



May 4, 2022

Mr. Mark Johnsrud
City of St. Francis Community Development Authority
3400 E. Howard Avenue
St. Francis, WI 53235
Via Email Only to Mark.Johnsrud@stfranwi.org

Subject: Review of Status Report
D F Inc, 2517 East Norwich Avenue, St. Francis
DNR BRRTS Activity #: 02-41-097173; FID #: 241239460

Dear Mr. Johnsrud:

The Department of Natural Resources (DNR) has completed its review of the December 30, 2021 *Status Report* (Report) submitted for the D F Inc site. The Report describes the field investigation activities that have been conducted since the DNR commented on the October 7, 2016 *Site Investigation Work Plan*. These activities included advancing soil borings, installing groundwater monitoring wells and piezometers, and collecting soil, groundwater, and sub-slab vapor samples. Recently obtained and existing analytical data was compiled and displayed on tables and figures. An assessment of potential sources of contamination and the extent of contamination was provided. Future actions were proposed, including additional groundwater sampling, capping the slope between the upper and lower parking lots, and taking steps to prevent contaminated stormwater from entering the storm sewer.

The DNR reviewed the information presented in the Report and identified a number of items, outlined below, likely needed to complete the site investigation. The full scope of remedial actions for this site (which could include the proposed capping and stormwater control) cannot be determined until the site investigation is complete. As the next steps for this project, we recommend completing the site investigation to confirm where contamination is present, what risks must be addressed, and how contamination is migrating through and off the site before any remedial actions are conducted. Once the site investigation is complete a Remedial Action Options Report (RAOR) and Remedial Action Design Report (RADR) can be prepared.

Documentation

Additional figures and documentation required in Wis. Admin. Code § NR 716.15(4) must be provided as part of a future site investigation addendum report. Cross-section and conceptual site model (CSM) figures that clearly display how contaminant migration is occurring at the site, the potential for nearby receptors to be impacted, and how the monitoring well network is positioned to adequately assess the extent of groundwater contamination, are necessary to adequately display the results of the site investigation and for planning future remedial actions. These figures should display geologic units at the site, the location of contaminated groundwater, well and piezometer locations, the water table elevation, offsite sewers, the basement of the main building, basement sumps, and the onsite buried culvert. Other documents that must be provided include a figure depicting the estimated extent of soil impacted by polycyclic aromatic hydrocarbons (PAHs) and metals contamination and development forms for groundwater monitoring wells advanced after 2016.

Soil Contamination

Additional soil samples will need to be collected from behind the main manufacturing building to determine the extent of contamination and to better assess the potential for vapor intrusion.

A remedy such as a cap or barrier will be required in areas of the site where residual soil contamination will remain, to prevent direct contact with underlying soil and to limit infiltration. The RADR should identify areas of the site where existing surface features will be maintained as part of the cap, areas that do not need a cap (due to the absence of significant contamination or a remedial action being taken to reduce contaminant concentrations), and areas where construction of a cap will be needed (such as the unpaved area between the upper and lower parking lots as noted in the Report). The RADR should describe how the cover will be completed and include a draft inspection and maintenance plan.

Groundwater Contamination

The horizontal extent of groundwater contamination identified at depth (detected in PMW-2, PMW-7, PMW-8, and MW-17) must be defined. It is not clear whether MW-18 is positioned appropriately to determine the down-gradient extent of groundwater contamination below the water table as this well is screened at a considerable depth below the other piezometers. Assess whether the extent of groundwater contamination is defined by the existing well network or whether one or more down-gradient piezometers screened at a similar depth to PMW-7 are needed. Providing cross-section figures depicting groundwater contamination, groundwater flow, geology, and the piezometer screen depths would help this assessment.

The Report provides an evaluation of the need to collect samples for analysis of emerging contaminants not previously investigated at this site. The DNR concurs with the proposal to analyze groundwater samples for 1,4-dioxane based on the prevalence of chlorinated solvent contamination. In addition, as plating operations were also conducted at this site and elevated chromium was detected in soil samples, groundwater samples should also be analyzed for hexavalent chromium. The Report did not recommend analyzing samples for PFAS as these compounds are not expected to be associated with past operations of the site. The DNR concurs with this assessment at this time. However, the need to collect groundwater samples for PFAS analysis may need to be reconsidered if a discharge resulting from the plating operations is confirmed. The DNR is aware that some plating facilities that operated before 1995 have used PFAS-containing compounds as part of their operations.

To determine if additional contaminants should be assessed at the site, confirm stable groundwater plumes, and ensure the extent of contamination is defined, continue to collect groundwater samples as follows:

- Wells on the up-gradient and down-gradient ends of the plume should be sampled to determine if additional contaminants (hexavalent chromium and 1,4-dioxane) have impacted the site. These wells include MW-1, MW-2, PMW-2, MW-7, PMW-7, and MW-16. Evaluate the initial sample results to determine if additional sampling rounds, or additional monitoring points, will be needed to define the degree and extent of these contaminants.
- Continue to sample all piezometers and down gradient well MW-5 on a quarterly basis to confirm plume stability and to assess the potential for groundwater to impact offsite properties or utilities.

Closure of this site using natural attenuation as a groundwater remedy requires that groundwater contaminant concentrations will degrade below enforcement standards within a reasonable amount of time. After collecting enough groundwater analytical data to evaluate contaminant trends, consider whether active remediation will be required, in addition to natural attenuation, to meet this requirement. When assessing remedial options, in addition to the criteria outlined in Wis. Admin. Code § NR 722.07, consider that significant soil contamination is present at shallow depths and is easily accessible for treatment or removal, but also whether conducting such an action would have a lasting impact if off-site contaminant sources continue to affect this property.

Vapor Contamination

Additional sub-slab sampling is needed to assess the risk of vapor intrusion at the main manufacturing building. While analysis of the two sub-slab samples collected from under the building did not identify a vapor intrusion risk, additional sampling will be needed to confirm these initial results, provide better coverage throughout the

building footprint, and to assess areas of the building located closer to soil and groundwater contamination. Sub-slab samples should be collected from the two locations previously sampled and at the following locations:

- The western portion of the basement if the water table is low enough to do so.
- The northwestern portion of building where CVOC contamination appears to be present. A method to break through the floor must be determined.
- The central portion of the eastern side of the facility.
- The southern portion of the building.

Each vapor sampling point should be sampled at least twice, preferably during different seasons during peak heating and cooling seasons.

Clarify if the sumps are typically dry and if the sump pumps ever run during wet weather. Determine where the groundwater table is relative to the basement slab. A cross section figure may help depict the locations of the basement, sumps, and water table relative to one-another and demonstrate whether sub-slab samples could be collected from under the basement slab. If standing water is present in the sumps then sample(s) of this water must be collected and submitted for laboratory analysis to determine if it is contaminated and posing a vapor intrusion risk.

The location of the underground conduits and drains in the main manufacturing building need to be identified on a site figure. Summarize available information regarding these features in a site investigation addendum report. Vapor samples should be collected from a selection of access points within the building to determine whether they act as pathways for vapor migration.

The Report indicates that contaminated groundwater migrating off-site to the north of the property will intercept the storm sewer. Determine whether additional vapor sampling is needed to confirm that there is not significant contaminant migration occurring within the sewer pipe (due to infiltration of groundwater) or within utility backfill material.

Steps must be taken to address any vapor intrusion risks identified by this investigation. These may include installing a vapor mitigation system, sealing the basement sumps, collecting indoor air samples, or conducting a source removal action outside the building.

Buried Culvert

The buried culvert appears to be conveying contaminated stormwater to the ditch and storm sewer intake at the north end of the site. Additional assessment as to how the culvert influences contaminant migration is needed. The potential for contaminated groundwater to enter breaks in the pipe and be transported off-site, or for contaminated stormwater to leak out of the pipe and impact surrounding areas, must be determined. Describe the conditions present at the site that would result in contaminated water entering the intake of the culvert. The potential for contaminated soil in the ditch on the north end of the site to be an ongoing source of contamination must also be assessed.

The RADR must outline the steps that will be taken to prevent contaminant migration through the culvert pipe. This may include capping or removing exposed contaminated soil near the intake and outfall portions of the pipe, directing contaminated storm water away from the culvert, removing contaminated water and sediment that has accumulated in the culvert pipe, and sealing the interior of the culvert pipe to prevent groundwater infiltration or leakage. Alternative disposal options to directing the water to the storm-sewer could also be considered. Confirmation samples will need to be collected at the storm sewer to confirm the remedial action was successful.

Observed Waste Above Retaining Wall

The Report indicated that exposed waste material was observed above the retaining wall along the west end of the southern side of the site. A detailed description of the materials observed, noting any visual indicators that the waste has impacted the site, must be provided. Assess whether there is any reason to suspect the waste material is an ongoing source of contamination and what sampling will need to be conducted to confirm this.

The RAOR will need to describe actions that will be taken to address the risk posed by the exposed waste material.

Retaining Wall Seeps

The Report noted that water was observed flowing out of seeps at the base of the retaining wall along the southern side of the site and suggested that this may be a source of contamination. Additional investigation needs to be conducted to assess whether the seepage has impacted and/or will continue to impact this area. This should include:

- Identifying the location of the seeps on site figures.
- Collecting samples of the seep water for laboratory analysis to determine if the water is contaminated.
- Determining if existing soil analytical data is sufficient to demonstrate the impact of the seep water on the site or if additional soil sampling is needed.

This assessment should also include a summary of past uses of the sheet metal building and an evaluation if these uses could have resulted in, or contributed to, the contamination found in shallow soil at the south end of this property.

If the seep water is found to be an ongoing source of contamination, then the RAOR will need to outline the steps that will be taken to resolve the ongoing discharge.

Next Steps

- A site investigation work plan should be submitted per Wis. Admin. Code ch. NR 716.
- Once the items outlined in this letter are addressed, a site investigation addendum report should be prepared and provided to the DNR for review.
- Once the site investigation has been determined to be complete, a RAOE and RADR should be prepared and submitted to DNR to support and describe selected remedial actions.

The applicable review fee should be provided with these submittals if you would like written input from the DNR on proposed or completed actions.

We appreciate your efforts to protect the environment at this site. If you have any questions regarding this review or wish to discuss any of these requests in further detail, please contact me by calling (414) 405-0764, or by email at paul.grittner@wisconsin.gov.

Sincerely,



Paul Grittner
Hydrogeologist - Remediation & Redevelopment Program

cc: Katherine Juno, LF Green Development - katejuno@lfgreendevlopment.com
Tom Gralewicz, Milwaukee Makers LLC - mot@ieee.org