

NR 718 Material Management Plan

1.0 Purpose of Request

ChemDesign Products, Inc. (ChemDesign) is a tenant on the property located at One Stanton Street, Marinette, Wisconsin (Property), located on the banks of the Menomonee River. The landlord, Tyco Fire Products LP (Tyco) also has operations on the Property and entered a Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (AOC) in 2009 with the U.S. Environmental Protection Agency (EPA) under which Tyco has performed corrective actions and maintains institutional controls.

ChemDesign intends to install a new six-inch water line to connect the water line for ChemDesign Building 1 to an existing water main on the Tyco Property (ChemDesign Proposed Work).

A small portion of cover Area J under the RCRA AOC may be intersected during the ChemDesign Proposed Work, as indicated in a memorandum from Tyco, emailed to EPA on January 16, 2024.

As required by Wisconsin Administrative Code (WAC) Chapter NR 718 Management of Contaminated Soil or Solid Wastes Excavated During Response Actions (NR 718), this Material Management Plan (MMP) provides procedures to be implemented at the Property to properly manage contaminated soil onsite during the ChemDesign Proposed Work, which will involve earth moving and other onsite subsurface activities. The MMP was prepared based on review of available information. This MMP is consistent with the MMP previously submitted by Tyco for other work on the property.

ChemDesign is requesting an exemption from the NR 718.12 (1) (c) location standard requirements so that contaminated soil can be managed, stockpiled, and backfilled within the general area from which it is excavated, as allowed in NR 718.12 (1) (d). It is anticipated that the stockpiled soil will be backfilled or containerized within one to two days, but no longer than fifteen (15) days.

2.0 Contact and Property Information

Information About the Property Where Material is Proposed to be Excavated and Stored

Property Name	Tyco Fire Products LP
Other Property Names	Tyco, Ansul
BRRTS #s	02-38-000011
FID #	438039470
Address	One Stanton Street, Marinette, WI 54143
County	Marinette
Location	NW 1/4 of the SW 1/4 of Sec 05, T30N, R24E
Parcel IDs	251-4273.1, 251-4273.2, 251-4273.5, 251-4273.8, 251-4273.9
WTM Coordinates	-
Latitude/Longitude	45.0978639, -87.6160825
Current Zoning	Industrial
Current Land Use	Manufacturing

Contact Information

Responsible Party, Property Owner and Requestor	Responsible Party and Requestor: Thomas Willis, EHS Director ChemDesign Products, Inc. 2 Stanton Street Marinette, WI 54143 twillis@chemdesign.com 715.735.8263 Property Owner: Denice Nelson, Senior Director, Remediation and Strategy Tyco 5757 North Green Bay Avenue Glendale, WI 53209 denice.karen.nelson@jci.com 651.280.7259
Environmental Consultant	Jeffrey Danko, PG Endpoint Solutions Corp. 6871 South Lovers Lane Franklin, WI 53132 jeff@endpointcorporation.com 414.427.1200
WDNR Contact	Sarah Krueger WDNR 2984 Shawano Avenue Green Bay, WI 54313 sarah.krueger@wisconsin.gov 920.510.8277
EPA Contact	Andrew Kleinberg, Project Manager – Geologist RCRA Corrective Action Section 2 Land, Chemicals & Redevelopment Division, Region 5, EPA 77 West Jackson Blvd. (LR-16J), Chicago, IL 60604 Kleinberg.Andrew@epa.gov 312.353.4374
Initiator for Proposed Activities	Thomas Willis, EHS Director ChemDesign Products, Inc. 2 Stanton Street Marinette, WI 54143 twillis@chemdesign.com 715.735.8263

3.0 Results of Analysis Performed and Characteristics of Waste

Describe the characteristics of the contaminated soil and/or other solid waste material that will be managed under this request, describe the sampling activities conducted and demonstrate how it has been adequately characterized.

<p>A. Total volume of contaminated soil and/or other solid waste to be managed (cubic yards)</p>	<p>An estimated 85 cubic yards (yd³) are planned for removal. Of that 25 yd³ are planned for offsite disposal at the Waste Management Landfill located in Arlington, Oregon, and 60 yd³ will be reused onsite as backfill within the general area from which it is excavated.</p>
<p>B. Characteristics of the material proposed to be managed (which may include general makeup, physical characteristics, the homogeneity of the material, the proportion of soil to other solid waste, and any other pertinent descriptors):</p>	<p>Contaminated soil at the site would consist primarily of fill materials, native soil, and occasional debris. Fill and underlying native materials are described in Attachment 1, Section Geologic and Hydrogeologic Characteristics.</p>
<p>C. Describe the historical and current land use of the generating site or facility where the contaminated soil or other solid waste originates.</p>	<p>ChemDesign understands that the Property was first used for lumber mill operations, sawdust disposal, and raw and cut lumber storage. After 1915, the Property has been used for the manufacturing of cattle feed, refrigerants, and specialty chemicals. Arsenical based agricultural herbicides were manufactured on the Property from 1957 to 1977. A byproduct of the manufacturing of this herbicide was a salt that contained approximately 2 percent arsenic by weight and was stockpiled at several locations on the Property and subsequently entered soil and groundwater. By 1978, production of arsenical based herbicides ceased and, since 1983, the Property has been used to produce fire extinguishers and fire suppression systems. ChemDesign leases a portion of the Property from Tyco and ChemDesign conducts chemical toll manufacturing services on the Property. Additional background and details on the Property can be obtained in the 2022 Barrier Wall Groundwater Monitoring Report (Jacobs 2023).</p>
<p>D. Description of identified contaminants and the source(s) and whether contaminant concentrations exceed NR 720 Residual Contaminant Levels.</p>	<p>The following contaminant types are known to be present at the Property at concentrations above applicable soil and/or groundwater standards (where applicable):</p> <ul style="list-style-type: none"> ▪ RCRA metals: primarily arsenic and in some areas low level mercury

	<ul style="list-style-type: none"> ▪ Volatile Organic Compounds (VOCs): benzene, ethylbenzene, naphthalene, toluene, xylenes, chlorobenzene, chloromethane, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, cis-1,2-dichloroethene, methylene chloride, trichloroethene, vinyl chloride, acetone, 4-methyl-2-pentanone ▪ Per- and polyfluoroalkyl substances (PFAS) ▪ Limited to no semi-volatile organic compounds (SVOCs) <p>Recent waste soil sample analytical laboratory report for the ChemDesign Proposed Work is included in Attachment 2.</p>
<p>E. Description of the sampling activities conducted to characterize the material including where the samples were collected, how sample locations were chosen, the sampling methods used, and when sampling activities were conducted.</p>	<p>A Single, aggregate sample was collected on September 15, 2023, from the approximate locations the trench boxes which will be placed at the tie-in points for the ChemDesign Proposed Work (to connect water service line to a ChemDesign building). Samples were collected with a hand auger at 4 feet and 7 feet of depth below grade at the approximate center of each proposed trench box that will facilitate the underground boring see Attachment 3. All four-collection point samples were aggregated in a clean stainless-steel bowl and mixed. Single samples for each method of analysis were collected in the appropriate bottles and sent to Pace Analytical Services, LLC.</p>
<p>F. Explain how the sampling activities adequately characterized the contaminated soil or other solid waste proposed to be managed. Indicate whether the samples were analyzed for all contaminants previously identified at the generating site or facility and analyzed for all contaminants potentially present at the site or facility considering current and historic land use. Discuss how samples were collected from areas most likely to be contaminated and from material that will actually be managed under this request.</p>	<p>Sampling activities were conducted per the approved site Quality Assurance Project Plans and Standard Operating Procedures. Samples were collected at the approximate center point of each trench box which represents the fixed connection points for the water line tie-ins. Samples were analyzed for toxicity characteristic leaching procedure (SW846 1311) for RCRA metals (SW846 6010D and SW846 7470), VOCs (SW846 8260), and SVOCs (SW846 8270E) and also analyzed for PFAS substances (EPA 537 modified) as previously identified present contaminants at the site.</p>
<p>G. Total number of samples collected from this material and analyzed for contaminants of concern.</p>	<p>A single (one) aggregate sample was collected.</p>
<p>H. Rate of sample collection per volume.</p>	<p>Approximately 1 sample per 85 yd³ of material was sampled. This is based on the rate</p>

recommended in NR 718.12 (1) (e)¹. An alternative sampling plan was not submitted.

4.0 Project Description/Materials Management

Describe how the contaminated materials will be managed, the proposed schedule for managing the material, and provide sufficient information to justify that the placement of the contaminated materials will meet the requirements of NR 726.12 (1) (b) 1. to 5.

A. Describe the material management activities to take place. Provide details on how and where the material will be generated, transported, and placed. Describe the depth of the proposed excavation of contaminated soil or other solid waste, and the depth that it will be placed at the receiving site or facility. Describe any response actions proposed for the receiving site or facility to address the relocated contaminated material (such as the construction of a cap). Discuss how material management activities will fit in with the overall property remediation and/or redevelopment plans.

Horizontal directional drilling will be used to install the six-inch water line. At each end of the water line to be connected, a small trench box will be installed to facilitate the boring. An excavator will be used to dig soils and two separate impermeable barriers to temporarily stockpile soils will be used at each end for the proposed water line. One for the clean six-inch topsoil and a separate barrier for the contaminated materials. This is expected to produce 30 cubic yards at each end of the line which will then be reused as backfill to complete the activity. Should the excavation take an additional day, an impermeable top barrier along with silt tenting will be applied to the contaminated piles overnight.

Once both trench boxes are set, horizontal directional drilling will be used to install approximately 72 feet of the six-inch ductile line. The depth of the trench boxes and water line to be installed is approximately six feet below grade. The drilling is estimated to produce 25 cubic yards of soil and bentonite slurry which will be captured with a hydro-vac truck. The hydro-vac truck will not leave the property and transport the material approximately 200 yards to lined soil boxes provided by Waste Management. The material will be solidified with saw dust within the soil boxes prior to transfer.

The soil boxes will be profiled as non-hazardous waste and sent to the Waste Management Landfill in Arlington, Oregon.

If dewatering is required as part of subsurface activities, groundwater will be collected in container(s) and will be disposed of offsite through Waste Management in Vicory, Illinois.

Once the water line has been installed, the contaminated soils will be placed back into the excavation site, all geo-fabric materials

¹ NR 718.12 (1) (e) requires that samples collected to characterize soil be collected at a rate of one sample per 100 cubic yards (for the first 600 cubic yards) and one sample for each additional 300 cubic yards of material, with a minimum of two samples.

	encountered during the excavation will be replaced. To complete, the six inches of topsoil will be re-installed, and the site will be re-seeded with grass seed. Any excess soil will be placed in the soil boxes from the directional drilling for offsite disposal.
B. Summarize the proposed schedule for implementation of the activities including anticipated start and end dates.	ChemDesign anticipates starting the new water line work in spring 2024 and is anticipated to take 1 to 2 days to complete.
C. Confirm the proposed management activities will comply with NR 726.13 (1) (b) 1. through 5.	The Property owner is subject to an AOC and the RCRA remedy components are in place and under monitoring and operations and maintenance. The ChemDesign Proposed Work will not change or impact the effectiveness of the RCRA remedy components. The small cover area intersected during the work will be reinstalled pursuant to the 2010 Cover Operation and Maintenance Plan submitted by Tyco and approved by the EPA under the AOC. Materials taken offsite for disposal will be disposed of at the Waste Management Landfill, located in Arlington, Oregon.
D. Describe any procedures that have been established, or methods that will be used, to identify previously undocumented contamination during the completion of this project (such as instrument field screening, visual inspections, etc.). Also describe any contingency procedures that have been established to address unexpected contamination.	If materials not previously known to be present are encountered, the WDNR will be notified and these materials will be analyzed as necessary for offsite disposal. Unexpected subsurface conditions could include, but not limited to, the following: <ul style="list-style-type: none"> ▪ Drums, underground storage tanks, piping, sumps, etc. ▪ Suspect regulated materials (e.g., suspect asbestos containing debris) ▪ Significant uncharted utilities or subsurface obstructions/features
E. Summarize how the proposed management activities will prevent or minimize adverse environmental impacts and potential threats to human health and welfare, including worker safety, by assessing how all potential exposure and migration pathways of concern, including direct contact exposure, vapor intrusion, ground water, surface water, sediment and any other relevant pathway will be addressed by the proposed management.	See Section 6.0 Location Criteria Exemption Request in Attachment 1 for additional details.

5.0 Receiving Site or Facility Information

Describe the site or facility receiving the material.

Contaminated soils at the Tyco site will either be reused onsite, as previously approved by WDNR and EPA, or sent offsite to an appropriate disposal facility. Soils are not planned to be brought to another receiving site or facility. Contaminated soil generated from the Property are planned to be disposed of at the Waste Management Landfill located in Arlington, Oregon.

6.0 Locational Criteria Exemption Request

Indicate if excavated contaminated soil will be stored in any of the following locations:

Within a floodplain	Yes, see attached Property Figures (Attachment 4, Fig. 2)
Within 100 feet of any wetland or critical habitat area	Yes, WDNR mapped wetlands on the eastern edge of the Property as shown in attached Property Figures (Attachment 4, Fig. 3)
Within 300 feet of any navigable river, stream, lake, pond, or flowage	Yes, Menominee River adjacent to the north edge of the Property, see attached Property Figures (Attachment 4, Fig. 1-3)
Within 100 feet of any on-site water supply well or 300 feet of any off-site water supply well	No
Within three (3) feet of the high groundwater level	Yes, groundwater ranges from approximately 1 to 5 feet below the ground surface (Attachment 1, Section Geologic and Hydrogeologic Characteristics)
At a depth greater than the depth of the original excavation from which the contaminated soil was removed	No

Provide the justification for exempting the proposed soil management activity from the indicated criteria as described below.

Explain below why granting an exception to the NR 718.12 (1) (c) location criteria will not cause a threat to public health, safety, welfare, and the environment by assessing how all potential exposure and migration pathways of concern (including direct contact exposure, vapor intrusion, groundwater, surface water, sediment, and any other relevant pathway) will be addressed by the proposed management. Consider the quantity and characteristics of the waste being managed, the geologic and hydrogeological characteristics of the receiving site, the unavailability of other environmentally suitable alternatives, and whether the activities will comply with other state and federal regulations including other portions of NR 700 to NR 754.

The reuse of excavated soil as backfill will not cause a threat to public health, safety, welfare and the environment. The primary exposure pathways for the backfilled soil will be direct contact, vapor intrusion and groundwater. Potential for direct contact with the soil will be addressed by placing geo-fabric and 6-inches of topsoil over the backfilled soil at the conclusion of the work. Based on the constituents and the relatively low concentrations of the detected VOCs, the vapor intrusion pathway is not considered viable. Finally, the groundwater pathway is addressed through an existing barrier wall and groundwater collection and treatment system at the site which was installed pursuant to the AOC, as the area where the soil will be backfilled is within the barrier wall.

ChemDesign is requesting an exemption from the NR 718.12 (1) (c) location standard requirements so that contaminated soil can be reused as backfill on the Property, as allowed in NR 718.12 (1) (d). The soil will be backfilled within the general area from which it is excavated and will remain onsite. It is anticipated that the stockpiled soil will be backfilled or containerized within approximately one to two days, but less than fifteen (15) days.

This MMP will provide procedures to properly manage contaminated soil on the Property. Additional details are provided in Attachment 1.

7.0 Continuing Obligations at Receiving Site or Facility

Indicate which continuing obligations will be specifically required to address the material being managed on the receiving site or facility.

Not applicable. The receiving site or facility for contaminated soil and materials from Tyco would be a permitted facility, see Section 5.0 Receiving Site or Facility Information, subject to the permitted facility closure requirements.

8.0 Attachments

Attachment 1- Location Standard Exemption Request Details

Attachment 2 - Analytical laboratory report for recent waste characterization activities

Attachment 3 – Proposed Work Site Plan with RCRA Components and ChemDesign’s Proposed Water Line

Attachment 4 – Property Figures

- a. Figure 1 – Property Map
- b. Figure 2 – FEMA Flood Insurance Rate Map
- c. Figure 3 – Marinette County Map with parcels, 100-year flood plain and WDNR mapped wetlands

9.0 Certification Statement

"I, Jeffrey H. Danko, hereby certify that I am a registered professional geologist in the State of Wisconsin, registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. GHSS 5, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."



Jeffrey Danko, PG Senior Consultant

WI-111

P.G. #

Attachment 1

Waste Characteristics and Quantities

Soil excavation activities are anticipated within areas where RCRA metal, VOC, and PFAS impacted soil will be encountered. Contaminated material would consist primarily of fill materials, native soil, and occasional debris. Fill and underlying native materials are described in the following Section. Subsurface activities will include, but are not limited to, stripping of topsoil, excavation, and horizontal drilling to install a water line, and replacement of the soil and topsoil (and geo-fabric cover, where required). Quantities of soil for removal are approximately 85 cubic yards (yd³), up to 60 yd³ of which may be reused onsite as backfill material. Soil and groundwater have been characterized through historical investigations and laboratory analytical results, and Tyco currently has approved waste profiles for disposal of both soil and groundwater. The recent waste soil sample analytical laboratory report is included in Attachment A-1.

Geologic and Hydrogeologic Characteristics

The Property Owner, Tyco, has provided the following information. Geology at the Property consists of an upper soil layer consisting of sand/gravel fill. Based on historical documentation, the fill material has been placed on the Property periodically for over 100 years of various operations. Beneath the fill layer is loose to medium dense alluvial deposits consisting of fine- to coarse-grained sand and gravel. Some of these alluvial deposits consist of an organic-rich, fine-grained peat material. Underlying the alluvial stratigraphy is a layer of dense silty sand to sandy silt that transitions to an even denser sandy silt and clay-compacted glacial till deposit. Below this is dolomitic bedrock at approximately 40 feet below ground surface (bgs).

Groundwater, when encountered at the Property, has typically been present between 3 and 5 feet bgs, but depending on Property conditions can approach 1-foot bgs in some areas. Regional groundwater flow beneath the Property is generally northeast toward the Menominee River. Noted variations in historical groundwater flow (before construction of the barrier wall) were observed in the northwestern portion of the Property: groundwater flow was from the southeast toward the northwest, likely the result of a filled-in slip that is present along the western border of the Property. Other local preferential pathways of migration may be present at the Property. The direction of groundwater flow is affected near the Property because of the presence of the vertical barrier wall (that contains groundwater at the Property), which was completed in fall 2010. Regional groundwater flow outside the Property likely remains generally toward the Menominee River but is diverted around the barrier wall directly south of the Property.

VOCs and total arsenic are monitored as part of the barrier wall groundwater monitoring plan activities per the 2015 Revised Barrier Wall Groundwater Monitoring Plan Update (BWGMPU; CH2M 2015) and June 24, 2019, Addendum to 2015 Revised Barrier Wall Groundwater Monitoring Plan Update (Jacobs 2019 **submitted to the EPA and WDNR**). Concentrations were reported at levels exceeding their respective NR 140 preventative action limits (PALs) and/or NR 140 enforcement standards (ESs).

Groundwater on the Property is relatively shallow and is contained by the barrier wall and treated by the groundwater treatment system. Property groundwater levels within the containment barrier walls are also maintained by a groundwater treatment system. As a result, storage of impacted soil/fill will not have any additional impact on groundwater quality at the Property. If dewatering is required as part of subsurface activities, groundwater will be collected in containers and will be disposed of offsite.

Unavailability of Environmentally Suitable Alternatives

The corrective measures conducted at the Property by Tyco, as required in the AOC, included components to address historical impacts at the Property and be protective of human health and the environment. The main component consisted of onsite groundwater management, which includes the containment barrier wall, engineered groundwater collection and treatment system, and a phyto-pumping system. We believe it would be less protective of the environment to move contaminated soil from the Property for offsite disposal. The Property is already contained and monitored and has restricted access and 24-hour security; therefore, reuse of the excavated soil as

backfill material is a practical and environmentally suitable option with this MMP in place to provide procedures to properly manage contaminated soil.

Compliance with Other State and Federal Regulations

Soil management will follow other state and federal regulations. Contaminated soil would also be managed in accordance with stormwater requirements and other NR 718 requirements. Soil will be managed per the MMP that includes proper erosion control (to prevent the potential runoff or surface migration of contaminants during subsurface activities) and other measures to be implemented at the Property, designed to be protective of human health and the environment.

The approval of Tyco, EPA, and WDNR will be required before the proposed work can begin due to the small disturbance of the cover area of the existing corrective measures required by the AOC.

Public Health, Safety, or Welfare or the Environment

If this exemption is not granted, excavated soil would have to be transported and stored offsite for disposal, which we believe elevates potential environmental risk and risk to the community. If this exemption is granted, a portion of the soil can be reused as backfill material for the excavation, thus reducing the potential environmental risk and risk to the community. The Property already has RCRA AOC corrective measures in place with monitoring requirements. The Property has restricted access and 24-hour security to keep the public away from stored contaminated soil. The proposed soil handling and onsite storage procedures do not pose an unacceptable threat to public health, safety, welfare, or the environment, including worker safety. Potential exposure and migration pathways of concern are addressed below.

Vapor Intrusion

Identified contamination associated with groundwater and soil may consist of VOCs, SVOCs, metals, and PFAS. The metals, SVOCs, and PFAS constituents do not pose a threat to human health or safety from vapor migration to underlying soils. TCLP VOC concentrations were not detected in the samples subjected to laboratory analysis. Storage and stockpiling of contaminated soils managed in accordance with the MMP are not expected to provide a complete pathway for vapor intrusion. Soils will also be placed back in the same area from which they were removed. Therefore, a vapor intrusion risk is not expected.

Sediment/Surface Water

Storm water discharge at the Property is regulated by the WPDES Industrial Stormwater General Permit; coverage under the Construction Stormwater General Permit would be obtained if applicable. Appropriate storm water and erosion control measures will be put in place prior to subsurface activities to minimize erosion and storm water runoff. To prevent tracking of soil on and off the Property, access areas will be made clear for loading trucks/containers and trucks/containers and equipment will be cleaned of soil prior to leaving the area. As practicable, the weather forecast shall be used to schedule subsurface activities to minimize the potential for significant storm water accumulation. However, potentially impacted groundwater and storm water may accumulate in areas requiring removal. Impacted liquids will be collected and disposed offsite or treated at the groundwater treatment system.

Air Quality

Contaminated soil piles will be covered when not actively being managed, limiting volatilization of residual VOCs. Subsurface activities will include best management practices to limit particulate emissions. Contractors will be required to adequately wet soil during dry periods to prevent dust emissions.

Direct Contact Exposure

The direct contact pathway will be protected by constructing a barrier, such as barricade tape or temporary fencing, for storage areas that are accessible to unauthorized workers and visitors. The contractor performing subsurface activities will evaluate potential health and safety hazards for their workers from potential exposure to contaminants in soil, sediment, buried waste, or groundwater while performing these activities and prepare an

activity-specific plan to address these hazards. The plan must include the appropriate level of monitoring and personal protective equipment identified by the contractor based on known conditions. However, if actual conditions vary from expected hazards based on field observations, the contractor must stop work. The activity-specific plan should be reevaluated and updated by the contractor when appropriate. Workers that may come into contact with impacted soil must be informed of possible contaminant concentrations that may be encountered and must be properly trained in the handling of the soil by the contractor. In addition, based on the tasks that workers perform and whether they come in contact with groundwater, the contractor must determine if their staff have the required training.

At the conclusion of the proposed construction activities, all areas where excavated soil are used for backfill will be covered with either 6-inches of clean topsoil or, for the cover areas, geo-fabric and clean topsoil, limiting the potential for direct contact by site personnel.

Groundwater Quality/Water Supply

Groundwater at this Property is impacted from historical activities and has detections above the NR 140 PALs and ESs. Groundwater is addressed by the barrier wall and an active groundwater collection and treatment system. Groundwater and liquids encountered in construction activities will be disposed of offsite. Surface water controls will be implemented by the contractor to prevent surface runoff that could result in surface water contact with the soil and groundwater, including the construction of berms if necessary. Any water which has been in contact with contaminated soil or groundwater shall be contained and may be replaced in the storage pile or shall be collected and sent offsite for disposal. There are no water supply wells within 300 feet of the Property, only groundwater monitoring and extraction wells associated with the corrective measures.

Attachment 2



October 09, 2023

Matthew Smiley
ChemDesign Products Inc
2 Stanton St
Marinette, WI 54143

RE: Project: TCLP & PFAs Testing
Pace Project No.: 40268330

Dear Matthew Smiley:

Enclosed are the analytical results for sample(s) received by the laboratory on September 20, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela Lane
angela.lane@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Willis, ChemDesign Products Inc



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

GMP+ Certification #: GMP050884

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: TCLP & PFAs Testing
Pace Project No.: 40268330

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40268330001	91520 TCLP & PFAs	Solid	09/15/23 12:00	09/20/23 09:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40268330001	91520 TCLP & PFAs	EPA 6010D	SIS	7	PASI-G
		EPA 7470	YER	1	PASI-G
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	RJN	16	PASI-G
		EPA 8260	CXJ	13	PASI-G
		ENV-SOP-MIN4-0178	NF1	58	PASI-M

PASI-G = Pace Analytical Services - Green Bay

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Sample: 91520 TCLP & PFAs Lab ID: 40268330001 Collected: 09/15/23 12:00 Received: 09/20/23 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP									
Analytical Method: EPA 6010D Preparation Method: EPA 3015A									
Leachate Method/Date: EPA 1311; 09/25/23 14:50									
Pace Analytical Services - Green Bay									
Arsenic	0.15	mg/L	0.050	0.017	2	09/26/23 10:40	09/27/23 13:26	7440-38-2	
Barium	0.32	mg/L	0.010	0.0030	2	09/26/23 10:40	09/27/23 13:26	7440-39-3	
Cadmium	0.0079J	mg/L	0.010	0.0027	2	09/26/23 10:40	09/27/23 13:26	7440-43-9	D3
Chromium	<0.0051	mg/L	0.020	0.0051	2	09/26/23 10:40	09/27/23 13:26	7440-47-3	D3
Lead	0.055	mg/L	0.040	0.012	2	09/26/23 10:40	09/27/23 13:26	7439-92-1	
Selenium	<0.024	mg/L	0.080	0.024	2	09/26/23 10:40	09/27/23 13:26	7782-49-2	D3
Silver	<0.0064	mg/L	0.020	0.0064	2	09/26/23 10:40	09/27/23 13:26	7440-22-4	D3
7470 Mercury, TCLP									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Leachate Method/Date: EPA 1311; 09/25/23 14:50									
Pace Analytical Services - Green Bay									
Mercury	<0.066	ug/L	0.20	0.066	1	09/27/23 13:01	09/28/23 06:55	7439-97-6	
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	16.6	%	0.10	0.10	1		10/06/23 13:07		N2
8270E MSSV TCLP Sep Funnel									
Analytical Method: EPA 8270E Preparation Method: EPA 3510									
Leachate Method/Date: EPA 1311; 09/25/23 14:50									
Pace Analytical Services - Green Bay									
1,4-Dichlorobenzene	<17.8	ug/L	50.0	17.8	1	09/26/23 10:07	09/27/23 10:57	106-46-7	
2,4-Dinitrotoluene	<11.9	ug/L	50.0	11.9	1	09/26/23 10:07	09/27/23 10:57	121-14-2	
Hexachloro-1,3-butadiene	<16.4	ug/L	50.0	16.4	1	09/26/23 10:07	09/27/23 10:57	87-68-3	
Hexachlorobenzene	<25.2	ug/L	100	25.2	1	09/26/23 10:07	09/27/23 10:57	118-74-1	
Hexachloroethane	<15.1	ug/L	50.0	15.1	1	09/26/23 10:07	09/27/23 10:57	67-72-1	
2-Methylphenol(o-Cresol)	<7.7	ug/L	50.0	7.7	1	09/26/23 10:07	09/27/23 10:57	95-48-7	
3&4-Methylphenol(m&p Cresol)	<6.0	ug/L	50.0	6.0	1	09/26/23 10:07	09/27/23 10:57		
Nitrobenzene	<15.7	ug/L	50.0	15.7	1	09/26/23 10:07	09/27/23 10:57	98-95-3	
Pentachlorophenol	<16.3	ug/L	50.0	16.3	1	09/26/23 10:07	09/27/23 10:57	87-86-5	
Pyridine	<73.0	ug/L	100	73.0	1	09/26/23 10:07	09/27/23 10:57	110-86-1	
2,4,5-Trichlorophenol	<18.2	ug/L	50.0	18.2	1	09/26/23 10:07	09/27/23 10:57	95-95-4	
2,4,6-Trichlorophenol	<20.0	ug/L	50.0	20.0	1	09/26/23 10:07	09/27/23 10:57	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	73	%	38-130		1	09/26/23 10:07	09/27/23 10:57	4165-60-0	
2-Fluorobiphenyl (S)	51	%	23-130		1	09/26/23 10:07	09/27/23 10:57	321-60-8	
2,4,6-Tribromophenol (S)	46	%	10-141		1	09/26/23 10:07	09/27/23 10:57	118-79-6	
Phenol-d6 (S)	19	%	11-130		1	09/26/23 10:07	09/27/23 10:57	13127-88-3	
8260 MSV TCLP									
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/21/23 13:35									
Pace Analytical Services - Green Bay									
Benzene	<3.0	ug/L	10.0	3.0	10		09/25/23 11:35	71-43-2	
2-Butanone (MEK)	<65.2	ug/L	250	65.2	10		09/25/23 11:35	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Sample: 91520 TCLP & PFAs Lab ID: 40268330001 Collected: 09/15/23 12:00 Received: 09/20/23 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP									
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/21/23 13:35									
Pace Analytical Services - Green Bay									
Carbon tetrachloride	<3.7	ug/L	10.0	3.7	10		09/25/23 11:35	56-23-5	
Chlorobenzene	<8.6	ug/L	10.0	8.6	10		09/25/23 11:35	108-90-7	
Chloroform	<5.0	ug/L	50.0	5.0	10		09/25/23 11:35	67-66-3	
1,2-Dichloroethane	<2.9	ug/L	10.0	2.9	10		09/25/23 11:35	107-06-2	
1,1-Dichloroethene	<5.8	ug/L	10.0	5.8	10		09/25/23 11:35	75-35-4	
Tetrachloroethene	<4.1	ug/L	10.0	4.1	10		09/25/23 11:35	127-18-4	
Trichloroethene	<3.2	ug/L	10.0	3.2	10		09/25/23 11:35	79-01-6	
Vinyl chloride	<1.7	ug/L	10.0	1.7	10		09/25/23 11:35	75-01-4	
Surrogates									
Toluene-d8 (S)	100	%	70-130		10		09/25/23 11:35	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		10		09/25/23 11:35	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		10		09/25/23 11:35	2199-69-1	
WI ID SL									
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178									
Pace Analytical Services - Minneapolis									
11CI-PF3OUdS	<0.030	ug/kg	0.11	0.030	1	09/27/23 09:20	09/28/23 21:24	763051-92-9	
4:2 FTS	<0.028	ug/kg	0.11	0.028	1	09/27/23 09:20	09/28/23 21:24	757124-72-4	
6:2 FTS	1.3	ug/kg	0.11	0.050	1	09/27/23 09:20	09/28/23 21:24	27619-97-2	
8:2 FTS	0.14	ug/kg	0.12	0.053	1	09/27/23 09:20	09/28/23 21:24	39108-34-4	
9CI-PF3ONS	<0.030	ug/kg	0.11	0.030	1	09/27/23 09:20	09/28/23 21:24	756426-58-1	
ADONA	<0.043	ug/kg	0.11	0.043	1	09/27/23 09:20	09/28/23 21:24	919005-14-4	
HFPO-DA	<0.033	ug/kg	0.12	0.033	1	09/27/23 09:20	09/28/23 21:24	13252-13-6	
NEtFOSAA	<0.048	ug/kg	0.12	0.048	1	09/27/23 09:20	09/28/23 21:24	2991-50-6	
NEtFOSA	<0.031	ug/kg	0.12	0.031	1	09/27/23 09:20	09/28/23 21:24	4151-50-2	
NEtFOSE	<0.039	ug/kg	0.12	0.039	1	09/27/23 09:20	09/28/23 21:24	1691-99-2	
NMeFOSAA	<0.034	ug/kg	0.12	0.034	1	09/27/23 09:20	09/28/23 21:24	2355-31-9	
NMeFOSA	<0.033	ug/kg	0.12	0.033	1	09/27/23 09:20	09/28/23 21:24	31506-32-8	
NMeFOSE	<0.036	ug/kg	0.12	0.036	1	09/27/23 09:20	09/28/23 21:24	24448-09-7	
Perfluorobutanesulfonic acid	<0.031	ug/kg	0.11	0.031	1	09/27/23 09:20	09/28/23 21:24	375-73-5	
Perfluorodecanoic acid	1.0	ug/kg	0.12	0.027	1	09/27/23 09:20	09/28/23 21:24	335-76-2	
Perfluorohexanoic acid	2.7	ug/kg	0.12	0.033	1	09/27/23 09:20	09/28/23 21:24	307-24-4	
PFBA	1.4	ug/kg	0.12	0.034	1	09/27/23 09:20	09/28/23 21:24	375-22-4	
PFDS	<0.034	ug/kg	0.12	0.034	1	09/27/23 09:20	09/28/23 21:24	335-77-3	
PFDoS	<0.031	ug/kg	0.12	0.031	1	09/27/23 09:20	09/28/23 21:24	79780-39-5	
PFHpS	<0.033	ug/kg	0.11	0.033	1	09/27/23 09:20	09/28/23 21:24	375-92-8	
PFNS	<0.042	ug/kg	0.11	0.042	1	09/27/23 09:20	09/28/23 21:24	68259-12-1	
PFOSA	<0.035	ug/kg	0.12	0.035	1	09/27/23 09:20	09/28/23 21:24	754-91-6	
PFPeA	4.6	ug/kg	0.12	0.034	1	09/27/23 09:20	09/28/23 21:24	2706-90-3	
PFPeS	<0.029	ug/kg	0.11	0.029	1	09/27/23 09:20	09/28/23 21:24	2706-91-4	
Perfluorododecanoic acid	0.16	ug/kg	0.12	0.039	1	09/27/23 09:20	09/28/23 21:24	307-55-1	
Perfluoroheptanoic acid	2.9	ug/kg	0.12	0.042	1	09/27/23 09:20	09/28/23 21:24	375-85-9	
Perfluorohexanesulfonic acid	0.046J	ug/kg	0.11	0.026	1	09/27/23 09:20	09/28/23 21:24	355-46-4	B
Perfluorononanoic acid	4.0	ug/kg	0.12	0.037	1	09/27/23 09:20	09/28/23 21:24	375-95-1	
Perfluorooctanesulfonic acid	0.62	ug/kg	0.11	0.035	1	09/27/23 09:20	09/28/23 21:24	1763-23-1	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Sample: 91520 TCLP & PFAs Lab ID: 40268330001 Collected: 09/15/23 12:00 Received: 09/20/23 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis									
Perfluorooctanoic acid	1.8	ug/kg	0.12	0.037	1	09/27/23 09:20	09/28/23 21:24	335-67-1	
Perfluorotetradecanoic acid	<0.041	ug/kg	0.12	0.041	1	09/27/23 09:20	09/28/23 21:24	376-06-7	
Perfluorotridecanoic acid	0.065J	ug/kg	0.12	0.038	1	09/27/23 09:20	09/28/23 21:24	72629-94-8	
Perfluoroundecanoic acid	0.95	ug/kg	0.12	0.036	1	09/27/23 09:20	09/28/23 21:24	2058-94-8	
Surrogates									
13C2-PFDoA (S)	75	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C2-PFTA (S)	69	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C24:2FTS (S)	76	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C26:2FTS (S)	131	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C28:2FTS (S)	176	%	25-150		1	09/27/23 09:20	09/28/23 21:24		S0
13C2PFHxDA (S)	63	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C3-PFBS (S)	74	%	25-150		1	09/27/23 09:20	09/28/23 21:24	375-73-5	
13C3-PFHxS (S)	75	%	25-150		1	09/27/23 09:20	09/28/23 21:24	355-46-4	
13C3HFPO-DA (S)	43	%	25-150		1	09/27/23 09:20	09/28/23 21:24		
13C4-PFBA (S)	82	%	25-150		1	09/27/23 09:20	09/28/23 21:24	375-22-4	
13C4-PFHpA (S)	73	%	25-150		1	09/27/23 09:20	09/28/23 21:24	375-85-9	
13C5-PFHxA (S)	74	%	25-150		1	09/27/23 09:20	09/28/23 21:24	307-24-4	
13C5-PFPeA (S)	75	%	25-150		1	09/27/23 09:20	09/28/23 21:24	2706-90-3	
13C6-PFDA (S)	77	%	25-150		1	09/27/23 09:20	09/28/23 21:24	335-76-2	
13C7-PFUdA (S)	73	%	25-150		1	09/27/23 09:20	09/28/23 21:24	2058-94-8	
13C8-PFOA (S)	71	%	25-150		1	09/27/23 09:20	09/28/23 21:24	335-67-1	
13C8-PFOS (S)	84	%	25-150		1	09/27/23 09:20	09/28/23 21:24	1763-23-1	
13C8-PFOA (S)	67	%	25-150		1	09/27/23 09:20	09/28/23 21:24	754-91-6	
13C9-PFNA (S)	69	%	25-150		1	09/27/23 09:20	09/28/23 21:24	375-95-1	
d3-MeFOSAA (S)	84	%	25-150		1	09/27/23 09:20	09/28/23 21:24	2355-31-9	
d3-NMeFOSA (S)	25	%	10-150		1	09/27/23 09:20	09/28/23 21:24	31506-32-8	
d5-EtFOSAA (S)	88	%	25-150		1	09/27/23 09:20	09/28/23 21:24	2991-50-6	
d5-NEtFOSA (S)	26	%	10-150		1	09/27/23 09:20	09/28/23 21:24	4151-50-2	
d7-NMeFOSE (S)	50	%	10-150		1	09/27/23 09:20	09/28/23 21:24	24448-09-7	
d9-NEtFOSE (S)	53	%	10-150		1	09/27/23 09:20	09/28/23 21:24	1691-99-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch: 455937

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury TCLP

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40268330001

METHOD BLANK: 2618484

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	09/28/23 06:46	

METHOD BLANK: 2617498

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	09/28/23 07:23	

METHOD BLANK: 2617499

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	09/28/23 07:04	

LABORATORY CONTROL SAMPLE: 2618485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	85-115	

MATRIX SPIKE SAMPLE: 2618486

Parameter	Units	40268563001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.000066 mg/L	5	5.7	113	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2618487 2618488

Parameter	Units	40268330001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	5.3	5.5	105	110	85-115	4 20	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

MATRIX SPIKE SAMPLE:							
Parameter	Units	40268428001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.066	5	5.0	101	85-115	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch: 455795

Analysis Method: EPA 6010D

QC Batch Method: EPA 3015A

Analysis Description: 6010D MET TCLP

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40268330001

METHOD BLANK: 2617793

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.0083	0.025	09/26/23 18:31	
Barium	mg/L	<0.0015	0.0050	09/26/23 18:31	
Cadmium	mg/L	<0.0013	0.0050	09/26/23 18:31	
Chromium	mg/L	<0.0025	0.010	09/26/23 18:31	
Lead	mg/L	<0.0059	0.020	09/26/23 18:31	
Selenium	mg/L	<0.012	0.040	09/26/23 18:31	
Silver	mg/L	<0.0032	0.010	09/26/23 18:31	

METHOD BLANK: 2617494

Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.0083	0.025	09/26/23 19:21	
Barium	mg/L	<0.0015	0.0050	09/26/23 19:21	
Cadmium	mg/L	<0.0013	0.0050	09/26/23 19:21	
Chromium	mg/L	<0.0025	0.010	09/26/23 19:21	
Lead	mg/L	<0.0059	0.020	09/26/23 19:21	
Selenium	mg/L	<0.012	0.040	09/26/23 19:21	
Silver	mg/L	<0.0032	0.010	09/26/23 19:21	

METHOD BLANK: 2617495

Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.0083	0.025	09/26/23 19:29	
Barium	mg/L	0.0020J	0.0050	09/26/23 19:29	
Cadmium	mg/L	<0.0013	0.0050	09/26/23 19:29	
Chromium	mg/L	<0.0025	0.010	09/26/23 19:29	
Lead	mg/L	<0.0059	0.020	09/26/23 19:29	
Selenium	mg/L	<0.012	0.040	09/26/23 19:29	
Silver	mg/L	<0.0032	0.010	09/26/23 19:29	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

METHOD BLANK: 2617496

Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.0083	0.025	09/26/23 18:47	
Barium	mg/L	0.0019J	0.0050	09/26/23 18:47	
Cadmium	mg/L	<0.0013	0.0050	09/26/23 18:47	
Chromium	mg/L	<0.0025	0.010	09/26/23 18:47	
Lead	mg/L	<0.0059	0.020	09/26/23 18:47	
Selenium	mg/L	<0.012	0.040	09/26/23 18:47	
Silver	mg/L	<0.0032	0.010	09/26/23 18:47	

LABORATORY CONTROL SAMPLE: 2617794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.28	0.27	97	80-120	
Barium	mg/L	0.28	0.28	101	80-120	
Cadmium	mg/L	0.28	0.28	101	80-120	
Chromium	mg/L	0.28	0.28	99	80-120	
Lead	mg/L	0.28	0.29	104	80-120	
Selenium	mg/L	0.28	0.28	101	80-120	
Silver	mg/L	0.14	0.14	99	80-120	

MATRIX SPIKE SAMPLE: 2617795

Parameter	Units	40268428001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	<0.0083	0.28	0.27	97	75-125	
Barium	mg/L	2.5	0.28	2.8	98	75-125	
Cadmium	mg/L	<0.0013	0.28	0.28	102	75-125	
Chromium	mg/L	<0.0025	0.28	0.28	101	75-125	
Lead	mg/L	<0.0059	0.28	0.29	104	75-125	
Selenium	mg/L	<0.012	0.28	0.28	102	75-125	
Silver	mg/L	0.018	0.14	0.16	99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2617796 2617797

Parameter	Units	40268493001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	<0.017	0.28	0.28	0.28	0.28	95	96	75-125	2	20	
Barium	mg/L	0.60	0.28	0.28	0.88	0.88	98	99	75-125	0	20	
Cadmium	mg/L	0.0047J	0.28	0.28	0.29	0.29	103	102	75-125	1	20	
Chromium	mg/L	<0.0051	0.28	0.28	0.28	0.28	99	99	75-125	0	20	
Lead	mg/L	<0.012	0.28	0.28	0.29	0.28	103	101	75-125	1	20	
Selenium	mg/L	<0.024	0.28	0.28	0.30	0.30	106	105	75-125	1	20	
Silver	mg/L	<0.0064	0.14	0.14	0.14	0.14	102	102	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

MATRIX SPIKE SAMPLE:		2617798					
Parameter	Units	40268563001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	<0.042	0.28	0.30	95	75-125	
Barium	mg/L	1.4	0.28	1.7	90	75-125	
Cadmium	mg/L	<0.0067	0.28	0.28	101	75-125	
Chromium	mg/L	0.023J	0.28	0.30	101	75-125	
Lead	mg/L	117	0.28	114	-1050	75-125	P6
Selenium	mg/L	<0.061	0.28	0.30	108	75-125	
Silver	mg/L	<0.016	0.14	0.14	102	75-125	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch: 909800

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 40268330001

SAMPLE DUPLICATE: 4789312

Parameter	Units	10669611001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.5	20.6	6	30	N2

SAMPLE DUPLICATE: 4791727

Parameter	Units	10670561003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.0	22.4	2	30	N2

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch:	455574	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV TCLP
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40268330001

METHOD BLANK: 2616375 Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	<0.58	1.0	09/25/23 08:25	
1,2-Dichloroethane	ug/L	<0.29	1.0	09/25/23 08:25	
2-Butanone (MEK)	ug/L	<6.5	25.0	09/25/23 08:25	
Benzene	ug/L	<0.30	1.0	09/25/23 08:25	
Carbon tetrachloride	ug/L	<0.37	1.0	09/25/23 08:25	
Chlorobenzene	ug/L	<0.86	1.0	09/25/23 08:25	
Chloroform	ug/L	<0.50	5.0	09/25/23 08:25	
Tetrachloroethene	ug/L	<0.41	1.0	09/25/23 08:25	
Trichloroethene	ug/L	<0.32	1.0	09/25/23 08:25	
Vinyl chloride	ug/L	<0.17	1.0	09/25/23 08:25	
1,2-Dichlorobenzene-d4 (S)	%	102	70-130	09/25/23 08:25	
4-Bromofluorobenzene (S)	%	100	70-130	09/25/23 08:25	
Toluene-d8 (S)	%	100	70-130	09/25/23 08:25	

METHOD BLANK: 2615200 Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	<5.8	10.0	09/25/23 08:42	
1,2-Dichloroethane	ug/L	<2.9	10.0	09/25/23 08:42	
2-Butanone (MEK)	ug/L	<65.2	250	09/25/23 08:42	
Benzene	ug/L	<3.0	10.0	09/25/23 08:42	
Carbon tetrachloride	ug/L	<3.7	10.0	09/25/23 08:42	
Chlorobenzene	ug/L	<8.6	10.0	09/25/23 08:42	
Chloroform	ug/L	<5.0	50.0	09/25/23 08:42	
Tetrachloroethene	ug/L	<4.1	10.0	09/25/23 08:42	
Trichloroethene	ug/L	<3.2	10.0	09/25/23 08:42	
Vinyl chloride	ug/L	<1.7	10.0	09/25/23 08:42	
1,2-Dichlorobenzene-d4 (S)	%	101	70-130	09/25/23 08:42	
4-Bromofluorobenzene (S)	%	100	70-130	09/25/23 08:42	
Toluene-d8 (S)	%	99	70-130	09/25/23 08:42	

LABORATORY CONTROL SAMPLE: 2616376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	50	52.6	105	73-140	
1,2-Dichloroethane	ug/L	50	51.6	103	70-130	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

LABORATORY CONTROL SAMPLE: 2616376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	51.5	103	70-130	
Carbon tetrachloride	ug/L	50	48.3	97	70-135	
Chlorobenzene	ug/L	50	52.0	104	70-130	
Chloroform	ug/L	50	49.2	98	80-124	
Tetrachloroethene	ug/L	50	48.7	97	70-130	
Trichloroethene	ug/L	50	49.6	99	70-130	
Vinyl chloride	ug/L	50	49.7	99	51-145	
1,2-Dichlorobenzene-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2617282 2617283

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		40268341001 Result	Spike Conc.	Spike Conc.	Conc.							
1,1-Dichloroethene	ug/L	<5.8	500	500	500	458	491	92	98	69-146	7	20
1,2-Dichloroethane	ug/L	<2.9	500	500	500	445	480	89	96	70-130	8	20
Benzene	ug/L	<3.0	500	500	500	449	481	90	96	70-130	7	20
Carbon tetrachloride	ug/L	<3.7	500	500	500	419	455	84	91	70-135	8	20
Chlorobenzene	ug/L	<8.6	500	500	500	450	484	90	97	70-130	7	20
Chloroform	ug/L	<5.0	500	500	500	432	467	86	93	80-126	8	20
Tetrachloroethene	ug/L	<4.1	500	500	500	422	446	84	89	70-131	6	20
Trichloroethene	ug/L	<3.2	500	500	500	432	467	86	93	70-130	8	20
Vinyl chloride	ug/L	<1.7	500	500	500	425	459	85	92	45-147	8	20
1,2-Dichlorobenzene-d4 (S)	%							99	100	70-130		
4-Bromofluorobenzene (S)	%							100	101	70-130		
Toluene-d8 (S)	%							101	100	70-130		

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch: 455790

Analysis Method: EPA 8270E

QC Batch Method: EPA 3510

Analysis Description: 8270E TCLP MSSV

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40268330001

METHOD BLANK: 2617774

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	<3.6	10.0	09/27/23 08:02	
2,4,5-Trichlorophenol	ug/L	<3.6	10.0	09/27/23 08:02	
2,4,6-Trichlorophenol	ug/L	<4.0	10.0	09/27/23 08:02	
2,4-Dinitrotoluene	ug/L	<2.4	10.0	09/27/23 08:02	
2-Methylphenol(o-Cresol)	ug/L	<1.5	10.0	09/27/23 08:02	
3&4-Methylphenol(m&p Cresol)	ug/L	<1.2	10.0	09/27/23 08:02	
Hexachloro-1,3-butadiene	ug/L	<3.3	10.0	09/27/23 08:02	
Hexachlorobenzene	ug/L	<5.0	20.0	09/27/23 08:02	
Hexachloroethane	ug/L	<3.0	10.0	09/27/23 08:02	
Nitrobenzene	ug/L	<3.1	10.0	09/27/23 08:02	
Pentachlorophenol	ug/L	<3.3	10.0	09/27/23 08:02	
Pyridine	ug/L	<14.6	20.0	09/27/23 08:02	
2,4,6-Tribromophenol (S)	%	85	10-141	09/27/23 08:02	
2-Fluorobiphenyl (S)	%	51	23-130	09/27/23 08:02	
Nitrobenzene-d5 (S)	%	70	38-130	09/27/23 08:02	
Phenol-d6 (S)	%	30	11-130	09/27/23 08:02	

METHOD BLANK: 2617500

Matrix: Water

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	<17.8	50.0	09/27/23 12:03	
2,4,5-Trichlorophenol	ug/L	<18.2	50.0	09/27/23 12:03	
2,4,6-Trichlorophenol	ug/L	<20.0	50.0	09/27/23 12:03	
2,4-Dinitrotoluene	ug/L	<11.9	50.0	09/27/23 12:03	
2-Methylphenol(o-Cresol)	ug/L	<7.7	50.0	09/27/23 12:03	
3&4-Methylphenol(m&p Cresol)	ug/L	<6.0	50.0	09/27/23 12:03	
Hexachloro-1,3-butadiene	ug/L	<16.4	50.0	09/27/23 12:03	
Hexachlorobenzene	ug/L	<25.2	100	09/27/23 12:03	
Hexachloroethane	ug/L	<15.1	50.0	09/27/23 12:03	
Nitrobenzene	ug/L	<15.7	50.0	09/27/23 12:03	
Pentachlorophenol	ug/L	<16.3	50.0	09/27/23 12:03	
Pyridine	ug/L	<73.0	100	09/27/23 12:03	
2,4,6-Tribromophenol (S)	%	86	10-141	09/27/23 12:03	
2-Fluorobiphenyl (S)	%	46	23-130	09/27/23 12:03	
Nitrobenzene-d5 (S)	%	69	38-130	09/27/23 12:03	
Phenol-d6 (S)	%	30	11-130	09/27/23 12:03	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

LABORATORY CONTROL SAMPLE: 2617775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	26.4	53	30-130	
2,4,5-Trichlorophenol	ug/L	50	35.7	71	47-130	
2,4,6-Trichlorophenol	ug/L	50	35.4	71	53-130	
2,4-Dinitrotoluene	ug/L	50	38.1	76	61-130	
2-Methylphenol(o-Cresol)	ug/L	50	34.4	69	63-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	31.7	63	58-130	
Hexachloro-1,3-butadiene	ug/L	50	22.1	44	10-130	
Hexachlorobenzene	ug/L	50	43.8	88	61-130	
Hexachloroethane	ug/L	50	21.0	42	12-130	
Nitrobenzene	ug/L	50	40.0	80	70-130	
Pentachlorophenol	ug/L	50	34.6	69	29-130	
Pyridine	ug/L	50	22.9	46	24-130	
2,4,6-Tribromophenol (S)	%			91	10-141	
2-Fluorobiphenyl (S)	%			52	23-130	
Nitrobenzene-d5 (S)	%			74	38-130	
Phenol-d6 (S)	%			35	11-130	

MATRIX SPIKE SAMPLE: 2617776

Parameter	Units	40268330001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	<17.8	250	146	58	30-130	
2,4,5-Trichlorophenol	ug/L	<18.2	250	92.0	37	10-136	
2,4,6-Trichlorophenol	ug/L	<20.0	250	87.5	35	10-131	
2,4-Dinitrotoluene	ug/L	<11.9	250	192	77	15-142	
2-Methylphenol(o-Cresol)	ug/L	<7.7	250	159	64	36-130	
3&4-Methylphenol(m&p Cresol)	ug/L	<6.0	250	140	56	35-130	
Hexachloro-1,3-butadiene	ug/L	<16.4	250	101	41	10-130	
Hexachlorobenzene	ug/L	<25.2	250	199	80	58-130	
Hexachloroethane	ug/L	<15.1	250	96.8	39	12-130	
Nitrobenzene	ug/L	<15.7	250	194	78	64-130	
Pentachlorophenol	ug/L	<16.3	250	58.5	23	10-147	
Pyridine	ug/L	<73.0	250	132	53	10-130	
2,4,6-Tribromophenol (S)	%				50	10-141	
2-Fluorobiphenyl (S)	%				56	23-130	
Nitrobenzene-d5 (S)	%				73	38-130	
Phenol-d6 (S)	%				24	11-130	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

QC Batch: 907953

Analysis Method: ENV-SOP-MIN4-0178

QC Batch Method: ENV-SOP-MIN4-0178

Analysis Description: WI ID SL

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 40268330001

METHOD BLANK: 4780263

Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
11CI-PF3OUdS	ug/kg	<0.025	0.093	09/28/23 20:55	
4:2 FTS	ug/kg	<0.023	0.093	09/28/23 20:55	
6:2 FTS	ug/kg	<0.041	0.094	09/28/23 20:55	
8:2 FTS	ug/kg	<0.043	0.096	09/28/23 20:55	
9CI-PF3ONS	ug/kg	<0.025	0.092	09/28/23 20:55	
ADONA	ug/kg	<0.036	0.094	09/28/23 20:55	
HFPO-DA	ug/kg	<0.027	0.099	09/28/23 20:55	
NEtFOSA	ug/kg	<0.025	0.099	09/28/23 20:55	
NEtFOSAA	ug/kg	<0.040	0.099	09/28/23 20:55	
NEtFOSE	ug/kg	<0.032	0.099	09/28/23 20:55	
NMeFOSA	ug/kg	<0.027	0.099	09/28/23 20:55	
NMeFOSAA	ug/kg	<0.028	0.099	09/28/23 20:55	
NMeFOSE	ug/kg	<0.030	0.099	09/28/23 20:55	
Perfluorobutanesulfonic acid	ug/kg	<0.026	0.088	09/28/23 20:55	
Perfluorodecanoic acid	ug/kg	<0.023	0.099	09/28/23 20:55	
Perfluorododecanoic acid	ug/kg	<0.033	0.099	09/28/23 20:55	
Perfluoroheptanoic acid	ug/kg	<0.034	0.099	09/28/23 20:55	
Perfluorohexanesulfonic acid	ug/kg	0.023J	0.090	09/28/23 20:55	
Perfluorohexanoic acid	ug/kg	<0.027	0.099	09/28/23 20:55	
Perfluorononanoic acid	ug/kg	<0.031	0.099	09/28/23 20:55	
Perfluorooctanesulfonic acid	ug/kg	0.056J	0.092	09/28/23 20:55	
Perfluorooctanoic acid	ug/kg	<0.031	0.099	09/28/23 20:55	
Perfluorotetradecanoic acid	ug/kg	<0.034	0.099	09/28/23 20:55	
Perfluorotridecanoic acid	ug/kg	<0.032	0.099	09/28/23 20:55	
Perfluoroundecanoic acid	ug/kg	<0.030	0.099	09/28/23 20:55	
PFBA	ug/kg	<0.028	0.099	09/28/23 20:55	
PFDoS	ug/kg	<0.026	0.096	09/28/23 20:55	
PFDS	ug/kg	<0.028	0.096	09/28/23 20:55	
PFHpS	ug/kg	<0.027	0.094	09/28/23 20:55	
PFNS	ug/kg	<0.034	0.095	09/28/23 20:55	
PFOSA	ug/kg	<0.029	0.099	09/28/23 20:55	
PFPeA	ug/kg	<0.028	0.099	09/28/23 20:55	
PFPeS	ug/kg	<0.024	0.093	09/28/23 20:55	
13C2-PFDoA (S)	%	90	25-150	09/28/23 20:55	
13C2-PFTA (S)	%	81	25-150	09/28/23 20:55	
13C24:2FTS (S)	%	101	25-150	09/28/23 20:55	
13C26:2FTS (S)	%	123	25-150	09/28/23 20:55	
13C28:2FTS (S)	%	105	25-150	09/28/23 20:55	
13C2PFHxDA (S)	%	86	25-150	09/28/23 20:55	
13C3-PFBS (S)	%	82	25-150	09/28/23 20:55	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

METHOD BLANK: 4780263

Matrix: Solid

Associated Lab Samples: 40268330001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C3-PFHxS (S)	%	84	25-150	09/28/23 20:55	
13C3HFPO-DA (S)	%	66	25-150	09/28/23 20:55	
13C4-PFBA (S)	%	88	25-150	09/28/23 20:55	
13C4-PFHpA (S)	%	85	25-150	09/28/23 20:55	
13C5-PFHxA (S)	%	82	25-150	09/28/23 20:55	
13C5-PFPeA (S)	%	81	25-150	09/28/23 20:55	
13C6-PFDA (S)	%	88	25-150	09/28/23 20:55	
13C7-PFUdA (S)	%	89	25-150	09/28/23 20:55	
13C8-PFOA (S)	%	85	25-150	09/28/23 20:55	
13C8-PFOS (S)	%	93	25-150	09/28/23 20:55	
13C8-PFOSA (S)	%	79	25-150	09/28/23 20:55	
13C9-PFNA (S)	%	81	25-150	09/28/23 20:55	
d3-MeFOSAA (S)	%	90	25-150	09/28/23 20:55	
d3-NMeFOSA (S)	%	77	20-150	09/28/23 20:55	
d5-EtFOSAA (S)	%	91	25-150	09/28/23 20:55	
d5-NEtFOSA (S)	%	81	20-150	09/28/23 20:55	
d7-NMeFOSE (S)	%	77	20-150	09/28/23 20:55	
d9-NEtFOSE (S)	%	80	20-150	09/28/23 20:55	

LABORATORY CONTROL SAMPLE & LCSD: 4780264

4780265

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
11CI-PF3OUdS	ug/kg	0.19	0.15	0.15	83	81	50-150	2	30	
4:2 FTS	ug/kg	0.18	0.16	0.16	89	87	50-150	2	30	
6:2 FTS	ug/kg	0.19	0.17	0.16	92	85	50-150	7	30	
8:2 FTS	ug/kg	0.19	0.19	0.17	100	90	50-150	11	30	
9CI-PF3ONS	ug/kg	0.18	0.15	0.15	82	79	50-150	3	30	
ADONA	ug/kg	0.19	0.16	0.16	86	84	50-150	2	30	
HFPO-DA	ug/kg	0.2	0.18	0.16	91	83	50-150	9	30	
NEtFOSA	ug/kg	0.2	0.17	0.16	84	81	50-150	4	30	
NEtFOSAA	ug/kg	0.2	0.18	0.17	93	86	50-150	8	30	
NEtFOSE	ug/kg	0.2	0.17	0.16	84	79	50-150	5	30	
NMeFOSA	ug/kg	0.2	0.15	0.18	78	89	50-150	13	30	
NMeFOSAA	ug/kg	0.2	0.17	0.18	87	91	50-150	5	30	
NMeFOSE	ug/kg	0.2	0.17	0.16	86	80	50-150	7	30	
Perfluorobutanesulfonic acid	ug/kg	0.17	0.16	0.16	92	90	50-150	2	30	
Perfluorodecanoic acid	ug/kg	0.2	0.18	0.17	92	84	50-150	8	30	
Perfluorododecanoic acid	ug/kg	0.2	0.21	0.18	104	91	50-150	12	30	
Perfluoroheptanoic acid	ug/kg	0.2	0.17	0.17	88	85	50-150	4	30	
Perfluorohexanesulfonic acid	ug/kg	0.18	0.20	0.20	108	109	50-150	1	30	
Perfluorohexanoic acid	ug/kg	0.2	0.18	0.17	92	86	50-150	7	30	
Perfluorononanoic acid	ug/kg	0.2	0.19	0.17	95	87	50-150	8	30	
Perfluorooctanesulfonic acid	ug/kg	0.18	0.22	0.22	122	120	50-150	1	30	
Perfluorooctanoic acid	ug/kg	0.2	0.19	0.18	96	90	50-150	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

LABORATORY CONTROL SAMPLE & LCSD: 4780264		4780265								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Perfluorotetradecanoic acid	ug/kg	0.2	0.18	0.17	90	86	50-150	3	30	
Perfluorotridecanoic acid	ug/kg	0.2	0.19	0.17	94	87	50-150	7	30	
Perfluoroundecanoic acid	ug/kg	0.2	0.18	0.18	93	92	50-150	0	30	
PFBA	ug/kg	0.2	0.22	0.21	112	104	50-150	7	30	
PFDoS	ug/kg	0.19	0.17	0.16	89	83	50-150	6	30	
PFDS	ug/kg	0.19	0.16	0.17	82	90	50-150	10	30	
PFHpS	ug/kg	0.19	0.17	0.15	93	82	50-150	12	30	
PFNS	ug/kg	0.19	0.16	0.16	85	82	50-150	3	30	
PFOSA	ug/kg	0.2	0.19	0.19	98	94	50-150	4	30	
PFPeA	ug/kg	0.2	0.18	0.18	93	89	50-150	5	30	
PFPeS	ug/kg	0.19	0.18	0.16	98	86	50-150	12	30	
13C2-PFDoA (S)	%				84	87	25-150			
13C2-PFTA (S)	%				77	83	25-150			
13C24:2FTS (S)	%				93	92	25-150			
13C26:2FTS (S)	%				112	111	25-150			
13C28:2FTS (S)	%				100	102	25-150			
13C2PFHxDA (S)	%				84	81	25-150			
13C3-PFBS (S)	%				79	81	25-150			
13C3-PFHxS (S)	%				77	82	25-150			
13C3HFPO-DA (S)	%				64	67	25-150			
13C4-PFBA (S)	%				84	87	25-150			
13C4-PFHpA (S)	%				81	82	25-150			
13C5-PFHxA (S)	%				78	81	25-150			
13C5-PFPeA (S)	%				78	80	25-150			
13C6-PFDA (S)	%				85	89	25-150			
13C7-PFUdA (S)	%				82	79	25-150			
13C8-PFOA (S)	%				80	81	25-150			
13C8-PFOS (S)	%				80	86	25-150			
13C8-PFOSA (S)	%				79	80	25-150			
13C9-PFNA (S)	%				82	81	25-150			
d3-MeFOSAA (S)	%				86	79	25-150			
d3-NMeFOSA (S)	%				79	76	20-150			
d5-EtFOSAA (S)	%				80	86	25-150			
d5-NEtFOSA (S)	%				80	76	20-150			
d7-NMeFOSE (S)	%				74	74	20-150			
d9-NEtFOSE (S)	%				78	79	20-150			

SAMPLE DUPLICATE: 4781045

Parameter	Units	40268330001 Result	Dup Result	RPD	Max RPD	Qualifiers
11CI-PF3OUdS	ug/kg	<0.030	<0.030		30	
4:2 FTS	ug/kg	<0.028	<0.028		30	
6:2 FTS	ug/kg	1.3	1.3	2	30	
8:2 FTS	ug/kg	0.14	0.14	5	30	
9CI-PF3ONS	ug/kg	<0.030	<0.030		30	

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

SAMPLE DUPLICATE: 4781045

Parameter	Units	40268330001 Result	Dup Result	RPD	Max RPD	Qualifiers
ADONA	ug/kg	<0.043	<0.043		30	
HFPO-DA	ug/kg	<0.033	<0.033		30	
NEtFOSA	ug/kg	<0.031	<0.031		30	
NEtFOSAA	ug/kg	<0.048	<0.048		30	
NEtFOSE	ug/kg	<0.039	<0.039		30	
NMeFOSA	ug/kg	<0.033	<0.033		30	
NMeFOSAA	ug/kg	<0.034	<0.034		30	
NMeFOSE	ug/kg	<0.036	<0.036		30	
Perfluorobutanesulfonic acid	ug/kg	<0.031	<0.032		30	
Perfluorodecanoic acid	ug/kg	1.0	0.99	3	30	
Perfluorododecanoic acid	ug/kg	0.16	0.16	3	30	
Perfluoroheptanoic acid	ug/kg	2.9	2.9	2	30	
Perfluorohexanesulfonic acid	ug/kg	0.046J	0.047J		30	
Perfluorohexanoic acid	ug/kg	2.7	2.5	8	30	
Perfluorononanoic acid	ug/kg	4.0	3.6	10	30	
Perfluorooctanesulfonic acid	ug/kg	0.62	0.60	3	30	
Perfluorooctanoic acid	ug/kg	1.8	1.7	1	30	
Perfluorotetradecanoic acid	ug/kg	<0.041	<0.041		30	
Perfluorotridecanoic acid	ug/kg	0.065J	0.065J		30	
Perfluoroundecanoic acid	ug/kg	0.95	0.92	4	30	
PFBA	ug/kg	1.4	1.3	8	30	
PFDoS	ug/kg	<0.031	<0.031		30	
PFDS	ug/kg	<0.034	<0.034		30	
PFHpS	ug/kg	<0.033	<0.033		30	
PFNS	ug/kg	<0.042	<0.042		30	
PFOSA	ug/kg	<0.035	<0.035		30	
PFPeA	ug/kg	4.6	4.3	7	30	
PFPeS	ug/kg	<0.029	<0.029		30	
13C2-PFDoA (S)	%	75	80			
13C2-PFTA (S)	%	69	75			
13C24:2FTS (S)	%	76	76			
13C26:2FTS (S)	%	131	136			
13C28:2FTS (S)	%	176	168			S0
13C2PFHxDA (S)	%	63	69			
13C3-PFBS (S)	%	74	75			
13C3-PFHxS (S)	%	75	77			
13C3HFPO-DA (S)	%	43	45			
13C4-PFBA (S)	%	82	83			
13C4-PFHpA (S)	%	73	75			
13C5-PFHxA (S)	%	74	75			
13C5-PFPeA (S)	%	75	76			
13C6-PFDA (S)	%	77	78			
13C7-PFUdA (S)	%	73	75			
13C8-PFOA (S)	%	71	72			
13C8-PFOS (S)	%	84	83			
13C8-PFOSA (S)	%	67	61			
13C9-PFNA (S)	%	69	76			

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QUALITY CONTROL DATA

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

SAMPLE DUPLICATE: 4781045

Parameter	Units	40268330001 Result	Dup Result	RPD	Max RPD	Qualifiers
d3-MeFOSAA (S)	%.	84	88			
d3-NMeFOSA (S)	%.	25	32			
d5-EtFOSAA (S)	%.	88	91			
d5-NEtFOSA (S)	%.	26	33			
d7-NMeFOSE (S)	%.	50	49			
d9-NEtFOSE (S)	%.	53	48			

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QUALIFIERS

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP & PFAs Testing

Pace Project No.: 40268330

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40268330001	91520 TCLP & PFAs	EPA 3015A	455795	EPA 6010D	455851
40268330001	91520 TCLP & PFAs	EPA 7470	455937	EPA 7470	455989
40268330001	91520 TCLP & PFAs	ASTM D2974	909800		
40268330001	91520 TCLP & PFAs	EPA 3510	455790	EPA 8270E	455819
40268330001	91520 TCLP & PFAs	EPA 8260	455574		
40268330001	91520 TCLP & PFAs	ENV-SOP-MIN4-0178	907953	ENV-SOP-MIN4-0178	909006

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

40268330

ALL SHADED AREAS are for LAB USE ONLY

Company: **ChemDesign Products, Inc** Billing Information:

Address: **2 Stanton Street**

Report To: **Thomas Willis** Email To: **twillis@chemdesign.com**

Copy To:

Customer Project Name/Number:

State: **WI** County/City: **Marinette** Time Zone Collected: **[] PT [] MT [] CT [] ET**

Phone: **(715) 735 8263** Site/Facility ID #: Compliance Monitoring? Yes No

Collected By (print): **Thomas Willis** Purchase Order #: DW PWS ID #: Quote #: DW Location Code:

Collected By (signature): Turnaround Date Required: Immediately Packed on Ice: Yes No

Sample Disposal: Dispose as appropriate Return Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Field Filtered (if applicable): Yes No

Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses	Lab Profile/Line:
<p>TCLP - VOC</p> <p>TCLP - SVOC</p> <p>TCLP & RCRA Metals</p> <p>PFAS WI 1033</p>	<p>Lab Sample Receipt Checklist:</p> <p>Custody Seals Present/Intact Y N NA</p> <p>Custody Signatures Present Y N NA</p> <p>Collector Signature Present Y N NA</p> <p>Bottles Intact Y N NA</p> <p>Correct Bottles Y N NA</p> <p>Sufficient Volume Y N NA</p> <p>Samples Received on Ice Y N NA</p> <p>VOA - Headspace Acceptable Y N NA</p> <p>USDA Regulated Soils Y N NA</p> <p>Samples in Holding Time Y N NA</p> <p>Residual Chlorine Present Y N NA</p> <p>Cl Strips Y N NA</p> <p>Sample pH Acceptable Y N NA</p> <p>pH Strips: _____</p> <p>Sulfide Present Y N NA</p> <p>Lead Acetate Strips: _____</p>

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
91520-VOC	Bulk	C	9/15/23	12 pm				X
91520-SVOC	Bulk	C	9/15/23	12 pm				X
91520-RCRA MT	Bulk	C	9/15/23	12 pm				X
91520-PFAS 33	Bulk	C	9/15/23	12 pm				X

LAB USE ONLY:	Lab Sample #	Comments:
	001	

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: **2909312**

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: _____ oC

Cooler 1 Therm Corr. Factor: _____ oC

Cooler 1 Corrected Temp: _____ oC

Comments:

Relinquished by/Company: (Signature) **ChemDesign** Date/Time: **9/18/2023 1200** Received by/Company: (Signature) _____ Date/Time: _____

Relinquished by/Company: (Signature) **WPS** Date/Time: **9/20/23 0945** Received by/Company: (Signature) **pace** Date/Time: **9/20/23 0940**

Relinquished by/Company: (Signature) _____ Date/Time: _____ Received by/Company: (Signature) _____ Date/Time: _____

MTJL LAB USE ONLY

Table #: _____

Acctnum: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page 25 of 28

of: _____

40269330



Packing Slip

CHEMDESIGN PRODUCTS INC

Date: 09/18/23

WE MAKE CHEMISTRY WORK

REQUISITION: Willis Pace Environmenta 09/18/23

Ship to: Pace Environmental
Pace Environmental Lab
1241 Bellevue St, Suite 9

Green Bay, WI 54302

From: Tom Willis
CHEMDESIGN PRODUCTS INC
2 Stanton Street
Marinette, WI 54143
(715)735-8263

FEDEX Priority Overnight

Prepaid by CDPI

24 HOUR EMERGENCY RESPONSE NUMBER 1-800-688-4005 FOR VEOLIA ENVIRONMENTAL SERVICES CONTRACT #201205-024

Quantity	Ship	Description	Lot / Part No	Units
4		Soil Samples		

Received By: _____

Date: _____

Please contact Customer Service at 715-735-8270 with any questions or concerns.

Thank you for your business!

2 Stanton Street, Marinette WI 715-735-9033 fax 715-735-5304

Effective Date: 8/16/2022

Client Name: Chem Design Products

Sample Preservation Receipt Form
Project # 40268330

All containers needing preservation have been checked and noted below.

Yes No N/A

Initial when completed

Date/Time

Lab Lot# of pH paper

Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass						Plastic						Vials					Jars				General		VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)					
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T								ZPLC	GN 1	GN 2		
001																																			2.5 / 5
002																																			2.5 / 5
003																																			2.5 / 5
004																																			2.5 / 5
005																																			2.5 / 5
006																																			2.5 / 5
007																																			2.5 / 5
008																																			2.5 / 5
009																																			2.5 / 5
010																																			2.5 / 5
011																																			2.5 / 5
012																																			2.5 / 5
013																																			2.5 / 5
014																																			2.5 / 5
015																																			2.5 / 5
016																																			2.5 / 5
017																																			2.5 / 5
018																																			2.5 / 5
019																																			2.5 / 5
020																																			2.5 / 5

9/20/23 N/A

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other _____

Headspace in VOA Vials (>6mm) : Yes No N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	125ml poly unpres.
						GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: ChemDesign Products

Courier: CS Logistics Fed Ex Speedee UPS Waltco
 Client Pace Other: _____

Tracking #: 125929100391525470

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SR - 131 Type of Ice: Wet (Blue) Dry None Meltwater Only

Cooler Temperature Uncorr: 17.5 /Corr: 17.0

Temp Blank Present: yes no Biological Tissue is Frozen: yes no

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

WO#: **40268330**

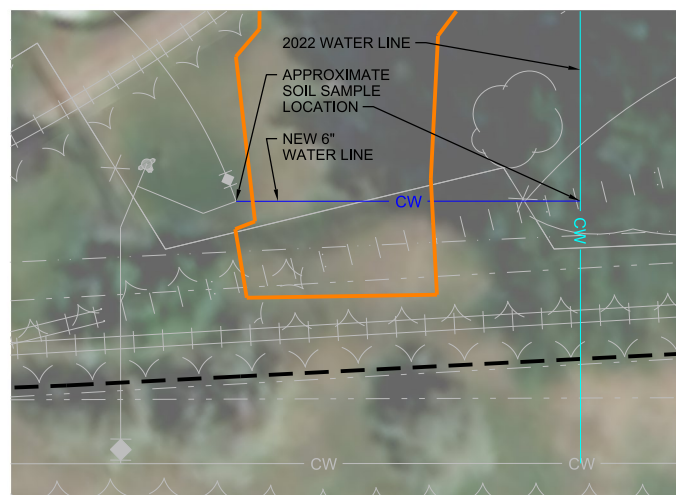
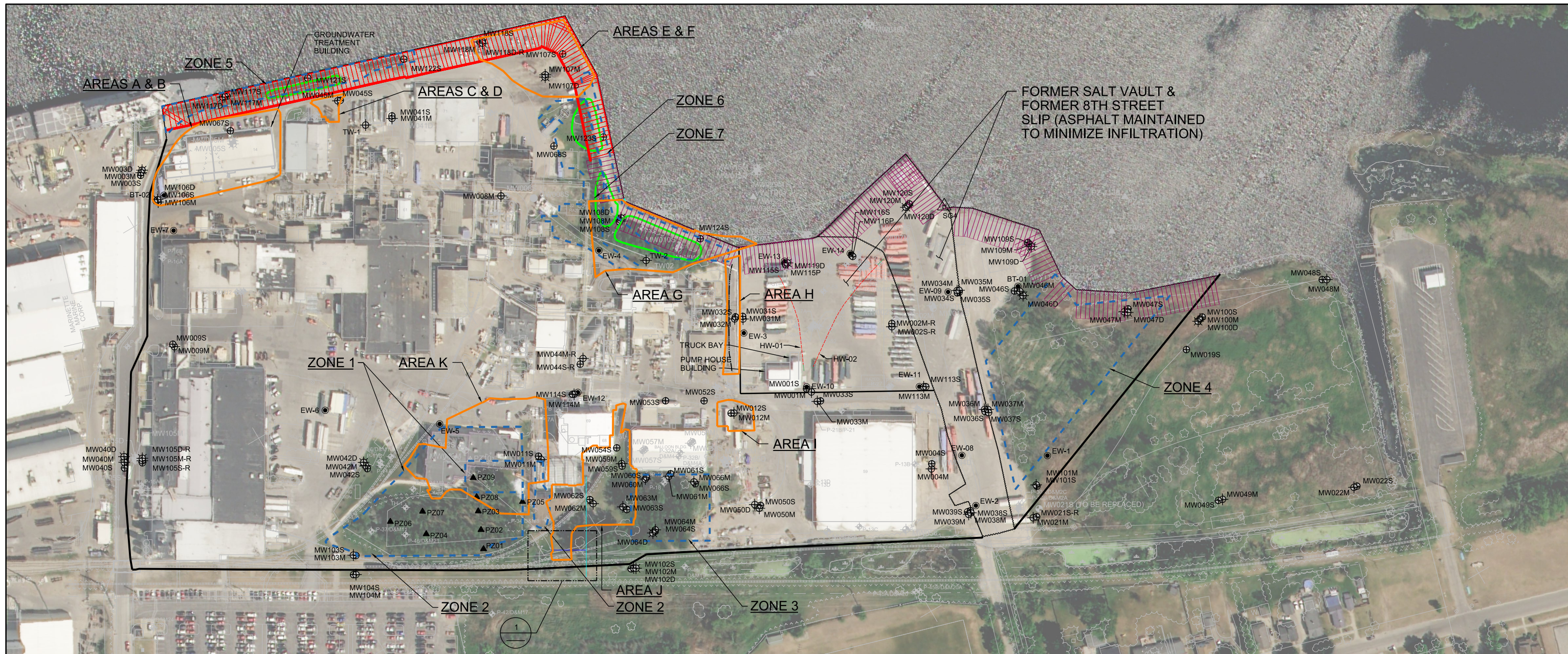
 40268330

Person examining contents:
 Date: 9/20/23 /Initials: NK
 Labeled By Initials: mt

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pg.#, Proj.name/#, preserv 9/20/23 NK</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay</u> , Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>no date/time</u>
-Includes date/time/ID/Analysis Matrix: <u>S</u>		<u>ID IS 91523 instead of 91520 mt 9/20/23 9/20/23 NK</u>
Trip Blank Present.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ If checked, see attached form for additional comments
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: notified PM of over temp 9/20/23 NK
Per client (TDM Willis) - OK to run over temp Alana 9/20/23

Attachment 3



1 ENLARGED PLAN
 0 20 40 60
 SCALE IN FEET

LEGEND

- EW-5 OR BT-02 ● EXTRACTION WELL OR TEST WELL
- MW002S OR MW115P ⊕ MONITORING WELL - SHALLOW OR PEAT
- MW002M ⊕ MONITORING WELL - MEDIUM
- MW002D ⊕ MONITORING WELL - DEEP (BEDROCK)
- PZ04 ▲ PIEZOMETER
- VW-TB01 ▲ VIBRATING WIRE PIEZOMETER
- SG1 ▲ STAFF GAUGE
- ⊙ WELLS PREVIOUSLY ABANDONED OR DESTROYED
- GRAB GROUNDWATER SAMPLE LOCATION
- SHEET PILE WALL
- SLURRY WALL
- - - HORIZONTAL WELL (SCREEN)
- - - HORIZONTAL WELL (RISER)
- - - PHYTO-PUMPING AREAS
- COVER AREA LOCATIONS
- SOIL BERM
- 2010 H-PILE WALL AND TIE-RODS
- 2013 H-PILE WALL AND TIE-RODS

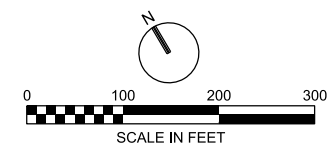


FIGURE 1
 SITE PLAN WITH RCRA COMPONENTS
 AND CHEMDESIGN'S PROPOSED WATER LINE
 TYCO FIRE PRODUCTS LP
 MARINETTE, WISCONSIN

Attachment 4



LEGEND

- Steel Sheet Pile Wall (Vertical Barrier Wall)
- Slurry Wall (Vertical Barrier Wall)
- Approximate Property Boundary

Note:
 1. Imagery Source: Pléiades Neo (PNEO) Satellite
 Acquisition Date: 6/7/2023

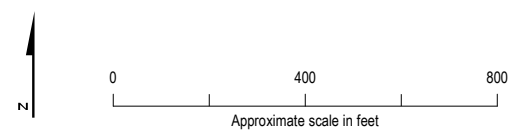
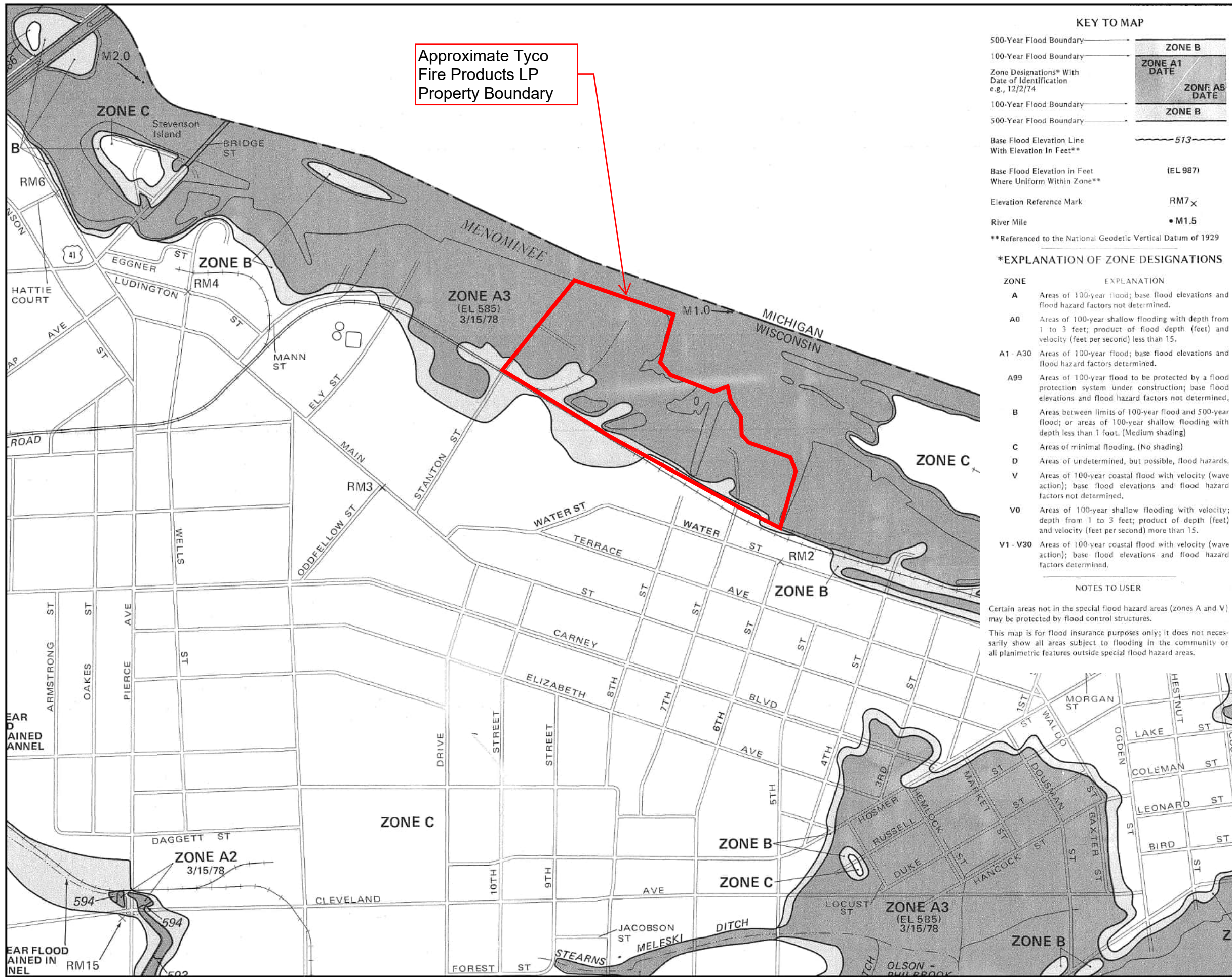


Figure 1. Site Map
 Tyco Fire Products LP
 Marinette, WI



Approximate Tyco Fire Products LP Property Boundary

KEY TO MAP

- 500-Year Flood Boundary
- 100-Year Flood Boundary
- Zone Designations* With Date of Identification e.g., 12/2/74
- 100-Year Flood Boundary
- 500-Year Flood Boundary
- Base Flood Elevation Line With Elevation In Feet**
- Base Flood Elevation in Feet Where Uniform Within Zone**
- Elevation Reference Mark
- River Mile

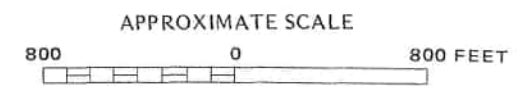
ZONE B
ZONE A1 DATE
ZONE A3 DATE
ZONE B
573
(EL 987)
RM7x
M1.5

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding with depth from 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
A1 - A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100-year flood and 500-year flood; or areas of 100-year shallow flooding with depth less than 1 foot. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V0	Areas of 100-year shallow flooding with velocity; depth from 1 to 3 feet; product of depth (feet) and velocity (feet per second) more than 15.
V1 - V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.
 This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

CITY OF MARINETTE, WISCONSIN
MARINETTE COUNTY

COMMUNITY-PANEL NUMBER
550261 0001 B

PAGE 1 OF 1

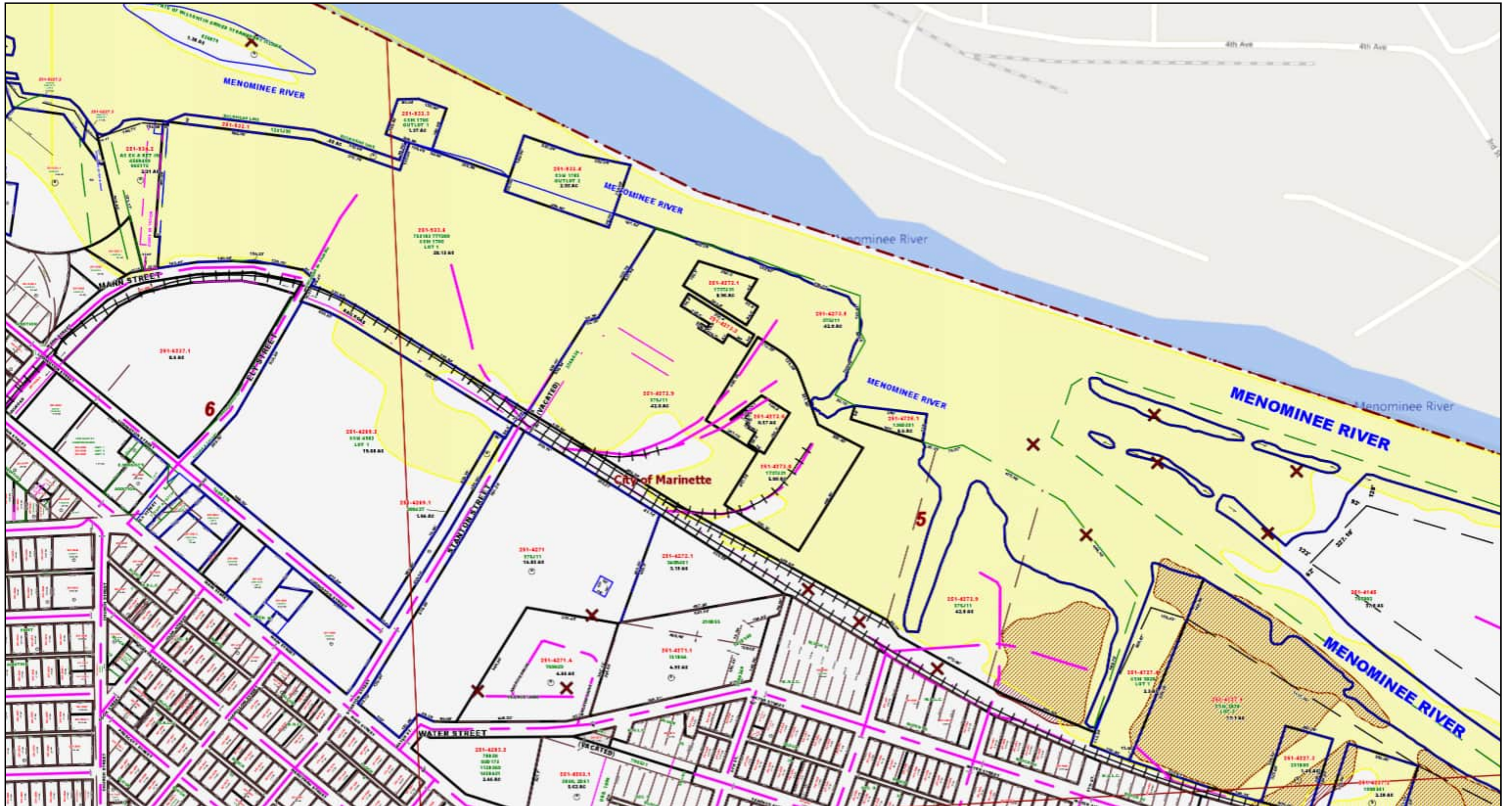
EFFECTIVE
MARCH 15, 1978

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

Figure 2

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

Tyco Fire Products LP



<https://mcgis.marinettecounty.com>

Figure 3



Notice/Disclaimer: The land records site is intended to be a general guide to property and land information, and does not represent a survey of real property nor should it be used or referenced to for conveyance of real property, guaranteeing title thereto or making official determinations of building development, permitting or other activity. Contact the appropriate County Department to obtain original source documents or for official determinations. This information has been developed from various sources and although efforts have been made to ensure accuracy and reliability; errors, omissions and variable conditions originating from compilation and sources used to develop the information may be reflected herein. In addition, land information is constantly changing and the most current or accurate data might not be represented. The information accessible through this site is represented "as is" without warranty of any kind, either expressed or implied, or statutory, including, but not limited to, the implied warranties or merchantability and fitness for a particular purpose. No guarantee of accuracy, completeness or currentness is granted nor is any responsibility for reliance thereon assumed. The user assumes the entire risk as to the quality, use and reliability of the entire information. Marinette County does not accept any liability for damages or misrepresentation of any kind caused by inaccuracies in the information and in no event shall Marinette County, its elected or appointed officials or employees be liable for direct, indirect, incidental, consequential or special damages of any kind.



Feet

0 383.9923988 767.98479