State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

May 13, 2025

MS. DENICE NELSON
JOHNSON CONTROLS, INC
5757 N. GREEN BAY AVENUE
MILWAUKEE, WI 53209

Via Email Only to denice.karen.nelson@jci.com

SUBJECT: Semi-Annual Operation, Maintenance, and Optimization Progress Report #12
Ditch A Interim Action Treatment System (July 1 – Dec. 31, 2024)
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Ms. Nelson:

On March 31, 2025, the Wisconsin Department of Natural Resources (DNR) received the *Semi-Annual Operation, Maintenance and Optimization Progress Report #12* (O&M Progress Report #12) for the interim remedial action to treat surface water in Ditch A at the above-referenced site (the "Site"). The report was submitted by Arcadis U.S., Inc. (Arcadis), on behalf of Johnson Controls, Inc., and Tyco Fire Products LP (JCI/Tyco) and was accompanied by the fee required under Wisconsin Administrative Code (Wis. Admin. Code) § NR 749.04(1) for DNR review and response.

The DNR's review of O&M Progress Report #12 finds that the Ditch A system removed per- and polyfluoroalkyl substances (PFAS) and reduced the concentration of PFAS in the surface water it captured and treated. However, the system does not prevent PFAS-contaminated water from infiltrating into Ditch A and elevating the PFAS concentrations in surface water downstream of the treatment. JCI/Tyco is currently installing two groundwater extraction wells near Ditch A to further reduce contaminant migration in Ditch A. The DNR recommends that JCI/Tyco continues to operate on the Ditch A treatment system while it evaluates the effectiveness of the new extraction wells in controlling contaminant migration on this portion of the Site.

Background

JCI/Tyco is investigating and responding to the discharge of PFAS to the environment at the JCI/Tyco Fire Technology Center (FTC), located at 2700 Industrial Parkway South in Marinette, Wisconsin.

An intermittent surface water drainage feature identified as Ditch A flows south through the FTC property to the Little River in the town of Peshtigo. In Jan. 2019, JCI/Tyco began an interim remedial action to treat surface water in Ditch A on the FTC property after testing confirmed it contained perfluorooctanoic acid (PFOA) up to 6,000 parts per trillion (ppt) and perfluorooctanesulfonic acid (PFOS) up to 1,100 ppt.

The Ditch A system is near the southern edge of the FTC property. Surface water flowing in Ditch A is captured at a check dam and treated using suspended solids settling, bag filtration and granular activated carbon (GAC). The treated water is then discharged back to Ditch A downstream of the check dam under a Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit (WI-0046566-07-0) and the associated coverage letter, which specifies the effluent criteria and monitoring requirements.

The system is designed to treat a maximum flow rate of 100 gallons per minute (gpm). The system can treat most of the surface water moving through Ditch A at this location. Occasional high flow events or downtime for system

PRINTED ON RECYCLED PAPER

repairs may allow surface water to overtop the check dam and some surface water to go untreated; these events are minimal. The system only operates when there is measurable streamflow; the system is shut down when the ditch is frozen or runs dry, which typically occurs fall through winter each year.

NR 205 WPDES Permit

The effluent from the Ditch A treatment system is regulated under WPDES General Permit No. WI-0046566-07-0 and the associated coverage letter (updated June 4, 2021). The DNR's Wastewater Program administers the WPDES permit and reviews the monthly electronic discharge monitoring reports submitted by JCI/Tyco. A review of the permit reporting is not included with this letter.

Summary and DNR Review of O&M Progress Report #12

JCI/Tyco's O&M Progress Report #12 for Ditch A covered the period from July 1 to Dec. 31, 2024. During this time, the system operated for the 101 days when there was measurable streamflow. Heavy precipitation events resulted in overtopping of the check dam on a few occasions in July 2024.

System Operation and Performance

The system reduced the PFAS concentrations in the surface water it captured and treated. Surface water captured by the system had concentrations up to 1,400 ppt for PFOA and up to 470 ppt for PFOS; PFOA and PFOS were not detected above the reporting limits in the effluent from the treatment system.

During the reporting period, the approximately 13,200 pounds of GAC and 55,570 kilowatt-hours of electricity were used to remove 0.038 pounds of PFOA and 0.013 pounds of PFOS from 12.7 million gallons of surface water. Cumulatively, since startup of the system began in Jan. 2019, approximately 0.96 pounds of PFOA and 0.49 pounds of PFOS have been removed from the approximately 145 million gallons of captured surface water.

Routine system maintenance that occurred during this reporting period included removal of accumulated sediment, replacement of spent bag filters and replacement of spent GAC. The spent bag filters were collected in drums and disposed by End Point Solutions, and the spent GAC was reactivated by Tetrasolv Filtration, Inc. Documentation of the handling of these waste materials was included in Appendix E.

Surface Water Monitoring

The water in Ditch A sampled downstream of the treatment system, at surface water sampling points SW-40 and SW-26, occasionally had levels of PFOA and PFOS that exceeded the Wis. Admin. Code § NR 102.04 surface water standards of 95 ppt for PFOA and 8 ppt for PFOS. During the reporting period, the downstream surface water concentrations were up to 560 ppt for PFOA and up to 180 ppt for PFOS. The elevated concentrations detected in the surface water downstream of treatment were attributed to times when Ditch A intercepts contaminated groundwater migrating from the FTC site. The Ditch A system does not prevent contaminated groundwater from infiltrating into the ditch downstream of the treatment system.

In its review of the previous O&M Progress Report #11, the DNR recommended that JCI/Tyco evaluates ways to further control contaminant migration in Ditch A and the site. JCI/Tyco is currently installing two groundwater extraction wells near the Ditch A treatment system to connect to the existing Groundwater Extraction and Treatment System (GETS). The influence that these two extraction wells have on PFAS migration in Ditch A will be evaluated in future reports.

Next Steps

While the updates to the GETS are being implemented and evaluated, the DNR recommends that JCI/Tyco continue to operate the Ditch A system and the submit semi-annual O&M Progress Reports in accordance with the approved operation, maintenance and monitoring plan (Wis. Admin. Code § NR 724.13 (3)). Continued reporting on the pounds of GAC and electricity used per pound of PFOA and PFOS removed is recommended; these metrics can factor into future decisions for optimization and use of the Ditch A treatment system.

As a reminder, this Site is subject to an enforcement action and therefore all submittals to the DNR under Wis. Admin. Code chs. NR 700-799 and submittals directed by the DNR must be accompanied by an Wis. Admin. Code ch. NR 749 fee per Wis. Stat. § 292.94. These fees are not pro-ratable or refundable per Wis. Admin. Code § NR 749.04(1). If you have any questions about whether to include a fee with a submittal, please contact DNR staff prior to submitting a document without a fee.

If you have any questions, please contact me at Alyssa.Sellwood@wisconsin.gov or (608) 622-8606.

Sincerely,

Alyssa Sellwood, PE
Water Resources Engineer
Remediation & Redevelopment Program

cc: Jodie Thistle, DNR (via email: Jodie.Thistle@wisconsin.gov)