



October 29, 2021

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Via Email Only to jeffrey.howard.danko@jci.com and scott.wahl@jci.com

SUBJECT: Response to Semi-Annual Operation, Maintenance, and Optimization Progress Report #5
Ditch A Interim Action Treatment System (January 1, 2021 – June 30, 2021)
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Mr. Danko and Mr. Wahl:

On September 16, 2021, the Wisconsin Department of Natural Resources (DNR) received *Semi-Annual Operation, Maintenance, and Optimization Progress Report #5* (O&M Progress Report #5)¹ for the Ditch A interim action at the above-referenced 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 appropriate fee of \$425 required under Wisconsin Administrative Code (Wis. Adm. Code) § NR 749.04(1) for DNR review and response.

The DNR reviewed JCI/Tyco's O&M Progress Report #5 for the Ditch A interim action and this letter includes a summary of the background and operations presented in the report and a discussion of items to include in future reporting starting with O&M Progress Report #6.

Background

JCI/Tyco are investigating and responding to the discharge of per- and polyfluoroalkyl substances (PFAS) to the environment at the JCI/Tyco Fire Technology Center (FTC), located at 2700 Industrial Parkway South in Marinette, Wisconsin (the "Site"). The discharge occurred as the result of training, testing, research and development of PFAS-containing aqueous film forming foams (AFFF) at the Site starting in the early 1960s.

A surface water drainage feature identified as Ditch A flows south through the FTC property, continues south to the Little River and eventually discharges to the Bay of Green Bay in Lake Michigan. Elevated PFAS concentrations were detected in the surface water of Ditch A on the FTC property; perfluorooctanesulfonic acid

¹ The DNR referred to progress reports starting in July 2019 as Progress Reports #1, #2, and #3; however, JCI/Tyco submitted an earlier progress report (without a fee) for operations from January to June 2019. The DNR should have referred to this first report as Progress Report #1, and the subsequent three reports as Progress Report #2, #3, and #4.

(PFOS) up to 1,100 parts per trillion (ppt) and perfluorooctanoic acid (PFOA) up to 6,000 ppt. In January 2019 JCI/Tyco began an interim action to reduce the concentration of PFAS in the surface water in this ditch.

The interim action includes a treatment system constructed adjacent to Ditch A on the southern boundary of the FTC property. The system captures surface water flowing in Ditch A at a check dam, and treats the captured water 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.

Operation of the Ditch A treatment system reduces the amount of PFAS that migrates downstream in the ditch. The system is designed to treat a maximum flow rate of 100 gallons per minute (gpm). The surface water in the ditch occasionally freezes, runs dry or flows at a rate lower than 100 gpm, such that the system captures and treats most of the surface water migrating south in the ditch. There may be occasional high flow events or system downtime where surface water overtops the check dam and is not captured by the Ditch A system, and therefore goes untreated as it migrates downstream.

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 O&M Progress Report #5

JCI/Tyco's O&M Progress Report #5 documented system operations and maintenance during the reporting period January 1, 2021 to June 30, 2021, which cover 181 days. During this period the system treated over 13.5 million gallons of surface water and operated 96 percent of the time when stream flow conditions supported operations (108 days); the system was off between January 24, 2021 and March 9, 2021 while water in the ditch was frozen.

JCI/Tyco reported that the 4 percent system downtime when stream flow supported operations was for maintenance and alarm-related shutdowns, which were responded to within a day. No high-level alarms (i.e., check-dam overtopping events) were triggered during this reporting period.

Since initial startup in January 2019, the system has removed approximately 0.37 pounds of PFOS and 0.68 pounds of PFOA from the surface water. The amount of surface water that went untreated and the amount of PFAS that migrated downstream of the treatment system was not reported.

DNR Review of O&M Progress Report #5

JCI/Tyco's O&M Progress Report #5 met the reporting schedule for semi-annual progress reports under Wis. Adm. Code § NR 724.13(3) and documented system operations and maintenance, as required. Additional information is required in future reports to document effectiveness of the interim action.

On April 20, 2021, the DNR responded to JCI/Tyco's previous fee-based O&M Progress Reports² with directions JCI/Tyco must follow to document system effectiveness in future reporting. Because these directions were received in the middle of the reporting period JCI/Tyco did not include all the required updates in O&M Progress

² JCI/Tyco submitted three semi-annual O&M Progress Report reports with a fee. JCI/Tyco submitted an additional progress report on December 31, 2019 for the first 6 months of operations, which did not include a fee for DNR review and response.

Report #5; however, JCI/Tyco stated in the cover letter to the report that the required revisions will be included starting with in O&M Progress Report #6.

In future progress reports JCI/Tyco must document the system's ability to capture and control PFAS migration in Ditch A surface water and the management of PFAS-impacted waste that was generated during the reporting period. To evaluate the effectiveness of the interim remedial action, DNR directed JCI/Tyco to report and compare the total flow volume in Ditch A to the volume treated by the system and to calculate the monthly average PFOA and PFOS mass migrating downstream of the Ditch A treatment system using an approach approved by the DNR.

JCI/Tyco presented methods for calculating total flow and PFAS mass migrating downstream in Ditch A in its July 19, 2021 *Operation, Maintenance, and Long-term Monitoring Plan* ("OM&M Plan"). On same date as this letter (October 29, 2021), the DNR also responded with minor revisions required to finalize and approve the OM&M Plan for Ditch A. Using the methods in the approved OM&M Plan, JCI/Tyco must document the total flow and mass of PFOA and PFOS migrating downstream in Ditch A in the future progress reports, starting with O&M Progress Report #6.

Next Steps

Continue documenting system operations and maintenance in semi-annual O&M Progress Reports (Wis. Adm. Code § NR 724.13(3)), and in future progress reports (starting with O&M Progress Report #6) document waste management and performance of the interim action according to the directions in DNR's April 21, 2021 letter and approved OM&M Plan for Ditch A.

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.

The DNR appreciates your efforts to investigate and remediate this Site. If you have any questions about this letter, please contact me, the DNR Project Manager, at (608) 622-8606 or Alyssa.Sellwood@wisconsin.gov.

Sincerely,



Alyssa Sellwood, PE
Complex Sites Project Manager
Remediation & Redevelopment Program

cc: Ben Verburg, Arcadis (via email: ben.verburg@arcadis.com)
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