



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

NOV 28 2017

LU-16J

Via Certified Mail 7016 3010 0000 9203 1027
Return Receipt Requested

Mr. Joseph Janeczek, PE, ARM
Director – Global Environmental Programs
& Corporate Social Responsibility / EHS
Johnson Controls
9 Roszel Road
Princeton, New Jersey 08540

Subject: Tyco Pump Down Program Technical Impracticability
Tyco Fire Products, LP, Stanton Street Facility, Marinette, Wisconsin
EPA RCRA Administrative Order Docket No. RCRA-05-2009-0007
EPA Facility ID WID 006 125 215

Dear Mr. Janeczek:

The United States Environmental Protection Agency received your email dated September 11, 2017, regarding the Pump Down Program (PDP) at the Tyco Fire Products LP (Tyco) Stanton Street facility, your October 10, 2017 email requesting EPA renegotiate the 2014 Agreement on Resolution (AOR), and your November 9, 2017 bi-weekly Summary Report for the PDP notifying EPA that “the temporary pump down system was decommissioned” on November 1, 2017. In the September 11, 2017 email, Tyco states that it “believes the facts and circumstances of the 2016 Pump Down Program clearly meet the criteria” of Technical Impracticability described in EPA’s 1993 *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration (Publication 9324.2-25)* (1993 Guidance). Tyco also states that “a root-cause analysis regarding the source of the groundwater infiltration and a work plan for the design and implementation of more permanent solution would be necessary.” In your September 11, 2017 email you request an extension of the deadline to meet the Target Elevation deadline to October 2018. In your October 10 email you requested EPA to “re-open” the AOR requirements because meeting the Target Elevations was more difficult than you anticipated.

As discussed more fully below, EPA does not agree with the claim of Technical Impracticability and will not re-open the AOR without completion of the required root cause analysis and the other requirements of the AOR related to assessing the integrity of the barrier wall and the components of the pump down program and the submission of the 5-year review which is due December 31, 2018. Consequently, EPA will not extend the deadline for meeting the Target Elevation in the Salt Vault and Eighth Street Slip (8SS). Furthermore, after reviewing and discussing your emails and other available information with management from the EPA Land and Chemicals Branch as well as the Office of Regional Counsel, EPA believes that Tyco is out of compliance with section I.A.1 of the *Agreement on Resolution of 2013 Five*

Year Review Technical Issues (AOR), paragraphs 11.g and 21.d of the Administrative Order on Consent (AOC) dated February 26, 2009, the EPA-approved Revised Barrier Wall Groundwater Monitoring Plan Update (RBWGMPU) of September 2015, and EPA's letters of June 26, 2016 and August 10, 2017.

Technical Impracticability is not legally available, in this situation, under the terms of the AOR. Furthermore, Tyco has failed to technically justify it under the AOR and the 1993 Guidance. Section I.A.4 of the AOR provides that a Technical Impracticability request is only legally available if Tyco could not, in the first instance, achieve the Target Elevations of 577.5 feet below the Ordinary Low Water Mark (OLWM) "*as soon as practicable*", but no later than December 31, 2017. Furthermore, the AOR requires Tyco to use the "*best technical and mechanical methods*" available to meet the Target Elevation.

Tyco achieved the Target Elevation on July 27, 2016 and maintained those levels through operation of their pumping system until October 24, 2016. By achieving those levels, Tyco demonstrated that they were technically practicable – even if the method relied upon was off-site disposal. It also met those levels "*as soon as practicable.*" Consequently, under the AOR, July 27, 2016 became the date when Tyco met the Target Elevation. After that date, Tyco was required to operate its system to maintain the Target Elevation. Section I.A.1 of the AOR and Section 4.3.2 of the RBWGMPU specifically identify the steps Tyco is to take when there are exceedances of the Target Elevation. As discussed more fully below, Tyco has not taken the necessary steps.

Assuming for the sake of argument that Technical Impracticability were available, Tyco has not demonstrated that it used the "*best technical and mechanical methods*" to attain and maintain the Target Elevation. Tyco does not address this requirement in its letter. Tyco partially justifies its Technical Impracticability request by relying on the "temporary" nature of the system it used in 2016 to meet the Target Elevation. In the letter, Tyco states that "the existing system was purposely designed as a temporary system for an aggressive drawdown of groundwater to achieve the Target Elevation, not as a permanent approach to maintain the Target Elevation."

Tyco was required to design and implement a system which "*uses the best technical and mechanical methods*" to meet the Target Elevation and then to maintain it "*in perpetuity.*" Tyco had more than three years to design such a system. The high arsenic concentrations, large volume of contaminated ground water, and weather conditions have been well-known for years. The fact that the system Tyco used last year was unable to operate year-round due to seasonal freezing conditions should have been considered by Tyco. Tyco could have added permanent extraction wells to the Groundwater Collection and Treatment System (GWCTS) or continued off-site disposal to ensure the Target Elevation was maintained. Tyco did not do that. Instead, Tyco shut the system down on October 24, 2016.

After system shutdown, the 8SS stayed below the Target Elevation until approximately April 24, 2017. The Salt Vault, however, rebounded above the Target Elevation on or about November 7, 2016. According to the AOR, Tyco was required to provide EPA with a plan to restore the groundwater elevations to 577.5 OLWM in the Salt Vault and Eighth Street Slip (8SS) by December 8, 2016 and May 25, 2017, respectively. Tyco did not take any steps to provide EPA with such plans until you called me on May 2, 2017. At a minimum, during the winter of 2016 and spring of 2017 Tyco could have used the existing infrastructure to attempt to maintain the groundwater levels. Tyco's failure to do this caused the accumulation of the volume of groundwater that is currently in the Salt Vault and 8SS. Tyco did not restart pumping to lower the groundwater elevations in the Salt Vault and 8SS until August 29, 2017. On that date, the Salt Vault and 8SS were 5.59 and 3.01 feet above the Target Elevation, respectively. Between August 29 and November 1, 2017 Tyco estimated pumping 129,558 gallons from the Salt Vault and 8SS, collectively. Tyco measured groundwater elevations most recently on October 25, 2017,

recording the Salt Vault and 8SS at 3.91 and 2.15 feet above the Target Elevation, respectively (1.68 and 0.86 feet of drawdown, respectively). Comparatively, in the first eight weeks of PDP operations in 2016, Tyco pumped an estimated 776,300 gallons, resulting in 6.35 feet of drawdown in the Salt Vault, 6.19 feet of drawdown in the 8SS, and had achieved the Target Elevation. Tyco's actions do not comply with the AOR and the RGWMPU. Tyco did not use the "*best technical and mechanical methods*" to meet and maintain the Target Elevation, a pre-requisite under the AOR.

Furthermore, Tyco has failed to achieve the pumping rates or utilize off-site disposal it identified as required for the operation and maintenance phase in the RBWGMPU. Tyco identified continued pumping and off-site disposal as a method it would use to maintain the Target Elevations. Tyco stated in the RBWGMPU:

"[I]t is anticipated that groundwater levels will be maintained by pumping EW-03, which is already plumbed to the existing GWCTS at 3 gallons per minute (gpm) or less. A contingency will be included in the PDP plan and RFP documents that if EW-03 cannot maintain groundwater levels at or below the target elevation, an additional extraction well also will be connected to the GWCTS, if feasible. To ensure GWCTS compliance with its WPDES permit, a portion of the extracted groundwater may alternatively be disposed offsite under a short- or long-term operation rather than being treated at the GWCTS."

A similar statement was made for the 8SS and EW-02 in the same document.

Tyco, however, failed to operate pumps EW-03 and EW-02 at or near the 3.0 gallons per minute rate it identified in the RBWGMPU. Tyco presented slides to EPA at the July 25, 2017 meeting, which show that EW-02 and EW-03 each have a long-term extraction capacity of only ~0.5 gallons per minute. These are identified as the only extraction wells in the PDP plumbed to the GWCTS. Tyco did not install additional wells to supplement this pumping rate. It did not implement off-site disposal after the seasonal interim shutdown period ended. Instead, Tyco applied for WDNR approval of its on-site treatment pilot test on June 20, 2017. When Tyco identified that the GWCTS pilot test failed on or about October 6, 2017, it only pumped an additional 5,778 gallons for off-site disposal through November 1, 2017. In sum, these actions and delays do not demonstrate that Tyco used the "*best technical and mechanical methods*" as required by the AOR.

Tyco relies on the 1993 Guidance to justify its Technical Impracticability request. Section 4.3 of the 1993 Guidance states that the Technical Impracticability determinations should include "a demonstration that no other remedial technology could reliably, logically, or feasibly attain the standard." As discussed above, Tyco has yet to demonstrate that alternative methods cannot attain the Target Elevation. Alternatives to be examined include and are not limited to year-round use of EW-02 and EW-03, supplementation of these wells with other wells, or on-site treatment coupled with off-site disposal.

Tyco's Technical Impracticability request also relies on the cost it will incur this year if it continues to pump the ground water and ship it off-site. Tyco states that Technical Impracticability is justified because "the cost and resources to complete the temporary pump down is inordinately high - approximately \$1,000,000 and two full time staff."

Tyco has not met the documentation requirements of the 1993 Guidance. Section 4.4.5 of the 1993 Guidance, which states that costs of remedy alternatives must be developed and compared. Tyco has not done this. It has not supplied basic information such as the amount to be pumped down and detailed costs for alternatives and the benefits derived from the alternatives.

Tyco asserts that the \$1,000,000 is not worth the environmental benefit that would occur from the immediate pump down that is required. As Tyco points out the 1993 Guidance clearly states that “the *role of cost or scale (emphasis added)* is subordinate to the goal of remedy protectiveness.” Tyco, however, has significantly misstated the environmental benefits.

EPA believes that immediately reducing the groundwater levels will reduce the hydraulic pressure placed on the barrier wall. That is a significant environmental benefit, since the groundwater in the 8SS and Sault Vault is contaminated with arsenic at concentrations as high as 5,700,000 ug/L. As Tyco is aware, historically, the Site’s groundwater was a significant source of arsenic which contaminated the Menominee River sediments immediately adjacent to the Site. Tyco and EPA, through Legacy Act funding, have reduced arsenic contamination in the Menominee River. The PDP, with off-site disposal, will create an inward gradient during average stage in the Menominee River. The PDP with an inward gradient during average river stage was required for both Great Lakes Legacy Act funding and compliance with the AOC. Without the PDP and the inward gradient, recontamination of the Menominee River is a possibility. Tyco argued long and hard against the traditional monitoring EPA required. The AOR and its clear requirement to meet and maintain Target Elevation *in perpetuity* was the compromise that protected the Menominee River and allowed Tyco to obtain the benefit of Great Lakes Legacy Act funding.

For all of these reasons, EPA denies Tyco’s Technical Impracticability and extension request. Furthermore, based on the November 9, 2017 bi-weekly Summary Report notifying EPA that “the temporary pump down system was decommissioned” on November 1, 2017, and without a plan to continue de-watering the Salt Vault and 8SS, Tyco is not in compliance with the AOC, the AOR, the RBWGMPU, and the June 26, 2017 and August 10, 2017 letters.

EPA is directing Tyco to submit and implement, upon EPA approval, a work plan that will include reducing groundwater recharge into the Salt Vault and 8SS throughout the winter, resuming aggressive pumping no later than April 15, 2018 to return the groundwater in the 8SS and Salt Vault to below 577.5 feet OLWM (Target Elevation) by no later than May 31, 2018, and maintaining the groundwater elevation below the Target Elevation in perpetuity thereafter. The work plan is due 30 days after receipt of this letter.

According to paragraph 27.b of the AOC, EPA may require Tyco to deposit into a trust fund the \$1,305,535 guaranteed by the Standby Letter of Credit issued by Banco Bilbao Vizcaya Argentaria if Tyco fails to comply with the AOR and this letter. EPA may also demand stipulated penalties pursuant to paragraph 33.c. of the AOC. EPA is not extending the date for meeting the Target Elevations in the Salt Vault and 8SS. EPA reserves its right to demand stipulated penalties and/or require deposit of the \$1,305,535 if Tyco continues to violate the AOR.

In your October 10, 2017 email you request EPA to re-open the AOR because conditions are not what Tyco anticipated. For the reasons stated above EPA disagrees with Tyco’s assertion that conditions are more complicated or are not what should have been reasonably anticipated at the time the AOR was negotiated. Furthermore, Tyco has to date not provided the technical and environmental data which would normally be expected to allow an evaluation of your request to re-open the AOR. At a minimum, to re-examine the AOR and the effectiveness of the barrier wall, EPA would expect the data from a root cause analysis, the dye testing, sediment sampling, other AOR requirements and the 5-year review report.

The AOR sets out a procedure for addressing potential Target Elevation exceedances. That procedure is the root cause analysis. EPA agrees with Tyco’s September 11, 2017 proposal for it to complete a root cause analysis. Tyco should independently conduct a root cause and alternatives analysis to explore the

reasons for Target Elevation and GWCTS WPDES permit exceedances and the alternatives available to maintain the Target Elevation in the future as part of the operation and maintenance of the PDP. Tyco may not use this root cause and alternative analysis as a reason for further delay in meeting the Target Elevation. As part of its root cause and alternatives analysis, Tyco must submit to EPA an analysis of the source(s) of groundwater infiltration into both the Salt Vault and the 8SS.

Additionally, as explained above, Tyco must submit a work plan, with a detailed schedule, for reducing groundwater recharge throughout the winter, resuming aggressive pumping no later than April 15, 2018, meeting the Target Elevation by no later than May 31, 2018, and for the design and implementation of a permanent pumping system to maintain the Target Elevation in the 8SS and Salt Vault in perpetuity thereafter. Tyco should include consideration of all contingency options necessary, including alternatives to on-site treatment of the pump down area groundwater; permanent offsite disposal or emergency offsite disposal when the GWCTS is not operational or when Tyco's preferred offsite disposal facility is not available for use. Tyco must include detailed cost estimates for each alternative. This work plan should also include a summary of previous upgrades and maintenance to the GWCTS and a plan for continuous performance evaluation of the GWCTS if it is utilized in future PDP activities.

In summary, EPA requires Tyco to:

1. Submit an analysis of the source(s) of groundwater infiltration into both the Salt Vault and the 8SS within 30 days of receipt of this letter.
2. Submit a work plan for reducing groundwater recharge in the Salt Vault and 8SS throughout the winter, resuming aggressive pumping by April 15, 2018, meeting the Target Elevation by May 31, 2018, and for the design and implementation of a permanent pumping system to maintain the Target Elevation in the 8SS and Salt Vault in perpetuity, with consideration for all contingency options necessary and information on the GWCTS. Tyco shall submit this plan within 30 days of receipt of this letter and implement it in accordance with EPA approval or modification.

If you have any questions, feel free to contact Conor Neal of my staff at (312) 886-7193, or by email at neal.conor@epa.gov.

Sincerely,



Jose G. Cisneros, Chief
Remediation and Reuse Branch
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Ecc: Kristin DuFresne, WDNR
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