure the product water quality.

  Whichever means of performance verification is selected; it shall be clearly described in the owner's manual for this device, and approved for use along with the device.

- If these devices are installed as point-of-entry (POE) devices, on metallic plumbing systems, the permeate/product water must be treated with sodium carbonate (Na_2CO_3) prior to the storage tank using a positive displacement pump. Specifically the following Pro Products “Neutra-7” compound shall be used when indicated:

  http://info.nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=Pro+Products&TradeName=Neutra-7&ChemicalName=&ProductFunction=&PlantState=&PlantCountry=&PlantRegion=

  This stipulation does not apply to 100% plastic piping systems.

- If these devices are installed as POE devices, then the sizing of the required repressurization systems and treated water storage tanks shall be sized in accordance with s. SPS 382.40 Wis. Adm. Code.

  The minimum volume of the storage tank shall be sufficient to provide a 24-hour water supply at the calculated peak flow rate of the site as calculated using s. SPS 382.40 (6).

  This stipulation does not apply to point-of-use (POU) installations.

- A *locking* bypass shall be installed on all POE installations such that if the RO fails for any reason, water can be rapidly restored to the water supply system.

Based on testing data submitted to and reviewed by the department, this approval recognizes that these plumbing products will reduce the concentration of contaminants as specified on pages 1 through 3.

Table 1 of 2
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Health Effecting Contaminant Reduction Capabilities

Flow Rates: ELE-800 = 800 gallons per day (gpd)
ELE-1600 = 1,600 gpd

Contaminant	Average Influent Concentration (mg/l)	Average Effluent Concentration (mg/l)
Arsenic (As^{+5})	0.277	0.0008
Fluoride (F-)	7.9	0.1
Nitrate (NO_3^-)	23.5	1.1
Nitrite (NO_2^-)	3.1	0.2

Other conditions: Testing was performed in accordance with pertinent aspects of NSF Standards 53 and 58. All testing was performed by TG Analytical Laboratories. Testing was performed on a 30/50 psig pressure switch system.

mg/l = milligrams per liter, equivalent to parts per billion (ppm)

Table 2 of 2
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Aesthetic Contaminant Reduction Capabilities

Flow Rates: ELE-800 = 800 gallons per day (gpd)
ELE-1600 = 1,600 gpd

Contaminant	Average Influent Concentration (mg/l)	Average Effluent Concentration (mg/l)
Calcium (Ca^+)	73.0	< BDL (< 1)
Chloride (Cl^-)	23.5	< BDL (< 1.0)
Magnesium (Mg^{+2})	28.0	< BDL (< 1)
Sulfate (SO_4^{-2})	36.9	< BDL (< 1.0)
Total Dissolved Solids (TDS)	516	8

Other conditions: Testing was performed in accordance with pertinent aspects of NSF Standards 42 and 58. All testing was performed by TG Analytical Laboratories. Testing was performed on a 30/50 psig pressure switch system.

mg/l = milligrams per liter, equivalent to parts per billion (ppm)
BDL = below detection limit

This device was tested under controlled laboratory, or field, conditions. The actual performance of this device for a specific end use installation will vary from the tested conditions based on local factors such as water pressure, water temperature and water chemistry.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

Glen W. Schlueter
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