



May 30, 2023

Mr. Shane LaFave
Roers Companies
110 Cheshire Lane, Suite 120
Minnetonka, MN 55305
Via Email Only shane@roerscompanies.com

Subject: Technical Assistance Provided – Review of Revised Additional Vapor Mitigation System Commissioning Plan for Community Within the Corridor West Block
3212 W. Center Street, 2727 N. 32nd Street, & 2758 N. 33rd Street, Milwaukee, WI
BRRTS #02-41-587376, FID #341333190

Dear Mr. LaFave:

On April 25, 2023, the Wisconsin Department of Natural Resources (DNR) received a *Revised Additional Vapor Mitigation System Commissioning Plan*, dated April 17, 2023, prepared by K. Singh and Associates, Inc. (K. Singh) on behalf of Community Within the Corridor, Limited Partnership (CWC), for the site identified above. On April 27, 2023, K. Singh presented an updated schedule for the commissioning plan (collectively, the Report). The Report was submitted with a technical assistance request fee of \$700 for DNR review and written response. The DNR reviewed the Report for compliance with Wisconsin Statutes (Wis. Stats.) ch. 292 and Wisconsin Administrative (Wis. Admin.) Code NR 700-754. The DNR conceptually approves the commissioning plan, as presented in the Report, with comments and recommendations, as outlined below.

Report Summary

The Report presented the following plan for additional vapor mitigation system (VMS) commissioning for Buildings 6, 7, 8A, and 8B at the site, which is scheduled to occur in May 2023:

1. Perform one round of subslab pressure field extension (PFE) measurements at locations SVP-1 to SVP-16 in Buildings 6, 7, 8A, and 8B.
2. Perform one round of passive indoor air (IA) samples at seventeen locations on the first floor and basements of Buildings 6, 7, 8A, and 8B. Sample locations include IA-6-Basement, IA-8A-Basement, IA-6-01A, IA-6-01B, IA-6-01C, IA-7-01A, IA-7-01B, IA-7-01C, IA-7-01D, IA-8A-01A, IA-8A-01B, IA-8A-01C, IA-8A-01D, IA-8B-01A, IA-8B-01B, IA-8B-01C, and IA-8B-01D. A passive indoor air sample will also be collected from OA-6/7/8A/8B-Background.
3. Perform discrete sampling at twenty locations on the second and third floors using portable gas chromatograph (GC) methodology. Sample locations include IA-06-02A, IA-06-02B, IA-06-02C, IA-7-02A, IA-7-02B, IA-7-02C, IA-8A-02A, IA-8A-02B, IA-8A-02C, IA-8A-02D, IA-8B-02A, IA-8B-02B, IA-8B-02C, IA-8B-02D, IA-8A-03A, IA-8A-03B, IA-8A-03C, IA-8A-03D, IA-8A-03E, and IA-8A-03F.
4. A commissioning report will be presented 10 days after the receipt of laboratory results.

The Report indicates that the above-outlined commissioning round will occur in conjunction with the second commissioning event for Buildings 4 and 5, and that the third commissioning event for Buildings 4 and 5 is planned to occur no later than July 2023.

Report Review

The DNR provides the following comments and recommendations pertaining to the commissioning plan presented in the Report:

1. The DNR agrees that PFE measurements should be collected in Buildings 6, 7, 8A, and 8B.
 - a. The DNR recommends that PFE measurements be collected from all the original sample points (i.e., at SVP-1 to SVP-16) to demonstrate that the VMS captures the entire footprint of Buildings 6, 7, 8A, and 8B. If any of the original sample points are no longer accessible, then replacement PFE locations immediately adjacent, or as close as feasible, to the original location(s) are necessary to adequately demonstrate that the PFE from the VMS covers the entire building footprint. Ensure areas located near the previously identified subslab vapor risk screening level (VRSL) exceedance of trichloroethene (TCE) at sample location WB-SS-4 have sufficient PFE. The past two commissioning events have not included SVP-2 to SVP-6, which are located near WB-SS-4 in Building 8A.
 - b. If any of the former PFE measurement locations are no longer accessible/have been abandoned, provide information on how these were abandoned. Provide this information in future commissioning reports.
2. The DNR agrees that all seventeen indoor air sample locations on the first floor and in basements should continue to be sampled during the commissioning process. The DNR provides the following input on indoor air sampling within the first floor and basements:
 - a. In order to provide accurate concentration measurements, passive samplers should be placed in locations with adequate air flow. This is particularly important with samplers that have a higher uptake rate, such as the Radiello 130, which has been previously used at this site. The DNR recommends the following during passive indoor air sampling:
 - i. Place samplers at a minimum of 6 inches from walls.
 - ii. Place samplers in areas of adequate air flow. Consult with the laboratory regarding the minimum air flow recommended for the selected sampler. In areas with low air movement (such as vacant spaces where HVAC systems are not operating), providing adequate air movement with a small fan or running the HVAC fan should be considered.
 - iii. Place samplers near the breathing zone, three to five feet above the ground for adult occupants and lower for child occupants, as such samplers would be placed for a day-care center or school. Place samplers where they will not be disturbed.
 - iv. Document the sampler placement using a description, sketch, and/or photograph. Provide photographs in future submittals of typical deployment in at least two sample locations.
 - b. Given the subslab vapor contamination identified at WB-SS-4 during site investigation and the tetrachloroethene (PCE) identified at the vapor action level (VAL) at IA-8A-01B during the first commissioning event, the DNR strongly recommends that additional passive indoor air sampling occur in residential unit 107 (Building 8A) in the upcoming commissioning event and during all future commissioning events.
 - c. Given the subslab vapor contamination identified at WB-SS-19 during site investigation and the TCE identified at the VAL at IA-7-01A during the second commissioning event, the DNR strongly recommends that additional passive indoor air sampling occur in residential unit 149 (Building 7) in the upcoming commissioning event and during all future commissioning events.
 - d. The DNR recommends collection and analysis of samples using the GC methodology in every residential unit on the first floor of the building, including the units being assessed with passive air samplers. To provide confirmation of the results from the passive samplers, given that samples have not been previously collected in these residential units, the DNR recommends collecting and analyzing discrete samples using the GC methodology from residential units 107 and 149 at the same time passive samplers are placed and collected.

- e. The DNR recommends providing relevant quality assurance/quality control information for the GC sampling method, such as a description of how the instrument is calibrated, frequency of calibration, calibration results, etc. This information can be provided in future commissioning reports.
3. In the Report, K. Singh asserts that further passive indoor air sampling on the second and third floors of the buildings is not needed because TCE is heavier than air and no TCE has ever been detected in the facility above ground level based on three previous rounds of testing. Although pure TCE is heavier than air or water, air with low concentrations of TCE is not sufficiently dense that movement into upper levels of a building by diffusion or advection is prevented. Ground floors are a greater concern with vapor intrusion because that is where the contaminant typically enters. Pathways such as stairwells, elevator shafts, and plumbing conduits can provide a more direct pathway for contaminants into upper levels of a building. In September 2022 TCE was detected on the second floor of the building, within a stairwell at sample location IA-8A-02B at a concentration of just below the applicable VAL. Given the information presented to the DNR to-date, the DNR recommends the sampling plan for the second and third floors be revised to only include indoor air sampling near/within the elevators and stairwells of Buildings 6, 7, 8A, and 8B. Analysis of samples using the GC is an acceptable method for the upcoming commissioning event on the second and third floors of the building.
4. As indicated above, the upcoming commissioning event for Buildings 6, 7, 8A, and 8B will take place concurrently with additional commissioning planned at Buildings 4 and 5. The DNR provides the following feedback concerning upcoming commissioning events for Buildings 4 and 5:
 - a. The DNR recommends that the same sampling procedures outlined in paragraph 2 above are implemented when conducting passive sampling in Buildings 4 and 5.
 - b. In January – February 2023, nine passive samplers were deployed in Buildings 4 and 5 during the first commissioning event for these buildings. TCE was not detected in the indoor air samples collected during this commissioning event. However, given Building 4’s large size, number of rooms, future use as a daycare facility, and the multiple separate HVAC zones, the DNR recommends that the planned passive indoor air sampling locations be supplemented with collection and analysis of air samples in additional locations using the GC methodology. This indoor air sampling should occur in target areas where subslab vapor concentrations were highest (based on data collected during previous subslab vapor investigations), locations with slab penetrations (i.e., bathrooms, laundry rooms, etc.), and in the planned daycare area.
5. If any indoor air data is above the VAL or if PFE measurements are not adequate for a given commissioning event at the site, CWC must take actions as necessary to address exposure pathways to minimize the threat to public health and the environment, per Wis. Admin. Code § NR 708.11(1) and (3). After taking any necessary action, the commissioning process may restart.

Next Steps

In accordance with administrative code requirements, CWC may continue with the commissioning process for CWC-West Block as follows:

- Per Wis. Admin. Code § NR 716.14(2), submit all sampling results within 10 days of receiving laboratory data. Immediate notification of results upon receipt should be provided when a building is occupied and there is exposure to an acute (immediate) health risk (e.g., TCE is present above the VAL and women of child-bearing age may be present).
- As specified in the Report, CWC will provide a commissioning report following the upcoming commissioning event.
- Per Wis. Admin. Code § NR 724.15, submit a construction documentation or as-built report within 60 days after the VMS commissioning is completed for all site buildings. This report should include comprehensive documentation of the commissioning of the system.

- Wisconsin Admin. Code § 724.13(1)(d) provides that “[v]apor mitigation systems and remedial actions designed to address vapor migration shall be monitored at a frequency determined by the department, to measure whether the action taken has been effective in meeting the vapor action level.” Based on site-specific conditions present at the site, including presence of TCE and PCE in the subslab vapor beneath the building, the acute exposure health risks of TCE, complexity of the building structure and VMSs, and previously identified exceedances of the VAL for TCE and PCE in the multi-family residential site buildings, the DNR has determined that CWC must monitor the VMSs on a continuous basis. Please determine how continuous monitoring will be achieved and, in accordance with Wis. Admin. Code § 724.13(2), submit an interim operation, maintenance, and monitoring (OM&M) plan for all VMS components. It is strongly recommended that CWC consider adding audible alarms to the continuous monitoring of the VMSs to alert building occupants of system failures as well as instrumentation, such as telemetry, to allow immediate notification of a person directly responsible for arranging repairs in the event of a system malfunction. Continuous monitoring of the VMS should also include the use of manometers to verify operational parameters. Per Wis. Admin. Code § NR 724.13(2)(c), include a contingency plan in the OM&M plan for anticipated or potential operation and maintenance problems, including a plan for how CWC will address a loss of electrical power to the system. It is strongly recommended that a backup power system is considered to address this potential situation.

The DNR appreciates the actions you are taking to restore the environment at this site. If you have any questions concerning the site or this letter, please contact me at (414) 435-8021, or by email at jane.pfeiffer@wisconsin.gov.

Sincerely,



Jane K. Pfeiffer
Project Manager – Hydrogeologist
Remediation & Redevelopment Program

cc: Mr. Que El-Amin, Scott Crawford, Inc. – que@scott-crawford.com
Mr. Robert Reineke, K. Singh & Associates, Inc. – rreineke@ksinghengineering.com
Dr. Pratap N. Singh, K Singh & Associates, Inc. – psingh@ksinghengineering.com