



November 16, 2016

Mr. Mark Johnsrud
City Administrator
3400 East Howard Avenue
St. Francis, WI 53235

SUBJECT: Review of Site Investigation Work Plan,
D F Inc – 2517 E Norwich Avenue, St. Francis, WI
WDNR BRRTS Activity #: 02-41-097173
FID #: 241239460

Dear Mr. Johnsrud:

On October 13, 2016, the Department of Natural Resources (DNR) received the "Site Investigation Work Plan" prepared by your environmental consultant LF Green Development, LLC (LF Green), for the site identified above. The Work Plan proposes the installation and sampling of additional groundwater monitoring wells within four areas of the former D F Inc property (the Site) to investigate the horizontal and vertical extent of groundwater contamination. The DNR concurs that the installation and sampling of the proposed wells will be required to investigate groundwater contamination at this site. However, the installation of these piezometers will not complete the site investigation as other aspects of this project (as described below) have not been completely assessed. These include confirming the source(s) of contamination, demonstrating the extent of contaminated soil and shallow groundwater, assessing the vapor risk posed by residual contamination, and investigating a buried culvert that was reported to be directing contaminated groundwater to the north end of the Site. The DNR recommends that you consider addressing these other items either before, or concurrently with, the installation and sampling of the proposed monitoring well and piezometer.

Proposed Monitoring Well Installation

Groundwater contamination has been identified in monitoring wells on the western side of the Site and at depth in piezometer SPM-4 on the adjacent Kitzinger property (located to the south at 2529 Pennsylvania Avenue). The presence of groundwater contamination in these areas dictates the need to investigate the vertical extent of groundwater contamination. Piezometers are proposed to be installed near existing monitoring wells MW-2, MW-7, and MW-8. These piezometers are positioned appropriately to assess whether groundwater contamination identified in these monitoring wells is migrating vertically downwards or if contamination identified on the Kitzinger property is migrating horizontally onto the Site.

A shallow monitoring well is proposed to be installed north of soil boring location SB-20. The DNR concurs that the installation of this well will better define the shallow groundwater plume at this site. The Work Plan noted that significant contamination was observed in soil boring SB-20 at a depth of 20-22 feet below ground surface. This is deeper than the screened interval for the proposed well. A piezometer must be installed in the vicinity of SB-20 and screened to intersect the 20-22 foot interval, to assess this observed contamination. As stated in the Work Plan, additional groundwater sampling locations will be required if the proposed wells do not define the vertical or horizontal extent of groundwater contamination. Consecutive quarterly rounds of sampling will likely be required at all piezometers to demonstrate groundwater conditions.

Soil samples are proposed to be collected during the installation of monitoring wells. The extent of soil contamination should be assessed, as described below, to confirm that soil samples are needed in these locations and to determine the most useful intervals to collect the samples from.

Additional Items Requiring Assessment

- 1) Source(s) of contamination that impacted the Site must be confirmed to ensure that contamination is being properly investigated. Potential on-site sources include spills that occurred on the Site and contaminated fill material that was imported. The impacts caused by these sources were thought to be minimal compared to that caused by contaminated groundwater flowing onto the Site from a neighboring property such as Kitzinger or the Auto Wreckers property (located to the west of the Site at 4043 and 4005 S. Pennsylvania Avenue), but this was never confirmed. Your consultant should review available data (analytical results, field measurements, and observations) and present their interpretations as to the source(s) of contamination at the Site.
 - a. Assess how an on-site release or fill material is contributing to the overall contamination at this site. Tabulate soil data collected at the Site, compare results to current standards, and determine if soil samples were collected from saturated soils. Prepare an isoconcentration map to depict the extent of soil contamination in saturated and in unsaturated soils. Note that the DNR generally uses the lowest measured watertable to define where saturated soils are located. Isoconcentration maps can be used to identify where additional soil samples are needed to define the extent of unsaturated contaminated soil and to identify potential areas where an on-site source of contamination exists.
 - b. Since an off-site exemption request was denied by the DNR in September, 2003, soil and groundwater samples were collected at the Kitzinger property which identified significant VOC contamination. The potential for an offsite source of contamination should be reassessed based on this new data. Providing cross-section figures depicting both the Site and Kitzinger properties would be helpful in demonstrating your assessment. These figures should depict the high and low watertable elevations, geology, soil sample locations, measured contaminant concentrations, the retaining wall built between the properties, utilities, and any other features that can be used to demonstrate how contamination has migrated onto the Site. Soil and groundwater contour maps should also be used to support an argument for an offsite source. Obtaining access to sample monitoring wells at the Kitzinger property concurrently with on-site wells will likely be necessary to complete this assessment as well.

If the assessment confirms that an offsite source is contributing to contamination at the Site you may not be wholly responsible to address the contamination.

- 2) Groundwater contamination measured at the furthest down-gradient wells (MW-4 and MW-5) have contaminant concentrations above the Wis. Admin. § NR 140 (2012) Enforcement Standards. The extent of shallow groundwater contamination is therefore not completely defined. However, based on declining VOC concentrations measured at these wells over subsequent sampling events, the DNR is not recommending additional shallow monitoring wells be installed on the northern side of East Norwich Avenue at this time. Sampling of onsite

monitoring wells should continue until it can be clearly demonstrated that the groundwater plume is stable or receding and that residual contamination will not pose a risk to neighboring properties. This demonstration must include updated groundwater contaminant contour maps.

The DNR agrees that a monitoring well should be installed north of SB-20 as proposed in the Work Plan. A monitoring may also be needed between MW-4 and MW-7 to define the extent of free product and to assess whether MW-4 and MW-5 are positioned appropriately to determine the down-gradient extent of contamination. You should consider soil and groundwater analytical data, groundwater flow direction in that part of the Site, and the presence of free product at MW-7 to determine whether or not this additional monitoring well would provide useful information.

- 3) An assessment must be conducted to determine if a vapor intrusion risk exists at onsite and nearby buildings. The assessment must also determine if utility corridors or other features exist that may act as preferential pathways of vapor migration. Subslab vapor samples must be collected at buildings where a risk is identified. If the potential for vapor intrusion is not investigated at the onsite buildings, and the buildings are still present at the site when this case is closed, they will be required to stay vacant until a vapor intrusion investigation or remediation is conducted.
- 4) The site investigation will need to address whether the culvert that runs through the site is still directing CVOC impacted groundwater towards Norwich Avenue where it discharges. Assess the need for additional investigation outside the discharge end of the culvert to determine the extent of contamination.

We appreciate your efforts to restore the environment at this site. If you have any questions regarding any of the above items, please contact me at (414) 263-8541 or by email at paul.grittner@wisconsin.gov.

Sincerely,



Paul Grittner
Hydrogeologist
Remediation & Redevelopment Program

cc: Linda Fellenz, LF Green Development, LLC, 5600 W. Brown Deer Road, Suite 120, Milwaukee, WI 53223 (electronic)
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