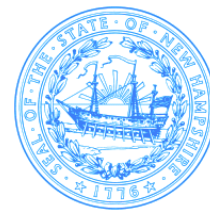




The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Robert R. Scott, Commissioner

EMAIL ONLY

April 28, 2022

Christopher S. Angier
Senior Environmental Project Manager
Saint-Gobain Performance Plastics
14 McCaffrey Street
Hoosick Falls, NY 12090

Subject: Merrimack – Saint-Gobain Performance Plastics, 701 Daniel Webster Highway
DES Site #199712055, Project #36430

Supplemental Site Investigation Report, prepared by Golder Associates, Inc. (Golder),
dated October 14, 2020

Errata – Supplemental Site Investigation Report, prepared by Golder, dated
February 10, 2021

Dear Christopher S. Angier:

The New Hampshire Department of Environmental Services (NHDES) has reviewed the above-referenced submittals prepared on behalf of Saint-Gobain Performance Plastics (SGPP) by Golder for SGPP's facility located at 701 Daniel Webster Highway in Merrimack (Facility). The Supplemental Site Investigation (SSI) Report summarizes site characterization activities completed by SGPP to evaluate the extent of impacts to on-site groundwater and soil, surface water, and stormwater from the release of per- and polyfluoroalkyl substances (PFAS) from the Facility and presents an updated conceptual site model (CSM).

Based on our review of these submittals, NHDES provides the following comments:

1. Golder states in Section 7.3 of the report that "the extent of [perfluorooctanoic acid (PFOA)] detections above the [Ambient Groundwater Quality Standards (AGQS)] in groundwater potentially associated with aerial deposition from the SGPP Facility is near the boundary of the Pre-GMZ." NHDES disagrees with this statement since hundreds of groundwater samples collected by SGPP and others show a definitive pattern of PFAS contamination above AGQS consistent with an air release pathway from the Facility that, in some cases, extends miles beyond the Pre-GMZ boundary.

SGPP substantially completed identification of the extent of AGQS exceedances within the Consent Decree boundary as per the *Work Plan for Sampling of Water Supply Wells and Provision of Alternate Water* submitted by Golder on September 30, 2019 and subsequent Addenda to the Work Plan. SGPP is required by state rules to provide potable water in cases where wells are contaminated above AGQS due to releases from their Facility. Pursuant to Env-Or 607, NHDES requests that SGPP apply for a Groundwater Management Permit (GMP) within 120 days that establishes a Groundwater Management Zone (GMZ) encompassing the area within the Consent Decree Outer Boundary where groundwater exceeds AGQS for PFAS due to SGPP's releases.

2. Golder presents a list of PFAS in Section 8.2.2.1 of the SSI Report attributed to aerial deposition. This list does not include perfluoroalkyl sulfonic acids (PFASs) beside perfluorooctane sulfonic acid (PFOS), such as perfluorohexane sulfonic acid (PFHxS), and sulfonamido substances such as N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA), as well as other PFAS that are likely related to aerial emissions and deposition from the Facility (e.g., 6:2 fluorotelomer sulfonic acid (FTSA)). While detections in environmental media suggest that the mass of these compounds emitted from the Facility is not as great as PFOA, these other PFAS were detected in samples from one or more media (air emissions, stormwater, groundwater, soil, etc.), suggesting they were emitted nonetheless and should be included in lists of compounds related to air emissions. Non-targeted PFAS analyses of a limited number of samples of various media from the site detected other PFAS that are not included with targeted analytical methods.
3. Golder concludes that *“PFAS detected in the mixing zone [of Dumpling Brook and the Merrimack River] does not result in a detectable increase in PFAS concentrations in Merrimack river surface water downstream of the mixing zone.”* NHDES disagrees with this conclusion because the average PFOA concentration at the furthest downstream monitoring location (SW-MERR-403W) is nearly twice the average concentration of PFOA in samples collected at the surface water monitoring station (SW-MERR-101W) located upstream of both the Outfall 001 and the confluence with Dumpling Brook. These data suggest that discharges from Outfall 001, which has significant PFAS concentrations, and/or Dumpling Brook contribute to a measurable increase in Merrimack River PFAS concentrations, at least on a periodic basis. For example, two surface water samples collected at SW-MERR-403W exceeded the current the AGQS/MCL of 12 nanograms per liter (ng/L) for PFOA (14 ng/L on August 28, 2018, and 22 ng/L on November 2, 2018).
4. Potential episodic exfiltration of PFAS-contaminated stormwater from leaks in the drainage structures and piping constitutes an ongoing discharge to groundwater.
5. Golder states in Section 7.7 that PFOS detected in monitoring wells MW-108 and MW-109 are not attributed to aerial deposition or advective flow from the Facility because there is a lower concentration of PFOS in upgradient wells between MW-108 and the Facility. Golder attributes the source of the PFOS to the Merrimack Fire Station located south of the Facility on Daniel Webster Highway. NHDES believes SGPP is the source, or a significant contributor to PFOS in these two wells for the following reasons:
 - a. PFOS was detected in shallow soil samples collected from the MW-108 and 109 borings which is consistent with aerial deposition of PFAS released from the Facility and not consistent with a release pathway from the fire station.
 - b. Compared to soil samples from MW-108 and 109, PFOS was detected at higher concentrations in soil samples from borings for wells MW-110, 111, and 112 (SSI Report Figure 5-2) and PFOS was detected at lower concentrations in groundwater at these wells compared to MW-108 and 109 (SSI Report Figures 5-6 A through C), suggesting the possibility that preferential leaching of aerially deposited PFOS from soil to groundwater is occurring in the vicinity of MW-108 and 109.
 - c. NHDES acknowledges groundwater elevation data is complex in the vicinity of surface water station SW-DB-106 and monitoring wells MW-108 and MW-109, potentially resulting in temporal variations in groundwater flow directions (SSI Report Figures 4-5,

4-7, and 4-9). There are currently no data on the potentiometric surface elevation in bedrock at this location. The concentrations of PFOS and chloride at MW-108 & 109 are similar to near-facility wells and dissolved oxygen is relatively low at MW-108 and 109, suggesting the possibility of groundwater flow from the vicinity of the Facility through undetected (as of yet) transmissive bedrock fractures following a deep flow path that discharges to the overburden beneath Dumping Brook. NHDES approved in an email dated April 20, 2021, transducer installation proposed by Golder to collect additional groundwater level data. If additional data collection is necessary to evaluate the presence of PFOS in these wells, consider investigative techniques such as: lysimeter sampling to evaluate soil leaching, bedrock monitoring well drilling near Dumping Brook, geophysical surveys to evaluate site geology at depth in the vicinity of MW-108 and 109, and stream bed piezometers.

6. Site Investigation work completed to-date included the evaluation of 21 Potential Release Areas (PRAs). Golder concludes in Section 8.2.1 that *“PFAS concentrations in soil and groundwater at and near the PRAs investigated as part of the SI were not elevated relative to conditions observed elsewhere in the vicinity of the Site. Therefore, it is concluded that the PRAs do not represent a source of PFAS to soil and/or groundwater that warrants further assessment.”*

NHDES believes PFAS were released to the ground or subsurface in some of the PRAs based on 3-dimensional spatial variations in PFAS composition of soil and groundwater samples. However, co-mingling of PFAS over time from the various releases, coupled with aerial deposition, result in widespread elevated concentrations of PFAS in both soil and groundwater in the vicinity of the site. Since remediation activities that address the primary regulated contaminant (PFOA) at the site are expected to address other PFAS that are present in environmental media, a comprehensive remedial strategy is needed that addresses PFAS from aerial deposition as well as from co-mingled localized releases.

Closing

NHDES generally concurs that the bulk of PFAS contamination at the site is largely, but not exclusively, due to air deposition from the facilities' air emissions. Although there is evidence that point-sources exist onsite (e.g., near the Hazardous Waste Storage Building and MW-04S, etc.), three rounds of site investigation activities conducted over the period of several years have not equivocally identified the distinct point sources of relatively elevated PFAS due, in part, to the co-mingling of the PFAS in soil and groundwater from the various sources onsite. Since the extent of elevated concentrations of PFAS in soil and groundwater is expansive across the site, an overall property-wide approach to remediation of contaminated media, potentially involving different remedial activities at different parts of the site, is necessary. Since a holistic approach is expected to address contamination from air deposition, as well as incidental localized releases, NHDES approves the recommendation to proceed with development of a Remedial Action Plan (RAP), while recognizing that some data gaps and questions remain. If data gaps become obstacles to the achievement of remedial goals, additional investigation may be necessary in the future.

Pursuant to Env-Or 606, NHDES requests submission of a RAP within 120 days of receipt (by SGPP's consultant) of unvalidated stormwater and surface water analytical data for sampling outlined in the work plan dated January 29, 2021 and approved by NHDES in a letter dated August 13, 2021. The RAP

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must include the SGPP parcel as well as all abutting properties and address AGQS violations, soil contamination, stormwater, and any ongoing releases (e.g., stormwater exfiltration, etc.). While there are no surface water standards currently in effect for PFAS, NHDES recommends inclusion of remedial actions to prevent contamination of surface water in the RAP. The plan should include recommendations for additional remedial investigations, if needed, and environmental data collection to evaluate RAP performance and eventual site closure. Current ongoing monitoring of environmental media should continue in accordance with approved work plans unless any requested changes are approved by NHDES.

Should you have questions regarding this letter, please contact me at NHDES' Waste Management Division.

Sincerely,



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