July 29, 2020 Project Reference #19373

Mr. Dennis Schwind
Pentair Flow Technologies
293 S Wright Street
Delevan, Wisconsin 53115

Re: Pentair Facility PFAS Assessment
293 S. Wright Street, Delavan, Wisconsin

Dear Mr. Schwind:

In February 2020, the Wisconsin Department of Natural Resources (WDNR) requested that Pentair Flow Technologies (Pentair) evaluate historical practices in the Delavan plant (formerly Sta-Rite) to determine if metal plating operations or other operations associated with the use of per- and polyfluoroalkyl substances (PFAS) may have occurred on-site that could have caused a release to the environment. This request was followed by an April 2020 letter[1] from the WDNR. Accordingly, Sigma has reviewed documents available through Pentair, local archives, and government records to determine if PFAS-containing products may have been used at the site.

Based on a review of PFAS applications listed by the Interstate Technology Regulatory Council (ITRC), Sigma focused on the following processes as possible sources at the site:

- Components in plastics/polymers produced at the facility. Fluoropolymers were sometimes used to produce gaskets, seals, and other components.
- Insulating and lubricating oil additives. PFAS were sometimes added to oils to prevent evaporation or fires.
- Coatings. PFAS were sometimes added to paints and other coatings.
- Electroplating. PFAS were used in the metal plating industry as a fume suppressant and surfactant.
- General chemical usage. PFAS were ingredients in a variety of compounds, including thread sealant.

Sigma also reviewed available records related to fires, to assess the possibility that PFAS-containing firefighting foams may have been used on-site.

In short, manufacturing of PFAS did not occur at the site, nor was evidence discovered that PFAS-containing chemicals were a major component of any Sta-Rite/Pentair operations. Plumbers' tape, "pipe dope" (thread sealant), and "joint sticks" (thread sealant sticks), which commonly contained Teflon (PTFE, a fluoropolymer), have been used in the assembly process for threaded pipe components; no other PFAS-containing substances or compounds were

[1] *PFAS Sampling Requirements, Delavan Municipal Well No. 4 Superfund Site, 293 Wright Street, Delavan, WI 53115, BRRTS # 02-65-529579, FID # 265091640* by WDNR (dated April 17, 2020)

definitively identified as being used at the site. These thread sealant materials are a solid (plumbers' tape and joint sticks) or a semi-solid (pipe dope) and do not represent a significant risk as a PFAS release to the subsurface as they were used within buildings with concrete floors, and the materials themselves were incorporated within the threaded pipe connections. Therefore, Sigma and Pentair do not interpret the limited possible PFAS content of these pipe sealant materials as warranting a subsurface investigation.

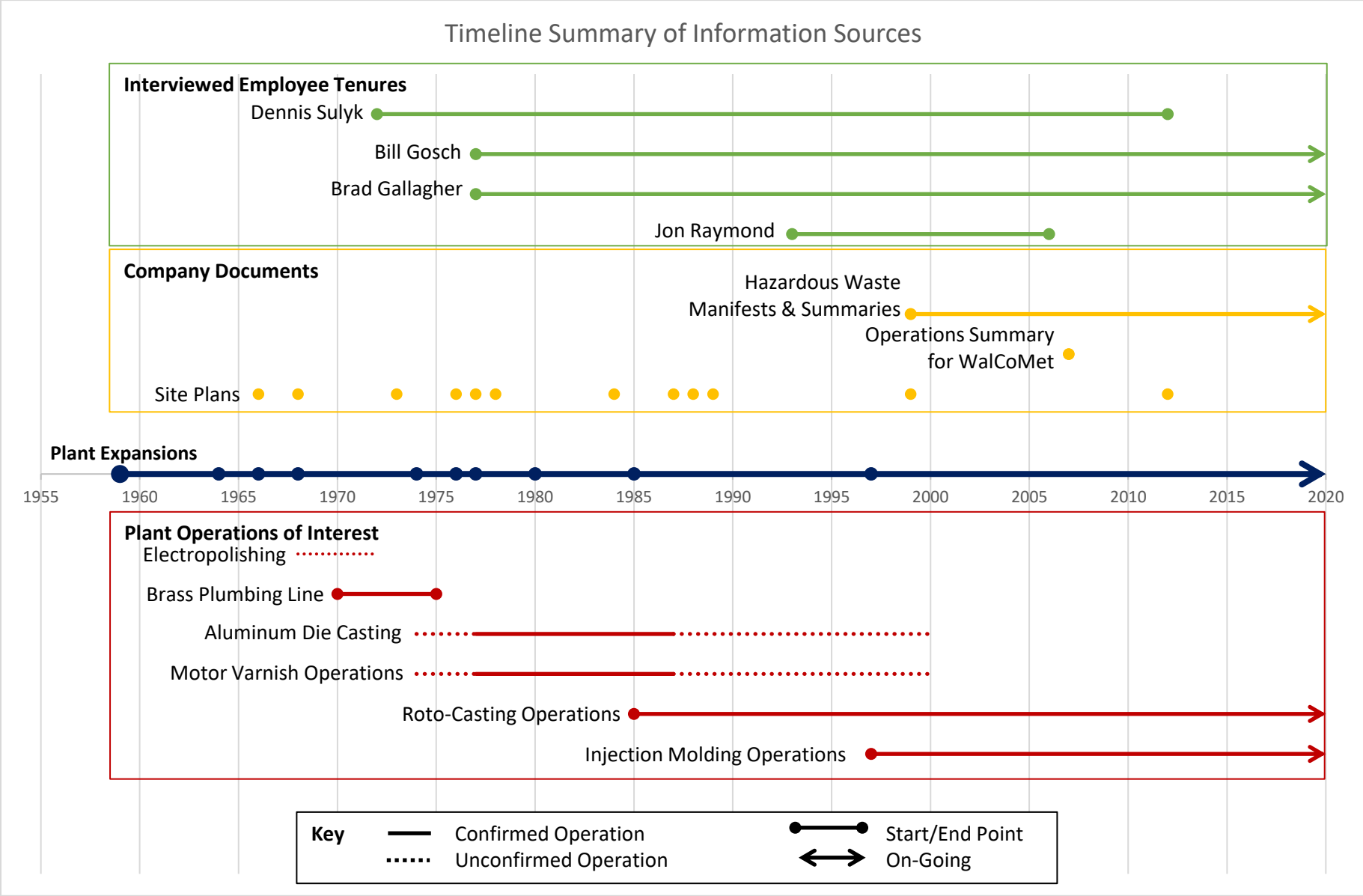
Information Sources

The information in this report was collected through local government records, historical records, company records, interviews, and a June 24, 2020 walk-through of the Pentair facility. Together, these information sources provide a detailed impression of site operations back to the 1970s. Limited information is available for the period from the opening of the plant in 1958/1959 to the 1970s.

Sigma requested records from the following sources:

- City of Delavan Inspection Department: Sigma reviewed available records, which date back to the 1970s.
- City of Delavan Fire Department: No emergency response records were available.
- Sanborn Fire Insurance Maps: According to Environmental Data Resources, Inc., the subject site is outside the area of map coverage.
- Aram Public Library: News articles and city directories provided limited information on historical site operations.
- Delavan Historical Society: Newspaper clippings and company newsletters from throughout the plant history were reviewed.
- Walworth County Historical Society: No records for the plant were available.
- Whitewater Area Research Center: No records for the plant were available.
- Regulatory Records: Sigma reviewed WDNR and Environmental Protection Agency (EPA) records for the subject site.
- Company Records: Sigma reviewed waste manifests and associated summaries, safety data sheets, and site plans made available by Pentair.

Additionally, Mairead Rauch interviewed four current and former Pentair employees, with site knowledge covering the period between 1972 and the present day. A copy of the interview questionnaire is included as **Appendix A**. Findings from each information source described above are summarized in **Appendix B**. An overview of timelines for facility operations of interest, interviewed employee tenures, and company documents made available for review is illustrated on the following page for reference.


Timeline Summary of Information Sources
Interviewed Employee Tenures
Dennis Sulyk
Bill Gosch
Brad Gallagher
Jon Raymond
Company Documents
Hazardous Waste
Manifests & Summaries
Operations Summary
for WalCoMet
Site Plans
Plant Expansions
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Plant Operations of Interest
Electropolishing
Brass Plumbing Line
Aluminum Die Casting
Motor Varnish Operations
Roto-Casting Operations
Injection Molding Operations
Key
Confirmed Operation
Unconfirmed Operation
Start/End Point
On-Going

Potential Source Operations

Plastic and Polymer Components

Based on interviews with Pentair employees, plastic/polymer production at the Pentair facility was limited to rotational casting and injection molding operations. Historical news articles indicate that the rotational casting operations originally used liquid vinyl. No records indicating a shift to fluoropolymers have been identified.

Several employees confirmed that a sprayed mold release agent was used to prepare injection molding equipment each time the equipment was used. None of the employees was able to identify the name of the mold release agent; however, one of the employees recalled possibly using a "Teflon spray" at one point. He did not recall further details. It is unclear whether the spray contained Teflon or if this was a reference to non-stick sprays in general. According to the employees, Sta-Rite/Pentair changed chemicals at least once. Injection molding release agents currently on the market include fluorocarbon-based products, so it is *possible* that Pentair has used a PFAS-containing mold release spray.

Pentair employees historically punctured used spray cans, pouring the remaining contents into drums for disposal as hazardous waste. Manifest summaries from 1999 through 2019 indicate that around 100 to 200 pounds of waste aerosol is produced each month.

Sigma reviewed the Safety Data Sheet for the mold release agent currently in use. It contains 1,1-difluoroethane, dimethyl ether, light hydrotreated distillates, and ethymethylsilioxane. The current mold release agent does not contain likely PFAS.

Based on the available information, a PFAS-containing mold release agent *may* have been used at some time in the past for injection molding and/or rotational molding operations. Overspray and used spray cans from these operations *may* have been a historical source of de minimis PFAS contamination. Site plans indicate that both operations have been historically sited in both the north and south buildings.

Insulating or Lubricating Oil Additives

In the 1970s and 1980s, motors for submersible pumps were assembled on-site. Employees familiar with the motor assembly operation recall using food-grade mineral oil. These employees did not recall any additives in the oil. This operation is not considered a likely source of PFAS.

Coatings

Sigma reviewed Safety Data Sheets for chemicals currently in use. The SDSs do not indicate that PFAS-containing chemicals are currently in use at the facility.

According to the employees interviewed, coating operations at the facility were generally limited to spray paints, powder coatings, and touchup paint, as varnish dips associated with motor winding. None of the employees recalled using any stain-resistant or water-repellant coatings. A review of motor winding varnishes currently on the market did not indicate that PFAS-containing varnishes are common. These operations are not considered a likely source of PFAS.

Electroplating

None of the workers interviewed recalled any metal plating operations occurring at the plant, nor did any workers recall the use of acid baths. Two former vendors were identified as providing plating services for Pentair:

- All three employees who worked at Pentair during the 1970s stated that, in the 1970s and 1980s, parts were sent to Riverside Plating in Janesville for plating. The Riverside Plating Co., located at 1728 N. Washington Street, has since ended operations.
- According to Mr. Sulyk, in the early to mid-1970s, plating for Sta-Rite's dairy division was conducted by an electroplater located on Centralia Street in Elkhorn. He did not recall the name of the vendor, which has since gone out of business.

No site plans or other documents provided by Pentair referenced electroplating. (Within the electroplating industry, the primary driver of PFAS usage has been mist suppression for chrome plating.)

Electropolishing

A site plan for the south building from the time of its construction in 1968 includes an approximately 900 square-foot room labeled "electro polish, degrease, and tumble." It should be noted that this site plan depicted planned operations; however, it has not been confirmed whether electropolishing equipment was actually installed. Site plans produced in the 1970s and 1980s do not depict the south building in detail. A site plan from 1999 depicts the possible electropolishing area with mold storage and other operations related to rotational molding.

Sigma has not identified information tying PFAS usage to electropolishing operations. Electropolishing primarily uses sulfuric and phosphoric acids (not chromic acid) to remove material from a metal work piece and smooth the surface roughness.

Based on the available information, electropolishing operations may have occurred in the south building from 1968 into the early 1970s; however, it is unlikely that PFAS was used as part of this operation.

General Chemical Usage

Employees interviewed recalled using typical maintenance chemicals, such as WD-40, Spic and Span, Seal Saver, and various silicone sprays. Additionally, a two-step cleaner and rust preventative is used for maintenance of injection molding equipment. A graphite-based penetrating oil was briefly used. Methyl ethyl ketone, freon, trichloroethylene (TCE), and paint thinner have been used for parts washing and as solvents. None of the employees recalled using PFAS-containing chemicals, nor were PFAS-containing chemicals identified in available SDSs.

Several employees interviewed recalled using Teflon tape/plumbers' tape in the assembly process. Additionally, one employee stated that "pipe dope" (thread sealant) was used in the assembly process. The employee did not recall the brand of thread sealant used. Another employee recalled using "joint sticks" (thread sealant sticks) before they were generally phased out around 2000. These products were all purchased from another vendor and were not produced on-site. Many thread sealants currently on the market contain PTFE, a fluoropolymer.

Based on the available information, thread sealant products containing PTFE *may* have been used at the facility, presumably in accordance with manufacturers' recommendations for their intended purposes.

Fires

The Delavan Fire Department did not have records of any fires at the Pentair facility. No news articles or company records describing fires prior to 2000 were identified. However, Mr. Sulyk, who oversaw facility maintenance, recalled three fires during his time at Pentair:

- Around 2007 to 2010, a minor fire occurred on a stack for the powder coating area.
- In the late 2000s, a small fire occurred in the tank plant.
- In 2010 and 2011, a dumpster caught fire several times due to a self-igniting waste product.

He did not recall whether firefighting foams were used in these incidents. He stated that there was no major cleanup, indicating that water sprays were unlikely to have been used. He was unsure if the fire department used a fire suppressant, or if they just monitored the situation to confirm that the fires had burned themselves out. The other employees did not recall any additional fires.

The site visit included a visual inspection of the dumpster fire area. The roll-off dumpster was stored on an outdoor concrete pad, which has several cracks in it. Typical contents of the dumpster consist of five waste streams:

- Waste paint filters and debris;
- Waste paint slag;
- Forklift wash bay sludge, which is dewatered before being added to the dumpster;
- Vibratory refinisher sludge, which is dewatered before being added to the dumpster; and
- Machining filters.

No records from Pentair or the Delavan Fire Department describe the fire department response. According to Dennis Schwind, who was involved in Pentair's efforts to prevent additional fires, the fires were limited to the interior of the dumpster, which is lined. During the fire department response, he believes that the firefighters sprayed a foam fire suppressant directly into the dumpster. He did not recall the dumpster dripping after the fires.

It is *possible* that a PFAS-containing firefighting foam was used to extinguish several dumpster fires in 2010 and 2011. It is believed that foam used to extinguish the fire was contained to the lined dumpster.

Potential Release Points
The potential source operations inside the buildings as reviewed above suggest a low likelihood of PFAS use at the site. However, in the interest of further evaluating the potential release points into the environment *if* PFAS residuals from thread sealants, and possible mold release agents, were deposited on equipment or the building floor, the following evaluation is provided.

Floor Drains
Based on employee statements, the majority of floor drains in the Pentair facility were sealed by 1972, and it was a common practice to place machinery over the former drains. According to Dennis Schwind, active floor drains in the tank plant and rotocast areas are routed to an aboveground 5,000-gallon oil/water separator located outside the eastern corner of the north building. Wastewater from this separator is then discharged to the sanitary sewer.

Traps associated with inactive drains were left in place. Additionally, connections to manholes within the plant were left intact. Mr. Gosch and Mr. Gallagher stated that, during major rain events, several manholes in the plant have been lifted up by the rainwater or have "jetted" water through openings in the manholes.

The paint storage room on the north end of the main building has a trench drain which historically included an overflow pipe terminating directly outside the building. According to Mr. Schwind, the purpose of the overflow pipe was to prevent flooding if the room's sprinkler system was activated. The overflow pipe has since been capped and sealed.

Pits
Based on employee interviews, mop water and related wastewaters were historically stored in a pit near the southern corner of the north building. Sludge would accumulate on the bottom of the pit, while decant water was discharged to the sanitary sewer. When sufficient sludge accumulated, a contractor would pump out the sludge and take it off-site for disposal. This system was upgraded to the current design by 2000.

The current wastewater system was observed during the walkthrough. Mop water is poured into an oil/water separator in the southern section of the plant. Water from the separator is pumped to a 1,000-gallon aboveground storage tank, then passes through an evaporator. The resultant sludge is stored in a 4,000-gallon aboveground storage tank until it is shipped. According to Mr. Schwind, the original evaporator was installed in 2000 and replaced in 2013. *If PFAS were utilized in the north building, this is a possible release point.*

Documents from the Delavan Municipal Well #4 National Priorities List site identify a former sump on the north end of the south building as a probable source for historical volatile organic compound (VOC) releases. *If PFAS were historically utilized in the south building, this is a possible release point.*

Findings
While this assessment has not definitively confirmed the historical use of PFAS at the Pentair facility, two operations which *may* have utilized PFAS were identified:

- Pentair uses thread sealant products during pump assembly. PTFE, a fluoropolymer, is a common ingredient in thread sealant products. It is likely that PTFE has been used at the facility within these thread sealant products.

- Injection molding operations have been ongoing in at least one of the facility buildings since 1997. A mold release agent is sprayed into molds each time they are used. While the current mold release agent does not appear to contain PFAS, Pentair has changed products multiple times, and *may* have used a PFAS-containing product at one time.

Additionally, a series of fires inside of a dumpster south of the north building may have been extinguished using a PFAS-containing firefighting foam. It is believed that foam used to extinguish the fire was contained to the lined dumpster.

Conclusions
While Sigma has not confirmed the historical use of PFAS at the Pentair facility, three minor historical operations/incidents have been identified which *may* have involved PFAS. Manufacturing of PFAS did not occur at the site, nor was evidence discovered that PFAS-containing chemicals were a major component of Sta-Rite/Pentair operations. The three possible historical operations/sources appear to be relatively minor in comparison to other chemical usage on-site, but it is *possible* that trace amounts of PFAS-containing products may have been used and/or released at the site. However, Sigma and Pentair do not interpret the accumulated information sufficient to warrant subsurface investigation of *potential* PFAS de minimus releases on interior building equipment or paved surfaces.

Please contact us at 414/643-4200 if you have any questions.

Sincerely,

THE SIGMA GROUP, INC.

Mairead Rauch, E.I.T.
Staff Engineer

Adam J. Roder, P.E., P.G.
Senior Engineer

Jonathan L. Mader
Project Engineer

Enclosures

Figure 1

Site Plan Map

LEGEND

= Building Outline with Year of Construction

= Approx. Outline of Process Area

~1980

~1990

1985

~1990

~1979

1976

1977

Rotocast

1977

1997

1964

Injection Molding

Hist. Injection Molding

1974

1958-1959

1966

1977

1997

Wastewater Collection

~2000

2010-2011 Dumpster Fires

1980

Hist. Sump Source Area

Hist. Electro Polishing

Hist. Injection Molding

Hist. Rotocast

1968

N

0 120 ft. 240 ft.

GRAPHIC SCALE

Project : 19373 | Directory: CAD | Filename: 19373_Plant_Layout.pdf | Created By: MSR | Date: 7/16/2020

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Single Source. Sound Solutions.

SITE PLAN MAP

PENTAIR

293 S. WRIGHT ST, DELAVAN, WI

FIGURE

1

Appendix A – Interview Questionnaire

General Questions

1. Name

2. Period of employment at Sta-Rite/Pentair

3. Role(s) at Sta-Rite/Pentair (including work tasks)

4. What were the on-site processes, to your knowledge (such as machining, welding, etc.)?

5. May we use your name (no other personal information) in a letter to the WDNR about past industrial operations at the site?

Metal Working

1. Are you aware of any metal plating operations which occurred at the plant at any point?

2. Are you aware of any (heated) acid baths which were used at the plant at any point?

3. Do you remember where plated metal components (such as chrome-plated parts) were sourced? If so, from where?

4. Please show approximate location of any on-site metal operations on a map.

Chemical Usage

1. Do you recall ever seeing any of the following chemicals on-site?
    a. PFOS/PFOA/PFA
    b. Teflon
    c. Substances with fluorine in the name
    d. Stain resistant / water resistant sprays

2. Were gaskets or other plastic components made on-site?
    a. If so, what sorts of components were made on-site?
    b. Do you know what kind of plastic was used?

3. Were you involved in injection molding operations or other processes involving heating or forming plastics?
    a. What was the process for using the injection molding machinery?
    b. Do you remember the substance used as a mold release?

4. Were any special coatings used to protect pump motors from water?
    a. Do you know what sort of coatings were used? Was PTFE (polytetrafluoroethylene) or PFA ever used?

5. Do you know what kind of lubricant was used in the pump motors?
    a. Were there any special additives?

6. Was thread seal tape/plumber's tape/Teflon tape used on-site?
    a. Was it produced on-site?

7. Are you aware of any historical on-site pits, sumps, floor drains, dump areas, etc. where these types of chemicals, if used, may have been disposed?

8. Please show approximate location of any on-site chemical storage, usage, or disposal operations on a map.

Fires

1. Do you recall any fires which occurred at the plant at any point?
    a. Please describe the nature of the fire, including size, location, source.
    b. Was a foam-based fire suppressant used?

Appendix B – Summary of Findings by Information Source

City of Delavan Inspection Records
On March 5, 2020, Sigma reviewed available inspection records at the City of Delavan municipal building. Records dated from the 1970s through to the present day. Pertinent records included the following:

- A December 5, 1994 letter from the Walworth County Metropolitan Sewerage District (WalCoMet) advising Sta-Rite on actions needed to receive a wastewater discharge permit. Site operations described in the letter included metal cutting and pressure washing/stripping of tanks. While WalCoMet provided several chemical hygiene directives, none of them indicated that electroplating baths were present on the site.
- A building layout plan from 1999 showed site operations including machining, plastic molding and curing, welding, and assembly. The layout plan did not indicate the presence of electroplating operations.

City of Delavan Fire Department
On May 29, 2020, Sigma requested available fire department records related to fires or chemical releases at the Pentair site. On June 23, 2020, Jennifer O'Neill, Fire Inspector with the City of Delevan Fire Department reported that there were no records on file meeting those criteria.

Sanborn Fire Insurance Maps
Sigma contacted EDR, which holds the copyright to Sanborn Fire Insurance Maps, to inquire if coverage extended to the Pentair plant. EDR reported that coverage does not include the plant.

Aram Public Library
Sigma reviewed available records in the local history section of the Aram Public Library in Delavan. Records were limited to news articles and select city directories (1963 and 1965). No records indicating the presence of electroplating operations at the Pentair facility were identified.

Delavan Historical Society
On March 5, 2020, Sigma reviewed available documents provided by the Delavan Historical Society. The collection for the Pentair facility consisted of loose photographs, articles from the Delavan Enterprise newspaper, and Sta-Rite newsletters. News articles covered the period between 1935 and the early 2000s. According to the news articles, Sta-Rite opened its Wright Street facility in 1959. In general, the articles indicated that site operations at the Sta-Rite facility included machining, injection molding, and assembly. No reference to on-site plating was identified. News articles included the following:

- A 7/30/1959 article in the Delavan Enterprise celebrating the opening of the Sta-Rite plant on Wright Street. Newspaper ads celebrating the new plant stated that the Sta-Rite plant was supplied with castings and stampings by numerous foundries.
- A 12/7/1961 article in the Delavan Enterprise included the complete text of a speech given by H.S. Lauterbach the president of Sta-Rite to the Milwaukee Investment Analysis Association. Mr. Lauterbach stated that "during the war we machined many

parts". Mr. Lauterbach also stated that Sta-Rite's new plastic swimming pool pumps were composed of DuPont's Delrin and other plastics.

- A 12/19/1963 article in the Delavan Enterprise announcing a plant addition. Planned operations in the addition included manufacturing of electric submersible motors and the assembly of submersible pumps.
- A 12/9/1965 article in the Delavan Enterprise announcing a plant addition. Planned operations in the addition included sales and administration, as well as an engineering laboratory.
- A January 1970 article in the Sta-Rite newsletter celebrated one of Sta-Rite's first employees, describing his tasks in "the early days" as machining castings and crating and shipping pumps.
- A 1/15/1970 article in the Delavan Enterprise noted that Sta-Rite had purchased an Abingdon, IL manufacturer of brass plumbing fixtures the previous year.
- A January 1973 article in the Sta-Rite newsletter describing Sta-Rite's printing services stated that the company's printing services department had printed more than 12 million sheets of paper in 1972.
- A 7/19/1973 article in the Delavan Enterprise stated that a planned expansion was intended to increase space for the submersible pump manufacturing.
- A 11/4/1975 article in the Delavan Enterprise noted that Sta-Rite had sold off its brass plumbing-ware line, based in Abingdon, IL, the previous year.
- An article (date and newspaper are missing) stated that the 1976 addition to the Sa-Rite plant was an expansion for the tank manufacturing department.
- A 1977 article in the Sta-Rite newsletter stated that Sta-Rite had expanded the plant to provide additional space to receive incoming castings. The same article noted that an expansion of the motor room would improve safety of the "varnish operation." The same newsletter noted a 900 square foot casting area renovation.
- A 10/4/1984 article in the Delavan Enterprise described an open house at the Sta-Rite factory. A set of new lathes were highlighted.
- A 1985 Sta-Rite newsletter stated that, beginning around 1980, Sta-Rite manufactured vinyl bags by heating, molding, and curing liquid vinyl. By 1985, this process had been consolidated at the Delavan plant.
- A 1/15/1997 article in the Delavan Enterprise announced Sta-Rite's plan to consolidate operations from its Waterford plant in the Delavan plant. Prior to 1997, the Waterford plant had focused on plastic injection molding operations.

Walworth County Historical Society

On March 6, 2020, Sigma requested available records for the Pentair facility from the Walworth County Historical Society. The Historical Society reported that it does not have records for the Pentair facility.

Whitewater Area Research Center

On March 20, 2020, Sigma contacted the Whitewater Area Research Center, a collaboration of the University of Wisconsin and the Wisconsin Historical Society, which maintains archival information for Walworth, Rock and Jefferson Counties. The archivist stated that the local collection does not include records for the Sta-Rite company or its employees. A search of local newspapers did not indicate that electroplating occurred at the Sta-Rite Delavan plant.

WDNR Records
Sigma reviewed Air Emission Summaries for the facility, which extend back to 1995. Plating operations were not included in the listing of air pollutant emitting processes.

Sigma reviewed available RCRA Generation information for the facility, which is a registered Small Quantity Generator (generates between 100 and 1,000 kg of hazardous waste in a calendar month). The 2007 waste detail report did not include any acid wastes or other wastes typically associated with plating operations. A chromium-containing sludge listed as waste is consistent with machining operations.

Sigma reviewed available records for the Delavan Municipal Well No. 4 Site, a National Priority List and open Environmental Repair Program site. According to the site history in the Record of Decision, (ROD), the City of Delavan municipal well located on the Pentair property was tested in 1982 as part of a random public well sampling program. Trichloroethylene (TCE), tetrachloroethylene (PCE), and 1,1,1-trichloroethane (TCA) were detected at concentrations greater then suggested levels for water quality standards. A subsequent investigation identified a former solvent disposal sump directly north of the south building, which collected spills and discharges from floor drains prior to discharge to the storm sewer, as a possible source of the groundwater contamination. Additionally, spent solvent releases onto cast iron chips and liquids released into a drainage swale were considered possible sources. Remedial actions are ongoing.

Pentair Company Records
Site operations at the Pentair facility include machining, injection molding, and painting. According to the Interstate Technology Regulatory Council, PFAS-containing mold release coatings are a source of PFAS releases to the environment. Pentair has provided Sigma with the safety data sheets (SDSs) for substances used in injection molding operations. None of the SDSs list PFAS or likely PFAS ingredients. During a walkthrough of the Pentair facility, Sigma confirmed that the mold release agent presently in use does not appear to contain PFAS.

Sigma reviewed site plans provided by Pentair, which included the following:

- A 1968 Floor Plan and Room Schedule for the south building. Based on the nature of the drawings, these plans were intended to guide the construction of the building. General equipment locations are labeled, including an approximately 900 square foot room labeled “electro polish, degrease, and tumble.”
- A 1973 site plan depicting grading, construction, and plumbing plans for a planned expansion of the facility. This plan did not depict operations.
- A 1976 site plan for the main building depicting general operations.
- A 1977 site plan depicting grading, construction, and plumbing plans for a planned expansion of the facility. A detail image depicted the planned layout of the motor room following the expansion.
- A 1978 site plan depicting the planned construction of the paint room. This plan did not depict operations.
- A 1984 Sound Survey for the north building. This plan depicted site operations in detail.
- A 1987 Sound Survey for the north building. This plan depicted site operations in detail.

- A 1989 site plan for the main plant. This plan depicted limited operations in the main building.
- A 1999 site plan for the Pentair campus. This plan depicts plumbing and limited storage/treatment equipment, but not operations.

Sigma reviewed available manifests and associated summaries dating back to 1999. Waste mold release spray was mixed with other waste aerosols through 2009, with a typical generation rate of between 200 and 600 pounds per year. Beginning in 2010, waste mold release chemicals were mixed with waste paint related materials, which have a typical generation rate of between 800 and 2,000 pounds per year.

Employee Interviews and Site Visit
Mairead Rauch, a staff engineer with Sigma, interviewed four current and former employees of Pentair with knowledge of historical operations:

- Mr. Dennis Sulyk, a retired maintenance manager who oversaw industrial engineering, maintenance, and shop floor activities, was interviewed via phone on June 22, 2020. Mr. Sulyk also briefly worked in the purchasing department (less than one year). He worked at the Pentair facility during the period between 1972 and 2012.
- Mr. Jon Raymond, a retired environmental engineer who oversaw environmental compliance activities, was interviewed via phone on June 22, 2020. Mr. Raymond worked at the Pentair facility during the period between 1993 and 2006.
- Mr. Brad Gallagher, a current employee who worked in the tank plant for several months, pump assembly for around 18 years, building services for around 12 to 13 years, and maintenance for around 13 years, was interviewed in person on June 24, 2020. Mr. Gallagher began working at the Pentair facility in 1977.
- Mr. Bill Gosch, a current employee who has worked in the stockroom, material handling, trucking, and quality, was interviewed in person on June 24, 2020. Mr. Gosch, who is presently a forklift driver in the tank plant, has worked at the Pentair facility since 1977.

Each employee was asked a series of questions related to the plant history and operations, including metal working and injection molding operations, chemical usage, chemical storage areas, drains and sumps, and fires. Mr. Gosch and Mr. Gallagher were interviewed together.

On June 24, 2020, Mairead Rauch completed a walkthrough of the plant with Mr. Dennis Schwind, with a focus on historical operations and drainage systems.

General Operations
Based on the interviews, plant operations since 1972 have included the following:

- Machining, including CNC, auto chuckers, and drill presses.
- Parts washing
- Welding
- Assembly
- Injection and rotational molding using powder and liquid resins
- Fiber winding of composite fiberglass epoxy to make tanks
- “Dip and bake” of tanks
- Water testing of pumps

- Submersible motor assembly
- Spray painting
- Powder coating
- Aluminum die casting
- "Dip and bake" varnishing of parts
- Motor winding
- Degreasing of parts with TCE (historical practice in the south building)
- Assembly of fiber filters (fiber sheets manufactured off-site)
- Packaging/warehousing

Potential for Plating Operations
None of the workers interviewed recalled any metal plating operations occurring at the plant, nor did any workers recall the use of acid baths. Two former vendors were identified as providing plating services for Pentair:

- All three employees who worked at Pentair during the 1970s stated that, in the 1970s and 1980s, parts were sent to Riverside Plating in Janesville for plating. The Riverside Plating Co., located at 1728 N. Washington Street, has since ended operations.
- According to Mr. Sulyk, in the early to mid-1970s, plating for Sta-Rite's dairy division was conducted by an electroplater located on Centralia Street in Elkhorn. He did not recall the name of the vendor, which has since gone out of business.

General metal-working operations, such as machining, generally occurred in the southern section of the main building.

Chemical Usage
None of the employees interviewed were familiar with PFAS, such as PFOS or PFOA, and none recalled usage of substances containing these chemicals. Additionally, none of the employees recalled using Teflon, substances with fluorine in the name, or stain resistant/water resistant sprays. One employee recalled using a "Teflon spray" in the injection molding process; however, it is unclear if this was a general reference to non-stick sprays or whether a PFAS-containing spray was used in the injection molding process.

Employees recalled using typical maintenance chemicals, such as WD-40, Spic and Span, Seal Saver, and various silicone sprays. Additionally, a two-step cleaner and rust preventative is used for maintenance of injection molding equipment. A graphite penetrating oil was briefly used. Methyl ethyl ketone, freon, TCE, and paint thinner have been used for parts washing and as solvents.

Surface Coatings
Each of the employees interviewed recalled using powder coat and "wet" paints on parts.

Injection Molding Operations
Several employees confirmed that a sprayed mold release agent was used to prepare injection molding equipment each time the equipment was used. None of the employees was able to identify the name of the mold release agent; however, one of the employees recalled possibly using a "Teflon spray" at one point. He did not recall further details. It is unclear whether the spray contained Teflon or if this was a reference to non-stick sprays in general. According

to the employees, Sta-Rite/Pentair changed chemicals at least once. Injection molding release agents currently on the market include fluorocarbon-based products.

Mr. Schwind provided information on the spray currently used. According to the Safety Data Sheet for the spray, it contains 1,1-difluoroethane, dimethyl ether, light hydrotreated distillates, and ethymethylsilioxane.

Parts Assembly
Several employees confirmed that Teflon tape/plumbers' tape was used in the assembly process. Additionally, one employee stated that "pipe dope" (thread sealant) was used in the assembly process. The employee did not recall the brand of thread sealant used. Another employee recalled using "joint sticks" (thread sealant sticks) before they were generally phased out around 2000. These products were all purchased from another vendor and were not produced on site. Thread sealants currently on the market frequently contain PTFE, a fluoropolymer.

Motor Winding Operations
None of the employees interviewed were directly involved in motor winding operations. Mr. Gosch recalled the varnish dip section of the motor winding operation was messy, with a buildup of varnish on the floor. He stated that the motor room was removed in the mid-1990s. A review of common motor varnishes indicates that the use of PFAS in the varnish is unlikely.

Aluminum Die Casting
None of the employees interviewed were directly involved in aluminum die casting operations. Die casting is not presently included in the ITRC table of sample historic and current uses of PFAS.

Waste Disposal

Floor Drains
Based on employee statements, the majority of floor drains in the Pentair facility were sealed by 1972, and it was a common practice to place machinery over the former drains. According to Dennis Schwind, active floor drains in the tank plant and rotocast areas are routed to an aboveground, 5,000-gallon oil/water separator located outside the eastern corner of the plant. Wastewater from this separator is then discharged to the sanitary sewer.

Traps associated with inactive drains were left in place. Additionally, connections to manholes within the plant were left intact. Mr. Gosch and Mr. Gallagher stated that, during major rain events, several manholes in the plant have been lifted up by the rainwater or have "jetted" water through openings in the manholes.

Pits
Mr. Sulyk stated that a storage pit was located in the southeast corner of the north building. Sludge would accumulate on the bottom of the pit, while decant water was discharged to the sanitary sewer. When sufficient sludge accumulated, a contractor would pump out the sludge and take it off-site for disposal.

Mr. Raymond did not recall any pits, but stated that a 5,000 to 6,000 gallon aqueous waste tank was used to collect waste.

Mr. Gallagher stated that mop water from cleaning of work areas was put into an evaporator, and the resulting sludge was shipped offsite.

The current wastewater system was observed during the walkthrough. Mop water is poured into an oil/water separator in the southern section of the plant. Water from the separator is pumped to a 1,000-gallon aboveground storage tank, then passes through an evaporator. The resultant sludge is stored in a 4,000-gallon aboveground storage tank until it is shipped. According to Mr. Schwind, the original evaporator was installed in 2000 and replaced in 2013.

Fires

The employees stated that on-site firefighting capabilities are limited to standard fire extinguishers.

Mr. Sulyk recalled three fires during his time at Pentair:

- Around 2007 to 2010, a minor fire occurred on a stack for the powder coating area.
- In the late 2000s, a small fire occurred in the tank plant.
- In 2010 and 2011, a dumpster caught fire several times due to a self-igniting waste product.

He did not recall whether firefighting foams were used in these incidents. He stated that there was no major cleanup, indicating that water sprays were unlikely to have been used. He was unsure if the fire department used a fire suppressant, or if they just monitored the site to confirm that the fires had burned themselves out. The other employees did not recall any additional fires.

The site visit included a visual inspection of the dumpster fire site. The roll-off dumpster was stored on an outdoor concrete pad, which has several cracks in it. Typical contents of the dumpster consist of five waste streams:

- Waste paint filters and debris;
- Waste paint slag;
- Forklift wash bay sludge, which is dewatered before being added to the dumpster;
- Vibratory refinisher sludge, which is dewatered before being added to the dumpster; and
- Machining filters.

According to Dennis Schwind, who was involved in Pentair's efforts to prevent additional fires, the fires were limited to the interior of the dumpster, which is lined. During the fire department response, he believes that the firefighters sprayed a foam fire suppressant directly into the dumpster. He did not recall the dumpster dripping after the fires.