

August 1, 2018

Mr. Conor Neal
Hydrogeologist
Land & Chemicals Division
US Environmental Protection Agency, Mail Code LU-9J
77 West Jackson Blvd
Chicago, IL 60604-3590

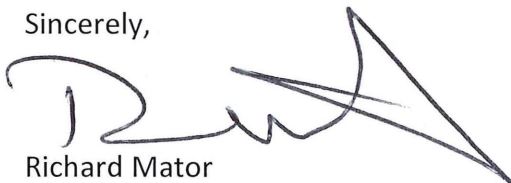
RE: Site Investigation Work Plan
Tyco Fire Products LP Site
Marinette, WI

Dear Mr. Neal:

During a conference call on June 27, 2018, the U.S. Environmental Protection Agency (USEPA) requested Tyco Fire Products LP (Tyco) produce a work plan to investigate the potential presence of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in exposed soil (0-4 feet below ground surface) at the Tyco Fire Products LP Site located at 1 Stanton Street in Marinette, WI. Attached, for your review, is a Site Investigation Work Plan which summarizes the intended methodology.

If you have any questions regarding this submittal, please feel free to contact me at 215.393.0240 or richard.mator@jci.com.

Sincerely,



Richard Mator
Sr. EHS Manager – Environmental Remediation

Enclosure

cc: David Neste – WDNR

Mr. Richard Mator
Tyco Fire Products LP
1400 Pennbrook Parkway
Lansdale, Pennsylvania 19446

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126 North Jefferson Street
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Milwaukee
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Subject:
Site Investigation Work Plan
Tyco Stanton Street Facility, Marinette, Wisconsin

ENVIRONMENT

Date:
August 1, 2018

Dear Mr. Mator:

Contact:
Ben Verburg

On behalf of Tyco Fire Products LP, Arcadis US, Inc. (Arcadis) has prepared this Site Investigation Work Plan (work plan) to conduct shallow soil sampling to investigate the nature and extent of per- and poly-fluoroalkyl substances (PFAS) at the Tyco Facility located at 1 Stanton Street in Marinette, Wisconsin (Site).

Phone:
414.277.6231

OVERVIEW

Email:
Ben.Verburg@arcadis.com

The investigation described in this work plan consists of shallow soil sampling to determine the potential presence and approximate horizontal extent of PFAS in the shallow soil, defined as 0 to 4-feet below ground surface (bgs). Investigation locations will be limited to open areas of the Site, excluding areas covered by pavement and buildings.

Our ref:
WI001651

SITE BACKGROUND

Site Description and History

At the Site, Tyco operates a fire extinguisher and fire suppression system manufacturing facility. Other historical operations have taken place at the facility including lumber mill operations and agricultural manufacturing including herbicides (CH2M 2015).

The Site consists of multiple tax parcels, totaling approximately 66 acres. The Site is located in the north-northeastern portion of the City of Marinette, directly south of the Menominee River (**Figure 1**). The land surface within the site is generally flat, much of it paved or covered by industrial buildings. Shallow soils beneath the site, extending to at least the 4-foot depth range planned for this

investigation, are understood to consist of fill and/or sandy alluvium. The water table is expected to be found between approximately 1 and 5 feet bgs.

SOIL INVESTIGATION ACTIVITIES

Access and Utility Clearance

Soil samples are planned for 7 locations on the Tyco facility, as shown on **Figure 1**. Permission for access to investigation locations will be obtained from Tyco personnel before beginning work.

Prior to mobilization, Wisconsin One Call (i.e., Diggers Hotline) will be contacted. In accordance with Arcadis standard policies, at minimum, three lines of evidence will be utilized for locating subsurface utilities. The anticipated lines of evidence include contracting a private utility locating service, conducting an inspection of each location, reviewing available utility drawings, and interviewing knowledgeable facility personnel. Due to utility congestion in the area, sampling will be performed using a hand auger.

Sample Collection

Shallow soil samples will be collected using stainless steel hand augers. Borings will be dug up to four feet deep, stopping shallower in saturated soils are encountered. Up to two discrete samples will be collected per location, targeting the 0-2 and 2-4 foot intervals. If saturated soil is encountered, soil sampling will be adjusted as follows:

- If saturated soils are observed between 2 and 4 feet deep, the second sample interval will be adjusted to stay above the zone of saturation.
- If saturated soils are encountered shallower than 2 feet, only one sample will be collected. The sample will be collected from above the zone of saturation, if feasible, or from the 0 to 1 foot at a minimum.

Samples will be placed in laboratory supplied containers and shipped to the lab, as described under the Laboratory Methods and Analysis section. After completion, boreholes will be backfilled with bentonite pellets, and covered with clean topsoil.

Equipment Decontamination

All sampling equipment will be decontaminated thoroughly using an Alconox® solution between locations and between intervals, and then rinsed with laboratory-supplied PFAS-free water.

Investigation Derived Waste

Excess soil generated during the investigation activities will be containerized in 55-gallon steel drums and staged in a centralized and secured location on Tyco property, pending characterization. Waste disposal options will be assessed following waste characterization.

Survey

All sample locations will be marked with a flag or stake and surveyed. The ground surface elevation of each location will be referenced to the North American Vertical Datum of 1988 (NAVD 88) system and the

horizontal coordinates will be reported in the Wisconsin State Plane North American Datum 1983 (NAD 83) – Wisconsin Central 44802 Zone system as part of the survey work.

QUALITY ASSURANCE AND QUALITY CONTROL

Special Considerations for PFAS Sampling

The detection of PFAS compounds at very low concentrations can be influenced by common PFAS-containing materials that may be present at the Site or introduced by sampling equipment or personnel. Therefore, sampling protocols are to be strictly followed by the sampling personnel. To minimize the potential for cross-contamination, attention will be given to sampling equipment, decontamination procedures, as well as clothing and personal care products used by sampling personnel.

Sampling for PFAS compounds will include the submission of one laboratory-supplied reagent field blank per day to analyze for the presence of ambient PFAS in the sampling area. PFAS-free water used for the reagent field blank sample will be brought to the Site in a laboratory-supplied bottle. Field staff will transfer the laboratory-supplied PFAS-free water into an empty sample bottle. This reagent field blank will be placed in the same cooler as other samples intended for PFAS analyses.

To assess the adequacy of the decontamination process, a rinse blank will be collected every 20 samples or once per day, whichever is more frequent. To prepare a rinse blank, a sample of PFAS-free water will be poured over or through decontaminated field equipment prior to collection of environmental samples.

Laboratory Methods and Analysis

Samples will be placed in laboratory-supplied containers, stored and shipped on ice, and handled with chain of custody documentation. All samples will be sent to TestAmerica or an equivalent lab that is accredited for PFAS analysis. Soil samples will be containerized in PFAS certified clean plastic 4-ounce jars. Samples will be analyzed for all 14 PFAS compounds that are reportable using a modified version of United States Environmental Protection Agency (US EPA) Method 537.

As part of the field QA/QC, one matrix spike (MS) sample and one matrix spike duplicate (MSD) sample will be collected for every 20 field samples collected and one field duplicate will be collected for every ten field samples.

Internal laboratory QA/QC should consist of one laboratory blank and one laboratory control sample (or blank spike) per batch of samples, and additional QA/QC as indicated by the laboratory QA/QC procedures.

REPORTING

After the investigation is complete and laboratory data are received, Arcadis will prepare a brief letter report summarizing the investigation results.

Mr. Richard Mator
Tyco Fire Products LP
August 1, 2018

REFERENCES

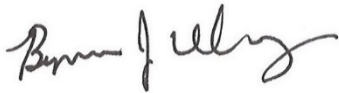
Arcadis 2018. Revised Site Investigation Work Plan. Tyco Fire Technology Center. Marinette, Wisconsin. BRRS No. 02-38-580694. April 2018.

CH2M Hill 2015. Revised Barrier Wall Groundwater Monitoring Plan Update. Tyco Fire Products LP. September 2015.

Oakes, E. L., & Hamilton, L. J. (1973). *Water resources of Wisconsin: Menominee-Oconto-Peshigo River basin* (No. 470). US Geological Survey.

Sincerely,

Arcadis U.S., Inc.



Benjamin J. Verburg, PE
Principal Engineer




Enclosures:

Figures

- 1 Proposed Soil Sampling Locations

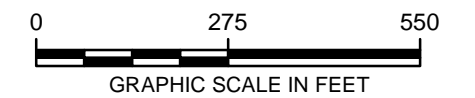


LEGEND:

-  PROPOSED SOIL SAMPLE LOCATION
-  APPROXIMATE SITE PROPERTY BOUNDARY
-  PARCEL BOUNDARY

NOTES:

1. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
2. THE PARCEL REPRESENTATIONS ON THIS MAP OR PRODUCT, OTHER THAN GRAPHIC ALTERATIONS THAT MAY BE INDICATED, ARE DERIVED FROM PUBLIC DOMAIN INFORMATION FROM VARIOUS SOURCES ROUTINELY PROVIDED TO AND MAINTAINED BY MARINETTE COUNTY. ALTHOUGH THE SOURCES ARE BELIEVED TO BE REASONABLY RELIABLE, THERE MAY BE ERRORS OR INCONSISTENCIES IN SAID REPRESENTATIONS. MARINETTE COUNTY DOES NOT MAKE ANY WARRANTY WHATSOEVER, EXPRESSED OR IMPLIED, THAT SAID REPRESENTATIONS ARE ACCURATE. IF THERE ARE DOUBTS AS TO THE ACCURACY OF ANY SUCH REPRESENTATIONS ON THIS MAP OR PRODUCT, AN INDEPENDENT INVESTIGATION IS RECOMMENDED.



TYCO FIRE PRODUCTS, LP
MARINETTE, WISCONSIN
SOIL INVESTIGATION WORK PLAN

PROPOSED SOIL SAMPLING LOCATIONS



FIGURE
1