

Tyco Fire Products LP
1400 Pennview Parkway
Lansdale, Pennsylvania 19446



March 12, 2018

Mr. David Neste
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Schwano Avenue
Green Bay, Wisconsin 54313-6727
dave.neste@wisconsin.gov

RE: Additional Information Request – WDNR Letter Dated January 16, 2018
Tyco Fire Technology Center – PFAS; BRRTS Activity No. 02-38-580694

Dear Mr. Neste:

Tyco Fire Products LP (Tyco) is in receipt of the Wisconsin Department of Natural Resources' (WDNR) correspondence dated January 16, 2018. The letter requested the following of Tyco:

In addition, within 60 days, please provide a history of products containing PFASs include such information as the specific PFASs used on site, the products they were used in, and the timeframe they were on site. Include the identification, nature or quantity of all materials containing PFASs which have been used or were generated, stored, used or dispose of at or near 2700 Industrial Parkway. Please provide any other locations you may have manufactured or used the product containing PFAS in the City of Marinette or Town of Peshtigo area that may have contributed to the release identified.

Tyco has generated the enclosed informational summary in response to this request (Attachment A).

Tyco appreciates the WDNRs attention to this matter and looks forward to our continued cooperation. If you have any questions regarding this submission, please contact me at 215.393.0240 or richard.mator@jci.com.

Sincerely,

Richard Mator
Sr. EHS Manager – Environmental Remediation

cc: Roxanne Chronert – WDNR

Attachment A

Tyco Fire Products, LP Response to WDNR Letter dated January 16, 2018 March 12, 2018

Wisconsin DNR requested the following information from Tyco Fire Products, LP:

In addition, within 60 days, please provide a history of products containing PFASs include such information as the specific PFASs used on site, the products they were used in, and the timeframe they were on site. Include the identification, nature or quantity of all materials containing PFASs which have been used or were generated, stored, used or disposed of at or near 2700 Industrial Parkway. Please provide any other locations you may have manufactured or used the product containing PFAS in the City of Marinette or Town of Peshtigo area that may have contributed to the release identified.

Tyco Fire Products, LP (TFP) response is provided below¹. TFP emphasizes that the information provided in this response is based on the Company's reasonable and good faith searches conducted to date for responsive information. WDNR's request for information is broad, calling for information spanning different products, constituents, and activities that may date back a number of decades. TFP to date has not located comprehensive collections of information that are responsive to all parts of WDNR's requests, to the extent they may even exist. In particular, TFP has not located sufficient records to comprehensively track volumes of products against the various uses and timeframes, but will supplement this response as appropriate in the future. At this point, TFP has not provided detailed information on product names and formulations in order to protect proprietary, trade secret and/or confidential business information. This response is being provided in good faith and in the spirit of cooperation with WDNR. The Company reserves the right to amend this response as appropriate as it learns additional or different information.

1. FTC Uses:

The Ansul Fire Technology Center (FTC) is located at 2700 Industrial Parkway, Marinette Wisconsin. It is a fire suppressant training, testing, research, and development facility. The Site encompasses approximately 380 acres with an Outdoor Testing Area that currently consists of approximately 9 acres that is used in connection with the Fire Training School, Research and Development (R&D) and Quality testing activities. (see Figure 1 for an aerial view of the FTC). There are various buildings at the FTC where other R&D, Quality, and fire training activities are conducted. The remaining area of the Site is used for equipment manufacturing, warehousing, offices, classrooms, parking, or is undeveloped. Further detail on the activities at the FTC is provided below.

¹ This response is provided without any admission of liability of TFP or its officers, directors, employees, agents or representatives, or as a waiver of any rights, objections, privileges or defenses. TFP reserves the right to object to the use, in whole or in part, of any document or information submitted with this response in any proceeding for any purpose.

2. Background regarding Fluorosurfactants:

Fire fighting foam² consists of a number of materials that are blended together to make what is referred to as a foam concentrate or foam agent. One of the materials in the blend is a surfactant, and for certain formulations, that surfactant contains a small percentage of perfluorinated compounds (fluorosurfactant)³. Note that not all foams contain fluorosurfactants, but for the purposes of this document, references to foam concentrate or foam agent are specific to those foams that do contain fluorosurfactants.

Historically, certain foam concentrates contained fluorosurfactants consisting of compounds with eight (8) carbon chain lengths (referred to as “C8” compounds). The 3M Company was the manufacturer of one particular fluorosurfactant that is believed to have been a C8 product, and due to the manufacturing process it used, those fluorosurfactants could also contain perfluorooctane sulfonate (PFOS). The 3M Company reportedly phased out the production of those fluorosurfactants in 2002.

The other process used to manufacture C8 fluorosurfactants (telomer-based) did not produce PFOS, but those compounds could contain or form perfluorooctanoic acid (PFOA). In cooperation with EPA, the manufacturers of the C8 fluorosurfactants worked to develop shorter chain length C6 products. These shorter chain C6 substances cannot form PFOA, however, due to the potential for impurities in the raw materials, PFOA or precursors could be present in the product as an impurity at trace levels.

As a note, perfluorinated compounds, is a broad term that can encompass PFOA and PFOS and other substances, and are also referred to as PFAS, which stands for per- and polyfluoroalkyl substances.

3. History of Products at the FTC:

Based on information obtained to date, it appears that The Ansul Company (now known as TFP) may have first begun testing foam concentrate at the FTC in or around 1962. The initial foam concentrate was not manufactured by Ansul, but rather 3M, and was tested in combination with a dry chemical. Ansul became a distributor of the 3M-made foams and testing continued into the 1970s. Other manufacturer foams were also tested at the FTC at that time.

In approximately 1973, Ansul partnered with a chemical manufacturer to develop a telomer-based C8 foam concentrate. This product was introduced between 1973-1975 and around this time, Ansul would have terminated its distribution of the 3M foams. Some time between the mid-1990s - 2000, testing of some C6 fluorosurfactants began at the FTC.

From approximately 2006 – 2013 a mixture of C6 and C8 foams were tested at the FTC; and from approximately 2014 to present, testing was primarily of C6 foams. Note that some products referred to as C8 products may be predominantly C6-based.

² There are a variety of fire fighting foams, one of which is commonly referred to as AFFF, aqueous film-forming foam.

³ Certain foams may also contain fluoropolymers; references in this document to fluorosurfactants includes fluoropolymers.

In addition to testing of Ansul/TFP foams at the FTC, starting approximately in 1988, TFP began providing 3rd party laboratory scale testing services of foam agents for end users' and distributors' annual performance evaluation requirements.

Due to customer specifications and requirements, there are many variations of foam concentrate products that have contained different combinations of C6 and/or C8 fluorosurfactants. In general, those foam concentrates contain a small fraction of fluorosurfactants and the usage of the foam concentrate products range from 1% to 6% usage (for example, a 1% foam product means 1 part concentrate used in 99 parts water) when applied to a fire or in testing.

4. Foam Testing and Training Activities at FTC:

The activities associated with foam concentrate at the FTC began in the early 1960s and have varied over time. The site currently consists of an outdoor fire testing and training area, a hydraulics lab with an outdoor foam testing pad, and various buildings for fire testing, research, and development and quality testing activities. An overall site diagram showing the locations of the areas and buildings is provided in Figure 2. Discussion of the primary areas and buildings where foam-related testing and training activities have occurred is provided below.

Outdoor Testing/Training Area

The Outdoor Testing/Training Area (OTA) was constructed in approximately 1961 and has been used to conduct testing, demonstrations, and training on a range of fire suppressants (both dry chemical and foam-containing products).

The OTA has contained various concrete and clay pads and steel pans, some with "props" where a contained fire would be started and extinguished with the various products to test the performance of the fire suppression products. The testing of foam products began in the early 1960s.

Training and demonstration activities also occur at the OTA. The FTC hosts fire schools and foam schools during the summer months to train employees and customers on fire suppression techniques. Based on current practices, roughly 10-20 fire schools are scheduled per year with one foam demonstration per school. For the foam schools, approximately two are scheduled per year with two foam demonstrations per school. It is not clear when these schools formally began, but based on information gathered to date, the fire schools appear to have been occurring prior to the 1980s, and it is presently believed that the foam schools may have started at the FTC after the late 1990s.

The site also conducts additional schools with demonstrations and training for specific applications. Based on current practices, approximately 3-4 schools are conducted per year with two demonstrations per school. It is not clear at this time when these schools formally began but based on information gathered to date it is believed to have started in the late 1990s.

It is believed that there was another outdoor testing area that was referred to as the Marine testing area. This was indicated as being located between Buildings 110 and 115, and that it had

been dismantled. After a reasonable and good faith inquiry, we have been unable to locate sufficient information to document time period and uses.

Hydraulics Laboratory

The Hydraulics Laboratory (Bldg 105) was constructed in approximately 1985. It consists of a building with various tanks, pumps, and nozzles where foam concentrate is mixed with water and used to conduct performance testing of foam systems (proportioning and hardware). It has an outdoor foam monitor pad which as designed is sloped so that drainage of water/foam mixture is directed back into the building into a collection system.

Engineering Laboratory

The Engineering Laboratory (Bldg 102) was constructed in approximately 1962, with various additions over time. A range of laboratory scale research, development, and quality control activities on foam products have occurred inside this building including laboratory scale formulation, fire testing, physical and chemical parameter testing, and equipment testing and calibration. The products tested are primarily TFP products, although in approximately 1988, TFP began providing 3rd party laboratory scale testing services for its foam products as well as foam agents manufactured by others.

Fire Test Houses

The first Fire Test House (Bldg 107) was constructed in approximately 1967 and has been used for indoor fire testing, including, but not exclusively foam and foam sprinkler testing. A second Fire Test House (Bldg 127) was added in approximately 2016 for the same activities.

Cold Storage

The Cold Storage Building (Bldg 115) was constructed in approximately 1976 and has been used for foam testing activities, including test enclosure extinguishment testing and nozzle testing.

Center of Excellence

The Center of Excellence (Bldg 130) was constructed in approximately 2011 and contains a research laboratory and an instrument laboratory which have been used for foam products and fluorosurfactants. It also is used for a variety of non-foam activities (office areas, metallurgy laboratory, prototype manufacturing of equipment, small scale equipment assembly, etc.)

Warehouse

The Warehouse (Bldg 114) was constructed in approximately 1976 and is used to store foam fluorosurfactants and foam products.

The OTA and buildings noted above have gone through various improvements, expansions, and revisions over time, including the addition of concrete floors, oil/water separators, sewer line connections, and wastewater collection points.

5. Other locations in Marinette and Peshtigo:

There are other locations in the City of Marinette and the Peshtigo area⁴ where activities related to foam products have occurred or that are used for the storage of foam products.

The Stanton Street facility is located at 1 Stanton Street, Marinette. TFP conducts blending operations in its main production building to make foam concentrate products. There are also facilities where various quality control activities are conducted and where foam surfactants and products may be stored. ChemDesign, a chemical manufacturing facility, leases various buildings on the Stanton Street premises and manufactures for TFP the fluorosurfactants currently used by TFP in its foam concentrate in certain of its manufacturing buildings on site.

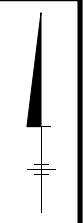
TFP rents a warehouse at 150 Pine Street in the City of Peshtigo, where it conducts indoor foam proportioning of high expansion foam (non-fluorinated) and foam products for research and development purposes.

TFP also rents a warehouse at 3100 Woleske Rd., Marinette, that TFP uses at times to store containers of foam surfactants and foam concentrate.

The location of these facilities are shown on attached Figure 3.

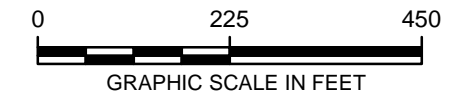
Due to the location of these facilities or the type of activity conducted, none are expected to have contributed to the presence of PFAS in groundwater that is currently being studied in the Marinette and Peshtigo areas.

⁴ The letter requested information regarding locations the Town of Peshtigo, however, we included the City of Peshtigo for completeness of response.



NOTES:

- 1. IMAGERY SOURCE: 4/27/2016, DIGITALGLOBE, VIVID - USA.



TYCO FIRE PRODUCTS, LP
MARINETTE, WISCONSIN

FACILITY AERIAL VIEW



Figure 2

