



Governor Tony Evers Dan Hereth, Secretary Designee

February 28, 2024

U.S. Water LLC
Kevin Marshall
6905 Venture Circle
Weston WI 54476

Re: Description: Water Treatment Device – Anion Exchange
Manufacturer: U.S. Water LLC
Product Name: PFAS Shield: PF091665, PF102472, PF153072, PF202472, PF303072, PF403072, PF503072 and PF603072
Model Number(s): PFAS Shield: PF091665, PF102472, PF153072, PF202472, PF303072, PF403072, PF503072 and PF603072
eSLA PTO No.: PP-022400003-PTOWTD

The specifications and/or plans for these per- and polyfluorinated substances (PFAS) reduction systems have been reviewed and determined to conform to pertinent aspects of 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 February 2029. This approval is contingent upon compliance with the following stipulation(s):

1. These PFAS reduction systems shall:
 - a. be installed, maintained and used in strict accordance with the manufacturer's published instructions, Chapters 382-384 Wis. Adm. Code and this product approval. If there is a conflict between the manufacturer's instructions and the Wis. Adm. Code or this Plumbing Product Approval, then the Wis. Adm. Code and this Plumbing Product Approval shall take precedence.
 - b. be installed by persons holding the proper license or registration in accordance with Wis. Stats. § 145.
 - c. be sized in accordance with the empirical fixture count method described in s. SPS 382.40 (7) Wis. Adm. Code.
 - d. be installed with flow controls to prevent the systems from exceeding the maximum rated service flow rates specified in Table 1 of 2 and 2 of 2.
 - e. be installed in a packed bed configuration.
 - f. not be backwashed. If turbidity/particulate loading is an issue, then adequate prefiltration shall be installed.
 - g. be installed in series.
 - h. be installed with sample taps immediately upstream and downstream of each system. This does not mean between each tank in a multiple tank system.
 - i. be installed *without* bypass piping. If a bypass is strongly desired, then it shall be of the locking type.
 - j. be inspected and tested for PFA reduction performance every six months by U.S. Water LLC.
 - k. have their depleted carbon routed back to the manufacturer for reactivation/incineration.
 - l. bear permanent, indelible labels displaying the following minimum information:
 - i. manufacturer's name and contact information;
 - ii. model number;
 - iii. maximum rated service flow rate and corresponding pressure drop;
 - iv. operating pressure range;
 - v. operating temperature range; and
 - vi. "PFAS Filter."
2. All water distribution piping shall be marked as required by Table SPS 382.40-1a.

3. All wall hydrants not served by these PFAS reduction systems shall have at least one of the following:
 - a. the handles of the hydrant shall be removed;
 - b. the hydrant shall be capped and sealed using solder; or
 - c. signage shall be posted immediately above the hydrant indicating the water is unfit for human consumption.
4. If the installation of any system component being installed interrupts the electrical continuity of the path to ground, then a properly sized electrical bonding jumper shall be installed to reestablish electrical continuity.
5. All electrical aspects of installation shall conform to Ch. SPS 316 Wis. Adm. Code.
6. Where the Department of Natural Resources (DNR) has jurisdiction, a written approval may be required prior to installation of these systems 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 Drinking and Groundwater staff assigned to your county:

<https://dnr.wisconsin.gov/sites/default/files/topic/DrinkingWater/CountyContacts.pdf>

The WDNR may require site-specific plan review for each installation of these devices on non-transient non-community water supply (NTNC) or a transient non-community water supply (TNC).

7. If one or more PFAS reduction systems are installed on a non-transient non-community water supply (NTNC) or a transient non-community water supply (TNC) in response to a directive from the Wisconsin Department of Natural Resources (WDNR), then a site-specific installation approval and final inspection from DSPS are required. The installation approval and final inspection required by DSPS shall not supplant the requirement for any plan review and inspection actions specified by the WDNR.

A NTNC system is a system that regularly serves at least 25 of the same people for six months of the year. Examples of NTNC systems include, but are not limited to, schools, daycares and factories.

A TNC system is a system that serves at least 25 people at least 60 days of the year but does not serve the same 25 people over six months of the year. Examples of TNC systems include, but are not limited to, restaurants, motels, taverns, parks and campgrounds.

The site-specific installation approval is the responsibility of the installer and shall be obtained prior to the device(s) being put in service. Site-specific water treatment system installation approvals are initiated via this link:

<https://esla.wi.gov/portalcommunitylogin>

The final inspection shall occur prior to the device(s) being put in service and be performed by the DSPS Plumbing Consultant having authority in the district:

<https://dsps.wi.gov/Documents/Programs/Maps/Plumbing.pdf>

When the final inspection has been completed, this department shall notify the WDNR. The WDNR shall then monitor the performance of the device(s) to its satisfaction. A suggested frequency and overall duration of monitoring is provided elsewhere in this letter.

If these PFAS reduction systems are installed on a TNC/NTNC and put in service prior to obtaining a site-specific installation approval and final inspection, then any pertinent approval for the PFAS reduction system is immediately rendered null and void and the PFAS reduction system may be ordered removed.

8. This department suggests the performance of these PFAS reduction systems be monitored on a quarterly basis.

The department suggests that performance samples be collected during peak use periods.

9. These PFAS reduction systems have undergone sufficient testing to document the product's ability to reduce only those contaminants and/or substances as specified in Table 1 of this approval letter when the product is installed and maintained in strict accordance with the manufacturer's published instructions and this approval.
10. If these PFAS reduction systems are modified or additional assertions of function or performance are made, then this approval shall be considered null and void, unless the change is first submitted to the department for review and the approval is reaffirmed.

Table 1 of 2
PFAS Reduction Capabilities

Model Number	Total Estimated PFAS Reduction Capacity (gals.) [♦]	Tank Size [dia. x height (in.)]	Total GAC Volume (ft. ³)	Max. Flow (gpm)* @ Pressure loss (psig)
PF091665 (2-tank)	8,378,344	16 x 65	13	9
PF102472 (1-tank)	9,022,832	24 x 72	14	10
PF153072 (1-tank)	13,018,658	30 x 72	20.2	15
PF202472 (2-tank)	17,401,176	24 x 72	27.0	20
PF303072 (2-tank)	26,424,008	30 x 72	41.0	30
PF403072 (3-tank)	34,802,352	30 x 72	54.0	40
PF503072 (3-tank)	43,502,940	30 x 72	67.5	50
PF603072 (4-tank)	52,848,016	30 x 72	82.0	60

* = A flow restrictor must be installed to prevent exceeding the flow rates displayed

♦ = These PFAS reduction systems were tested under controlled laboratory conditions and are approved under the following circumstances:

- a. Total organic carbon ≤ 1.0 mg/l
- b. Total combined PFAS < 50 parts per trillion (ppt), assumed to be 25 ppt perfluorooctanoic acid (PFOA) + 25 ppt perfluorooctane sulfonic acid (PFOS)
- c. Breakthrough defined as > 4.0 ppt (0.004 ppb)
- d. Calgon Filtersorb 400 **reagglomerated** activated carbon. No substitutions are permitted under this approval.
- e. A 20% capacity downgrade has been applied as a safety factor.

The actual performance of these PFAS reduction systems 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.

Table 2 of 2
PFAS System Parameters

Model No. (# of tanks)	Tank Size (in.)	GAC Vol. (ft. ³)	Area/Tank (ft. ²)	Hydraulic Loading Rate (gpm/ft. ²)	Flow Rate (gpm)	EBCT (min.)
PF091665 (2-tank)	16 x 65	13.0	1.40 x 2 = 2.80	3.2	9	10.8
PF102472 (1-tank)	24 x 72	14.0	3.14	3.2	10	10.5
PF153072 (1-tank)	30 x 72	20.2	4.91	3.1	15	10.1
PF202472 (2-tank)	24 x 72	27.0	3.14 x 2 = 6.28	3.2	20	10.1
PF303072 (2-tank)	30 x 72	41.0	4.91 x 2 = 9.82	3.1	30	10.2
PF403072 (3-tank)	30 x 72	54.0	4.91 x 3 = 14.73	2.7	40	10.1
PF503072 (3-tank)	30 x 72	67.5	4.91 x 3 = 14.73	3.4	50	10.1
PF603072 (4-tank)	30 x 72	82.0	4.91 x 4 = 19.64	3.1	60	10.2

11. Ongoing service and maintenance of these PFAS reduction systems shall be performed by U.S Water LLC, 6905 Venture Circle, Weston WI 54476; 800-932-2216. <https://www.uswater.com/>.
12. A complete set of product literature, including installation, operation and maintenance instructions shall be provided to the PFAS reduction system owner and remain onsite.

The department is in no way endorsing these PFAS reduction systems or any advertising and is not responsible for any situation which may result from their use.

Sincerely,

APPROVED

By Glen Schlueter at 4:24 pm, Feb 27, 2024

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