

May 2, 2022

Wisconsin Department of Natural Resources
101 South Webster Street
Madison, Wisconsin 53703

Attention: Ms. Alyssa Sellwood, PE
Telephone: (608) 622-8606
Email: Alyssa.Sellwood@wisconsin.gov

Re: **Response to Limited Site Investigation Report**
ChemDesign Products, Inc.
2 Stanton Street
Marinette, Marinette County, Wisconsin
Terracon Project No. 58197143
BRRTS# 02-38-583852

Dear Ms. Sellwood,

Terracon Consultants, Inc. (Terracon), on behalf of ChemDesign Products, Inc. (CDPI), prepared a *Limited Site Investigation* (LSI) report dated January 3, 2022, pertaining to the above-referenced environmental repair program (ERP) case. The Wisconsin Department of Natural Resources (WDNR) provided comments regarding the LSI in a letter dated March 4, 2022 (WDNR letter). Terracon, on behalf of CDPI, has prepared this letter to provide supplemental information in response to the WDNR's comments.

1.0 BACKGROUND

As noted in the LSI report and previous documents, the CDPI facility consists of approximately 7.4-acres of leased property located within an approximately 65-acre industrial property owned by Tyco Fire Products LLP (Tyco). A separate open ERP case (BRRTS #02-38-581955) associated with the entire Tyco property has been ongoing since 2018. Each ERP case is associated with releases of per- and polyfluorinated alkyl substances (PFAS). The entire Tyco property, including the CDPI facility, is surrounded by slurry and sheet pile containment walls, and a groundwater recovery and treatment system is operating as part of a Resource Conservation and Recovery Act (RCRA) Corrective Action conducted by Tyco and overseen by the United States Environmental Protection Agency (USEPA).

The WDNR's March 4, 2022 letter acknowledged the leasing relationship between CDPI and Tyco, and stated "The DNR is amenable to JCI/Tyco proceeding with a holistic PFAS investigation that covers both BRRTS cases on the property if submittals to the DNR explicitly identify coverage of both BRRTS #02-38-581955 and #02-38-583852 and the scope of work addresses potential sources and pathways from both JCI/Tyco's and ChemDesign's operations".



Tyco submitted an *Additional Site Investigation Work Plan* (Tyco SIWP), dated March 2022 to the WDNR. This work plan references both ERP cases, stating “There may be PFAS associated with Tyco and ChemDesign operations. Except where noted explicitly, the scope of this work plan relates to the entire Site and may apply to both Tyco and ChemDesign operations. The term “site-related PFAS” refers to PFAS present on, or associated with, the Site without distinguishing the source of the material.” This approach is consistent with the WDNR’s March 4, 2022 letter, and with a September 3, 2019, letter from Tyco to the WDNR stating “Pursuant to the Lease Agreement between Tyco and ChemDesign, Tyco, as the owner of the Property and Lessor under the Lease Agreement, will take responsibility for completing the activities under the Site Investigation Workplan for the Property and will continue to work with WDNR with respect to such Workplan as part of Tyco’s ongoing activities at the Property.”

The WDNR’s March 4, 2022 letter requested submittal of a site investigation work plan and additional information with respect to the following:

- Fluorotelomer Sulfonates;
- Sanitary Sewers;
- Air Emissions; and
- Soil Leaching to Groundwater.

Because Tyco has submitted a work plan for additional investigation which encompasses any investigation needed to address the above items, no additional subsurface investigation is needed from CDPI at this time. Terracon, on behalf of CDPI, prepared this letter to provide information requested by the WDNR.

2.0 RESPONSE TO INFORMATION REQUEST

The following sections provide information in response to the WDNR’s March 4, 2022 letter

2.1 Fluorotelomer Sulfonates

The March 4, 2022 WDNR letter noted the “highest concentrations of PFAS detected in the soil and groundwater samples were for the fluorotelomer sulfonates (FTSs) 8:2 FTS and 6:2 FTS”, and requested additional information regarding the source, distribution, and fate of these PFAS.

Tyco submitted a *Site Investigation Status Report* (Tyco SI), dated March 2022, which evaluated the relative concentrations of various PFAS in samples collected from the Tyco property and other investigation areas. The attached Figure 17 from the March 2022 report provides the results of this evaluation. In summary, groundwater samples collected from the unconsolidated soil within the containment wall contained a higher percentage of FTSs as

compared to other investigation areas including groundwater in bedrock and areas outside the containment wall.

Terracon modified Tables 1 (Soil Analytical) and 2 (Groundwater Analytical) which were included in the LSI report to include columns summarizing the total concentration of PFAS, and the fractions associated with 8:2 FTS and 6:2 FTS, which are attached. The total PFAS concentration for each sample was computed by adding together each of the detected concentrations of PFAS; if a PFAS was not present at a concentration above its limit of detection, the concentration was assumed to be equal to the limit of detection. All but one of the LSI soil samples contained a high percentage of 8:2 FTS and 6:2 FTS. The percentage of 8:2 FTS and 6:2 FTS in soil sample P-6(2') was only 17 percent; however, if 10:2 FTS is also included, the percentage of 8:2 FTS, 6:2 FTS, and 10:2 FTS relative to all analyzed PFAS is 93 percent. Each of the LSI groundwater samples contained a high (80 percent or greater) percentage of 8:2 FTS and 6:2 FTS. These results are consistent with those presented in Tyco's *Site Investigation Status Report* and indicate 8:2 FTS and 6:2 FTS are present in groundwater across the area bound by the containment wall. Based on this areawide distribution in both soil and groundwater, combined with lateral dispersion from shallow groundwater (depths of 2 to 3 feet below ground surface (bgs)) in the unconsolidated soil, there is no clear indication of specific sources.

The WDNR's March 4, 2022 letter asked whether FTSs are transforming to other PFAS on the site. Terracon concurs with the WDNR's observation that additional monitoring is likely needed for this evaluation. The Tyco SI indicated groundwater samples were collected from the monitoring well network in October 2021, including monitoring wells within the containment wall (MW004S/M, MW008M, MW011M, MW032S, MW041S, MW044-R-S/M, MW106S/M, and MW108S/D). Consistent with evaluating data from both ERP cases in a holistic manner, groundwater analytical results from the LSI and the October 2021 sampling event were presented on Figure 21 of the Tyco SI and indicate the presence of PFAS in groundwater across the area bound by the containment wall. The Tyco SIWP includes additional groundwater monitoring within and outside the containment wall which may be used for additional FTS analysis.

2.2 Sanitary Sewer

The WDNR's March 4, 2022 letter requested additional information regarding historical sanitary sewer connections from CDPI's facilities and PFAS detections in water samples collected from the sewer system collected during a sanitary sewer rehabilitation process completed by Tyco and documented in a *Sanitary Sewer Rehabilitation Completion Report* dated December 2021. The report referenced two manholes (MH-27 and MH-25) associated with CDPI.

As described in the *Sanitary Sewer Rehabilitation Completion Report*, the sanitary sewer connections between CDPI's facilities and manhole MH-27 were disconnected and abandoned in 2021. The sanitary sewer lateral from CDPI's new building was connected to manhole MH-119. Based on its operations, CDPI believes the detections of PFAS in water samples from manhole MH-27 were associated with continued inflow of groundwater into the sanitary system, which prompted the abandonment of the historical connections and installation of a new sanitary sewer connection.

The *Sanitary Sewer Rehabilitation Completion Report* references a potential PFAS contribution to MH-27 from "a unit process that was used for both process and non-process water". CDPI believes this process was not associated with manhole MH-27 but with an increase of PFAS at manhole MH-25 in 2021, which is also referenced in the report. This increase occurred at manhole MH-25 during the May 2021 sampling event. The concentration of PFOS increased from 2.3 nanograms per liter (ng/L) in January 2021 to 5.2 ng/L in May 2021, and the concentration of PFOA increased from 10 to 25 ng/L. Based on discussions with CDPI, in 2021 an employee charged a chiller system with ethylene glycol that had been taken from a process that utilized PFAS. This resulted in cross-contamination of condensate generated by the chiller, which was discharged to the sanitary sewer system. CDPI was able to trace the source of this discharge through testing, and purged the chiller system of the affected ethylene glycol. Subsequent water samples collected from manhole MH-25 in 2021 exhibited a return to previous PFOA and PFOS concentrations. This event occurred after 2019, which is when the Marinette wastewater treatment plant discontinued its biosolids program.

The Tyco SIWP included the proposed collection of groundwater samples from monitoring wells located south of Building 90, in the vicinity of manhole MH-27. The monitoring wells proposed for sampling included monitoring well MW064D, located within the containment wall, and monitoring wells MW102S/M/D, located outside the containment wall. Soil sampling is not proposed at this time as the sewer laterals were located beneath the water table.

2.3 Air Emissions

The LSI was completed in accordance with a June 2, 2021 work plan. The LSI work plan considered the collection of air samples in response to a previous WDNR request. While preparing the work plan, Terracon reviewed information available from the Interstate Technology and Regulatory Council (ITRC) regarding the collection and analysis of air samples for PFAS. According to the April 2020 ITRC guidance document *Per- and Polyfluoroalkyl Substances (PFAS)*,

"There are currently no USEPA Federal Reference Methods (FRM) or Toxic Organic Methods (TO series) available specifically for the measurement of PFAS compounds in ambient air. PFAS in ambient air have been measured using both active (with actual

flow) and passive (gas diffusion) sampling techniques. The majority of techniques have made use of solid sorbents such as PUF, XAD-2, and sorbent-impregnated PUF (SIP)."

The WDNR's March 4, 2022 letter acknowledged the means for testing the scrubber emissions for PFAS are not currently available. The WDNR's March 4, 2022 letter stated "it may be relevant to consider this pathway with interpreting results from other media sampled for PFAS during the site investigation." The air pathway was considered by the LSI work plan and previous documents, and will continue to be evaluated.

2.4 Soil Leaching to Groundwater

The WDNR requested consideration of the soil to groundwater pathway while evaluating soil sample analytical results. Based on the shallow groundwater, measured at depths of approximately 2.5 to 3 feet bgs during the LSI, and the presence of PFAS in groundwater at concentrations above the enforcement standards proposed by the Wisconsin Department of Health, PFAS could have leached from soil into groundwater. As noted earlier, a containment wall is present around the property, and a groundwater recovery system associated with the RCRA corrective action is operating.

We appreciate your assistance with this project. If you have any questions or comments regarding the attachments or require additional information, please contact us at (414) 423-0255.

Sincerely,



Timothy P. Welch, P.G.
Senior Project Manager

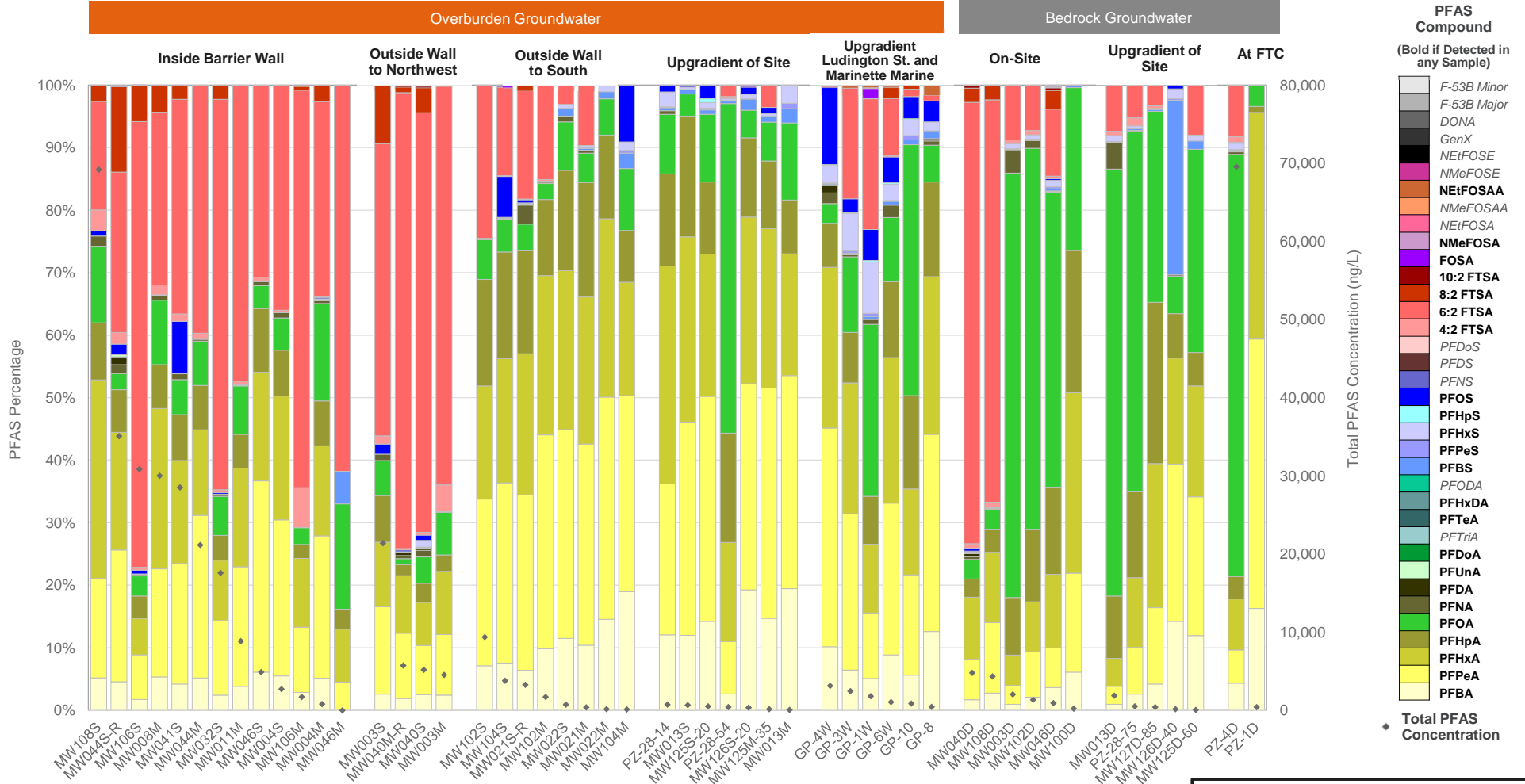
Edmund A. Buc, P.E.
Environmental Department Manager

Enclosures: Figure 17 from March 2022 Site Investigation Status Report
Modified Tables 1 and 2 from January 3, 2022 Limited Site Investigation

TPW/EAB/eab/N:\Projects\2021\58217229\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\05.2022 response letter\2022 work plan FINAL.doc

Overburden Groundwater

Bedrock Groundwater



Notes:

1. All concentrations in nanograms per liter (ng/L).
2. Ludington Street results are direct-push grab groundwater sample collected from 3 to 8 ft below ground surface on October 13, 2021, as reported in Ayers Associates, Soil and Groundwater Testing, WisDOT Project ID: 9995-00-65, Ludington Street, Marinette, WI, January 2022.
3. Marinette Marine sample results collected from approximately 3 to 13 ft below ground surface on 9/29/2020, as reported in Foth Infrastructure and Environment LLC, Investigation to Facilitate Soil and Groundwater Management during the Construction of the Proposed Fincantieri Marinette Marine Hull Erection Building (B34/B35) Fincantieri Marinette Marine – Marinette, Wisconsin, November 2020.

TYCO STANTON STREET FACILITY MARINETTE, WISCONSIN SITE INVESTIGATION STATUS REPORT	
PFAS MIXTURE COMPARISON	
	FIGURE 17

3/16/2022 7:07:10 PM

