



October 28, 2024

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 #11
Ditch A Interim Action Treatment System (Jan. 1 – June 30, 2024)
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Ms. Nelson:

On Oct. 18, 2024, the Wisconsin Department of Natural Resources (DNR) received the *Semi-Annual Operation, Maintenance and Optimization Progress Report #11* (O&M Progress Report #11) 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 #11 finds that the Ditch A system effectively removes per- and polyfluoroalkyl substances (PFAS) from the surface water it captures. However, PFAS in water that migrates into Ditch A downstream of the treatment system and in groundwater not intercepted by the ditch goes untreated. The DNR recommends that JCI/Tyco continue to operate and report on the Ditch A system, but that it also evaluates if optimization or addition of other interim actions are needed to further minimize contaminant migration at the Site (Wis. Admin. Code § NR 708.11(1)(a)).

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

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 #11

JCI/Tyco's O&M Progress Report #11 for Ditch A covered the period from Jan. 1 to June 30, 2024. During this time, the system operated for the 88 days when there was measurable streamflow. Heavy precipitation events resulted in overtopping of the check dam on seven occasions in May.

System Operation and Performance

During the reporting period, the Ditch A system used approximately 26,400 pounds of GAC and 80,681 kilowatt-hours of electricity to remove 0.034 pounds of PFOA and 0.017 pounds of PFOS from 10.9 million gallons of captured surface water. Cumulatively, since startup of the system began in Jan. 2019, approximately 0.92 pounds of PFOA and 0.48 pounds of PFOS have been removed from the approximately 133 million gallons of captured surface water.

The system effectively removed PFAS from the surface water it captured. Surface water coming in had concentrations up to 680 ppt for PFOA and up to 470 ppt for PFOS, and PFOA and PFOS were not detected above the reporting limit in the water exiting the treatment system.

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

During months when there was measurable streamflow, JCI/Tyco collected surface water samples at two points downstream of the Ditch A treatment system. Samples were collected in April, May and June from surface water sampling point SW-40 and in June from surface water sampling points SW-26. The results were compared to the Wis. Admin. Code § NR 102.04 surface water standards of 95 ppt for PFOA and 8 ppt for PFOS.

- The concentrations of PFOA and PFOS were below standards of in the April and May samples.
- The concentrations of PFOA and PFOS exceeded standards in the June samples and showed an increasing trend between surface water sampling points SW-40 and SW-26.

The high and increasing concentration trend observed in the June 2024 samples were attributed to PFAS-impacted groundwater infiltrating Ditch A downstream of the treatment system.

Next Steps

The DNR recommends that JCI/Tyco continue to operate the Ditch A system, but that it also evaluates if optimization or other interim actions are needed to further minimize contaminant migration at the Site (Wis. Admin. Code § NR 708.11(1)(a)).

While the Ditch A system is being used, JCI/Tyco should continue to submit semi-annual O&M Progress Report in accordance with the approved operation, maintenance and monitoring plan for the Ditch A treatment system (Wis. Admin. Code § NR 724.13 (3)).

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,

A handwritten signature in cursive script that reads "Alyssa Sellwood".

Alyssa Sellwood, PE
Water Resources Engineer
Remediation & Redevelopment Program

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