April 29, 2021

Ms. Jennifer Dorman **Project # 40441**
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2300 North Martin Luther King Drive
Racine WI, 53212

Subject: **Proposed Modification of Vapor Mitigation / Extraction System for Community Within the Corridor – East Block**
2748 N 32nd Street, Milwaukee, WI 53208
BRRTS # 02-41-263675 FID 241025400

Dear Ms. Dorman:

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) submits a proposed modification of the vapor mitigation / extraction system of the referenced site. This modification is based on the review letter the Remedial Action Design Report received on April 9, 2021 and a conference call held on April 9, 2021 involving the WDNR, Community within the Corridor Limited Partnership, and KSingh. A copy of the review letter is included in Attachment A. KSingh requests that the WDNR review this response and grant approval to proceed with installation of the vapor mitigation system piping system. A Technical Assistance Fee in the amount of $700 is attached with this letter. KSingh requests a review by May 7, 2021.

Project Background

The Community Within the Corridor Limited Partnership is proposing to redevelop the property into a mix of affordable housing, commercial spaces, and other amenities. The proposed development includes the following: The Corridor Lofts (64 Units), Creme City Lofts (36 Units) & 30 Square Townhomes (6 Units) and the Briggs Apartment Homes (91 Units) and a Community Service Facility which will include early childhood education, Science, Technology, Engineering, Art & Math after school programming, a health club (Basketball, Volleyball & Futsal, Skatepark), laundromat and a petite grocery store. The property has been rezoned Industrial Mix to facilitate development of the project.

No demolition of existing buildings is planned. The building interiors will be renovated and reconfigured. A ramp will be constructed to utilize the basement as a parking garage. Paved areas will be milled and paved or have pavement removed, be regraded, and then restored with asphalt.

The property was previously investigated and granted Case Closure with continuing obligations as an industrial property under BRRTS # 02-41-263675. KSingh was retained to perform environmental consulting services for the redevelopment of the property. Following a Phase I Environmental Site Assessment, a Phase II Environmental Site Assessment, and Sub-Slab Vapor Sampling Memorandum, a Post-Closure Modification

Request was submitted to the WDNR on July 8, 2020. Following submission of the Post-Closure Modification Request, KSingh performed a Sub-Slab Vapor Investigation of the building. The locations of the sub-slab vapor probes are shown on Figure 1.

The findings from the sub-slab vapor sampling activities are described as follows:

- Contamination related to chlorinated solvents consisting of TCE, Vinyl Chloride, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, and/or Benzyl Chloride exceeds Residential VRSLs and/or Large Industrial / Commercial Building VRSLs below much of the building.
- TCE is the most widespread contaminant of concern under the building and is associated with past industrial uses of the facility.
- Petroleum VRSL exceedances are located in the northeast portion of the building and are associated with the previously closed Leaking Underground Storage Tank case.

Based on the Sub-Slab Vapor Investigation, it was determined by the WDNR that a vapor mitigation system would be required for the facility in addition to the construction and maintenance of engineered barriers. Pressure field extension (PFE) testing was performed in February 2021. Based on the findings of the PFE testing, as well as additional vapor and soil sampling, the following reports were submitted for review.

- Update to Post Closure Modification Request / Remedial Action Plan – March 19, 2021
- Feasibility Study and Design – Vapor Mitigation System – March 10, 2021
- Additional Soils Investigation – March 24, 2021

Based on the findings of the additional investigations, WDNR has decided to reopen the case and has requested additional site investigation to complete a NR 716 Site Investigation. A Site Investigation work Plan is currently being prepared. However, in regard to the building itself, the vapor investigation is complete. and we have requested that WDNR grant approval of the vapor mitigation / extraction system. The WDNR responded with additional questions and comments in a letter dated April 9, 2021 and KSingh has prepared the following response.

<u>Remedial Action Review Response</u>

KSingh has prepared a response to WDNR's comments and questions in regard to the Remedial Action Plan for vapor intrusion in the order which they are included in the letter with WDNR's comments and questions presented in italics. KSingh's responses are as follows.

A. Vapor remediation

1. Discuss how the reduction in the mass and concentration of the contamination at the site will be measured during the operation of the SVE system. Provide the calculation(s) that will be applied to monitor the reduction in mass and concentration of contamination. Please note that if the selected remediation does not show a reduction in the mass and concentration of contamination, then additional remedial action will be required prior to case closure.

KSingh has proposed in the Remedial Action Plan monthly exhaust air sampling or installation of a dedicated real time PID for monitoring exhaust during operation. The monthly exhaust testing concentrations will be multiplied by the exhaust flow rate, currently estimated at 200 scfm per blower but which will be measured in operation utilizing flow meters, and then multiplied by the time the blower operated each month to arrive at a mass removed estimate for each month. The conversion is based on 1 mg/m^3 equals $6.24279606 \times 10^{-8}$ $pounds/foot^3$. KSingh will track the air concentrations over time and the accumulated mass removal in a

spreadsheet to track progress towards completion of remediation. The total removed will be tracked graphically and a flattening of the curve should indicate when remediation has been achieved.

KSingh's design goal, based on 4 pore volumes removed per day, would be to remove 5,000 pore volumes of in approximately 3.5 years which the United States Army Corps of Engineers (USACE) has provided as a benchmark for completing remedial action using soil vapor extraction in USACE's publication "Soil Vapor Extraction and Bioventing Engineering Manual, EM 1110-1-4001". Further confirmation will be based on sub-slab vapor sampling to confirm VRSLs are not exceeded.

2. Discuss the specific goal(s) for the SVE system as a remedial action. Provide an estimate for the mass of the contamination that will be removed during the operation of the SVE system.

The specific goal of the SVE system is to remove a sufficient mass of contamination that any residual contamination does not represent a residential vapor risk. KSingh estimates that there is approximately 89 pounds of TCE present in soils beneath the building. Please refer to Table 1 and Figure 2 for a calculation of the mass of TCE present. KSingh's goal for operation of the system and associated removal of contaminated soil is to remove enough TCE to achieve residential VRSL goals, with contamination removal tracked in relation to a total estimate of 89 pounds of TCE. The 89 pounds of TCE is a very conservative estimate based on a 4-foot thick vadose zone and an assumption that concentrations are consistent through the full depth of the vadose zone. In addition, removal of TCE will also depend on the interconnectedness of pores, moisture content, and the amount of carbon in the subsurface. As a result, we expect that less than 89 pounds of TCE will be recovered and that 89 pounds removal will not be an achievable or applicable goal.

Rather, demonstration of sufficient mass removal will be 3 months of no detection of TCE in the SVE system discharge. The system will be cycled off for three weeks and then turned back on to determine if residual vapors exist. If no residual vapors are detected in the exhaust after cycling, sub-slab vapor sampling at the historic highest concentrations of TCE in the subsurface will be performed with shutdown of the system for a minimum of 2 weeks to document achievement of remediation goals. Sub-slab depressurization at a lower flow rate may be proposed following soil vapor extraction.

Please also note that the VRSLs used to assess risk are based on a standard residential / small commercial attenuation factor of 0.03. Given the large size of the building, a more realistic attenuation factor may be 0.01, the large industrial building attenuation factor, which would suggest a TCE VRSL of 210 ug/m^3 for residential protection. We do not propose to use that VRSL, but simply note that the goal of reducing TCE vapor concentrations to 70 ug/m^3 or less is very conservative.

To accomplish sufficient TCE removal, KSingh is proposing that removal of concrete and excavation of the top 6 inches of underlying clay be performed in the area of the greatest TCE concentrations in soil as shown on Figure 3. Approximately 320 tons of soil are proposed to be removed as part of hotspot removal which will account for approximately 6.4 pounds of TCE. Another 2.4 pounds of TCE are estimated to be removed for trenching for the vapor extraction system and utilities which will bring the overall total to 8.8 pounds of TCE removed. The clay soils will be replaced by granular fill, covered with a 10-mil plastic vapor barrier, and the concrete will be restored. The granular fill will accentuate vapor recovery in the area of highest residual contamination and guarantee depressurization under the sub-slab of residential apartments.

KSingh anticipates that performance goals will be sufficient to achieve Case Closure goals rather than an arbitrary estimate of TCE to be removed. KSingh estimates 10,000 pore volumes to be sufficient but if cleanup

goals are not met the alternative approach is to extend the duration of soil vapor extraction. It must be noted however, that the primary goal of sub-slab depressurization is to achieve negative pressure to protect the residential inhabitants of the building. Maintaining sub-slab depressurization indefinitely is part of the overall plan and is expected to be a continuing obligation.

B. Vapor Mitigation
1. Vapor mitigation system
i. The current density of sub-slab vapor probes used to investigate sub-slab vapors beneath the building are likely not dense enough to capture all of the source areas and/or areas with VRSL exceedances, especially given the nature of the subsurface soils (i.e., clay soils with high moisture content). Therefore, the DNR has determined that the VMS must be effective in all areas of the building. Revise the system as necessary.
a. Discuss whether the potential for diffusion has been evaluated, per Section 8.1.2. of RR-800, Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin. Evaluate and discuss whether the high concentrations of TCE in vapors (such as at SS-25) could result in enough diffusion of vapors through the 4-inch thick concrete slab to present a concern of vapor intrusion regardless of the operation of the VMS.

KSingh has added several additional legs to the vapor mitigation / extraction system to effectively cover all areas of the building. The revised vapor mitigation system is shown on Figure 1. Measurements will be made during a pilot test and the commissioning process to document that sub-slab depressurization is anticipated under the entire building with a fully operating system and modifications made to the system as proposed in the previously submitted Remedial Action Plan. Modifications may include increasing the capacity of the system blowers, as determined during the pilot test.

The building foundation is a standard thickness and does not have a dirt floor so even though there are high concentrations of vapors under the slab, the potential for diffusion is low. In addition, the SVE system is proposing to remove 4 pore volumes of air per day from the sub-slab with trenches directly penetrating the highest concentration areas of vapors. Floors will be sealed as part of construction to further prevent leakage. If indoor air testing finds that TCE is present in indoor air above Vapor Action an investigation of the source of the vapors will be instigated with further sealing. HVAC carbon filtration is an additional step that can be taken to eliminate accumulation of vapors in the building.

ii. Two individual drop points and fans are proposed to be placed near sub-slab sample locations SS-4 and SS-40. SS-4 and SS-40 could not be sampled during the December 2020 sub-slab vapor investigation due to the presence of a high-water table. Additionally, a pilot test could not be conducted near these sample locations at the vapor extraction point VE-1 due to the frozen ground and/or high-water table.
a. Discuss whether the VMS will properly function in this area of the site given the wet subsurface conditions. Moreover, discuss what modifications may be necessary to ensure that the VMS is properly functioning.
b. Discuss whether the VMS will be protective to the occupants in this area of the building.

SS-4 and SS-40 were attempted to be sampled during a period when the building's electricity was off, sumps were not functional, drains were not maintained, and the heat was off and the sub-slab soils were frozen in the outer portion of the building. The water observed under the slab was most likely the result of a leaking roof / leaking exterior walls. All of those conditions will not exist during development of the site for occupancy and are expected to be alleviated. No water has been observed in the trenches to date.

Historically, the nearest monitoring well measured groundwater elevations at 9 to 11 feet below existing grade. The top of the basement slab in the vicinity of SS-4 and SS-40 is located approximately 6.66 feet

below that same existing grade. Therefore, historically, groundwater has been established 2 to 4 feet below the bottom of the slab. Existing trenches have been established to 3.5 feet below the basement floor elevation without flowing water, so it is anticipated that perched water will not exist long term.

To guarantee that groundwater does not interfere with sub-slab depressurization, a 12-inch deep trench drain system will be installed along the perimeter of the area of the building where SS-4 is present to intercept surface water and groundwater. The location of the proposed trench drain is shown on Figure 1. Active sub-slab depressurization will be verified during the commissioning process in the vicinity of SS-4 and SS-40. Sub-slab depressurization will be maintained under these areas, as is the proposed remedial action plan.

Further, the SS-40 is located in single story electrical building that is not occupied or directly connected to occupied spaces. There is little likelihood of air in the vicinity of SS-4 and SS-40, which are not directly adjacent to residential spaces, being a pathway to exposure and installation of a sub-slab depressurization system will assure that vapor risks are managed.

iii. The VMS is proposed to operate at 44-inches of water to overcome the resistance created by the clay soils beneath the building, which is not a typical vacuum for a VMS. Considering this parameter combined with the clay soils and condition of building slab, discuss whether the system may pull air out of the building or create short circuiting via the newly created utility trenches, old utility trenches or through outer foundation walls, which may impact the system's radius of influence. Describe how this will be measured or otherwise evaluated during future pilot testing.

The VMS proposed vacuum of 44-inches of water is similar to the standard vacuum of a RadonAway HS5000 fan designed for use in clay environments. Pilot testing will involve measuring depressurization under the entire building slab utilizing existing sub-slab vapor sampling ports and newly drilled holes for measurement of vacuum. The trenches exiting the building will be sealed using concrete or bentonite to prevent utility trenches from pulling in outside air and short circuiting the system.

KSingh proposes a 72-hour pilot test for each of the two blower locations with a blower sized for at least 200 SCFM at 44-inches of water vacuum. Exhaust air samples will be collected from the blower system 1 hour after start, 1 day after start, and 2 days after start and tested for VOCs. Exhaust air samples will be collected utilizing Summa canisters.

Fifty-five (55) sub-slab vacuum measurement points will be established by drilling holes in the slab. The locations of the vacuum measurement points are shown on Figure 4. The points will be sealed in between measurements. After collection of the first air sample, a survey will be made of cracks and joints in the area of the building where the pilot test is being conducted and smoke testing will be performed to identify leaks and short circuiting. Vacuum measurements will then be taken and recorded. The recorded measurements will be analyzed for areas of low and no vacuum and further investigation will be conducted in that area to identify causes of vacuum loss. The process will be repeated on the second and third days. The findings of the pilot test will be reported to the WDNR in a pilot test report along with recommendations for system modifications.

KSingh will actively assess the vacuum readings and assess areas of low vacuum to determine if short circuiting is occurring during the pilot test utilizing smoke testing and other means to determine where system leakage is occurring. Where leaks are detected, the pathway will be patched. Walls of the building are cast-in-place concrete in the garage areas so we anticipate that makeup air will come from outside the building,

although leakage through outer walls is unlikely to negatively affect the system. If vacuum measurement points near a concrete block or brick wall show a loss of vacuum, measurement of air pressure in the interior of the wall utilizing a micromanometer will be performed and grout or other measures to seal the wall will be utilized to improve the functioning of the system to acceptable levels. The system is designed so that vacuum does not have to be maintained under interior dividing walls.

A pre-Pilot Scale test may be performed on a 10-foot long horizontal section as an initial test to determine zone of influence. A pre-Pilot Test will assist in more precisely determining the blower size to use for a full scale pilot test.

iv. Discuss whether dewatering will be necessary during remediation and redevelopment, specifically in the northern area of the site where the water appears to be immediately below the building slab. More specifically, discuss whether dewatering will be necessary for the VMS to properly function.

A trench drain system will be installed in the vicinity of SS-4 which is the only area of the building that has shown issues with water. Dewatering is not necessary under more than 90% of the facility and we expect that restoration of the building with functioning sumps will be adequate to dewater the subsurface of the rest of the facility to a condition where the VMS will function.

v. The Report did not address several design considerations presented in Table 8f, Parking Garage Ventilation – Mitigation Design Basics, of Appendix C in RR-800, as detailed below:
a. Discuss how the penetrations to the upper building floors are being sealed. Describe the condition of the ceiling above the parking garage and indicate whether any sealing of this ceiling will be necessary.
b. There are two elevator shafts and several stairwells adjacent to the parking garage, which can act as pathways for vapors to migrate to upper building floors. Describe how these are building features are being evaluated and considered in the VMS design.
c. Discuss the source of intake air into the parking garage. As presented in Table 8f, high ventilation can increase vapor intrusion if the ventilation causes high interior negative pressures in relation to the subsurface pressures.
d. What is the expected subsurface pressure in the parking garage relative to the sub-slab pressure, the overlying pressure, and the pressure in adjacent spaces?
e. Describe how the pressures described above will be monitored.

The garage ventilation system is not the primary control and is expected to offer additional protection, but not to be the primary source of protection. Garage ventilation is necessary for control of exhaust emissions which are immediately toxic. The garage ventilation system is designed to run for a minimum of five hours per day regardless of exhaust levels. The ceiling and outer walls of the garage area in buildings 2A and 2B are cast-in-place concrete and will not act as pathways for migration. Buildings 1B (NW) and 1B (NE) have wooden ceilings and will be sealed with drywall for noise reduction and vapor migration prevention. Pathways for utilities will be caulked and sealed as necessary to prevent migration of vapors.

The primary purpose of the garage ventilation system is ventilation and makeup air is provided in the design. The system draws fresh air from the east side of the garage. When the exhaust fans turn on a set of dampers in that wall by the unit heaters open, so the garage should never be at a negative pressure relative to the outside. The system was designed by a certified HVAC designer and complies with all applicable ventilation standards.

Additional commissioning vacuum readings will be taken after the garage ventilation system is active to determine that sub-slab depressurization is being maintained. Modifications to the ventilation system is one remedy that will be pursued if it is determined that the ventilation system is having a negative effect on indoor air.

vi. The pilot pressure testing completed for the VMS was not working against a negative operating indoor air pressure, which will be established during redevelopment and will ultimately be the condition present when building is occupied. Pilot pressure testing should be re-evaluated once the negative operating indoor air pressure is established in the building.

Vacuum measurements will be performed after the HVAC system is operating to verify that sub-slab depressurization is occurring utilizing both barometric pressure gauges and a micromanometer. Existing probes and new drill holes will be utilized for pressure differentiation measurements.

vii. Provide a contingency plan for if the VMS does not achieve an adequate pressure-field extension throughout the entire building, which will be required prior to case closure.

Contingency plans will depend on the identified cause of the pressure field extension issues during commissioning. Potential solutions include a) sealing cracks, b) increasing blower size, or c) some combination of identified alternatives. Valves will be installed at the end of piping runs to adjust vacuum to various parts of the building.

viii. A robust indoor air sampling program will be required following the installation of the VMS and after the interior construction is complete and the heating, ventilation and air conditioning (HVAC) systems are operational.
a. Given the scale of the building, number of rooms, and potential variability due to source and building factors, the DNR recommends using a real time portable gas chromatography-mass spectrometry (GC/MS) to initially assess the building. Additionally, cannisters and passive air sampling should be conducted in the elevator shafts.

K Singh will prepare an indoor sampling program by September 1, 2021 and submit it to WDNR for approval. Air sampling will occur after the HVAC systems become operational, which will be winter of 2021/2022.

2. Preferential routes for vapor migration must be assessed, as detailed below:
i. The DNR understands that there is a tunnel beneath the 32nd Street right-of-way that connects the east and west block of the Community Within the Corridor redevelopment and that the tunnel will be filled during redevelopment.
a. Describe whether the tunnel is actively used.
b. Provide the depth and the dimensions of the tunnel.
c. Describe what type of material the tunnel will be filled with.
d. Discuss whether the tunnel represents a potential source for vapor contamination.
e. Discuss whether the tunnel may have a negative impact on the effectiveness of the VMS.
f. Discuss whether there is an opportunity to collect vapor samples from within the tunnel before the tunnel is filled, and if so, provide a sampling plan.

The tunnel connects the East Block complex with the West Block complex. The tunnel is not actively used and is considered a confined space. The tunnel is approximately 4 to 5 feet wide and 6 to 8 feet tall at to

slightly below the basement level and is currently blocked off to prevent entry. The tunnel is proposed to be abandoned with flowable fill.

The West Block complex has had sub-slab vapor testing in March 2021 which has determined that there are no exceedance of VRSLs in the vicinity of the tunnel and that no vapor migration is occurring. Testing also indicates that the tunnel is not a source of vapor contamination. Results of the testing will be supplied with the next submittal for the West Block.

As there is no evidence that the tunnel is acting as a migration pathway or source of contamination and as an unsafe confined space that is proposed for abandonment, no entry is proposed for sub-slab vapor sampling. One sub-slab vapor sample will be collected at the east end of the tunnel to establish conditions at both ends.

ii. As indicated in RR-800, a tight foundation is an important element of a sub-slab depressurization system (i.e., VMS). The DNR understands that the building foundation is generally 4- to 5-inches thick throughout the building, with few areas being 8-inches thick.
a. Describe the condition of the slab throughout the building.
b. Describe how the foundation will be sealed, including floor cracks and perimeter cracks/joints and around any penetrations (i.e., columns).
c. The Report states that regular sealing of any cracks will allow the VMS to achieve the required zone of influence. Describe how this will be accomplished when the building floor is finished. Clarify whether this action will only be performed in the parking garage, or through the entire building.
d. Discuss whether the walls are poured solid concrete or consist of concrete blocks that are hollow.
e. Discuss whether the columns in the basement of the building are poured concrete or whether they are hollow.

The building foundation slab is at least 4-inches thick, and frequently thicker, up to 9-inches thick throughout the facility and in good condition. The foundation slab is robust and industrial operations have not negatively impacted the foundation slab. The most accurate measurement of slab thickness is based on PFE cores and are summarized below.

Sample Point	Slab Thickness (inches)	Sample Point	Slab Thickness (inches)	Sample Point	Slab Thickness (inches)
VE-1	9	VE-2	5	VE-3	5
VE-4	5	VE-5	8.5	VE-6	5.35
VE-7	4.5	VE-8	4	VE-9	5

The mean average of the slab thickness if 5.7 inches. The median average thickness is 5 inches.

Smoke testing is proposed to identify cracks that present a pathway for air intrusion. Cracks will be sealed with caulk or cement sealant before being polished and as identified in annual inspections.

As the building is over 100 years old, future settlement and cracks from commercial and residential use is anticipated to be minimal. The basement area will primarily consist of unfinished concrete in the garage areas, polished concrete in the residential / commercial areas, and a finished gym area. A plan of floor finishes is included in Attachment B. All floors will be underlain by a concrete slab no matter the floor finish. Much of the

floor covering will act as a crack sealant in its own right, in particular where mastics are used to assure adhesion. Inspection of the concrete floors of the garage which will have automobile traffic and be exposed to salt and chemicals is the primary inspection goal followed by areas where polished concrete will be present.

Columns in the basement consist of the following:

- Buildings 3A, 2A, and 2B – observed to be solid concrete
- Building 1C – Steel columns/beams
- Building 1B (all rooms) – wood columns/beams
- Building 1A – brick façade over unknown interior

Interior and Exterior walls in the basement are generally the following:

- Building 3A, 2A, 2B – Cast-in-place Concrete and/or plaster (plaster walls are non-bearing)
- Building 1B (all) – Brick for exterior, some plaster and brick walls in interior locations (plaster and brick generally non bearing)
- Building 1C – Exterior is brick, concrete block exists on portions of the east wall (interior)
- Building 1A – Exterior is brick, interior non bearing walls are mainly plaster/drywall

Foundation walls and column supports do not represent a preferential pathway.

iii. The DNR understands that there are three elevator shafts in the building and that passive air samples will be collected from each elevator shaft.
a. Describe if and/or how the pits will be sealed to prevent vapors from entering them.

There are currently four elevator shafts in the building, one of which will be abandoned. The three remaining shafts will be passively sampled in accordance with the previously proposed sampling plan once the building is sealed up and the HVAC system is installed, estimated for winter 2021/2022. If the elevator shafts are determined to be a source of vapors via passive air sampling, the elevator shafts will be sealed using a spray on sealant to the top of the foundation slab. KSingh utilized a Geo-Seal barrier installed by Contractors Waterproofing, Inc. of Cheney, Kansas for the sub-base of Seven04 Place in Milwaukee with success and will propose a substantially similar material if necessary for sealing the elevator shaft.

iv. The DNR has not received an assessment of utilities as a preferential pathway for migration of contamination.
a. Present the locations of any utility pipes, such as sewers or drains on a figure and indicate whether any existing utilities will be retained or abandoned.
b. Discuss whether there is a potential for vapor movement into the occupied spaces through any utility pipes, such as sewers or drains.
c. Indicate whether historic sewer pipes beneath the building have been abandoned. If not, discuss whether these pipes could be contaminated from historic solvent disposal and may be acting as a source of contamination.

A utilities pathway investigation will be conducted as part of the NR 716 Site Investigation. A Site Investigation Work Plan has been submitted for WDNR approval which includes the utilities investigation. Sewers and drains are designed to prevent sewer gases from entering occupied spaces through the use of elbows and traps and they will also prevent vapors from moving into occupied spaces.

KSingh will sample known utilities. Historic sewer pipes located beneath the building are expected to be

managed via the vapor mitigation / extraction system, but further investigations will be performed as construction progresses. The entirety of the existing utilities will be replaced and the remaining pipes will be grouted to the exterior of the building which will prevent them from being a long term source.

In summary we have included the following changes in the plan for Vapor Extraction / Mitigation in response to the WDNR's comments.

1. The proposed system has been modified to maintain negative pressure under the entire building with the addition of several legs.
2. Hot spot removal to reduce the mass of TCE by 10% or more and to increase vapor recovery of the greatest concentration of TCE contamination has been proposed.
3. Sealing of concrete surfaces is proposed.
4. A trench drain system is proposed to address water issues near SS-4 and SS-40.
5. Additional details for the Pilot Scale testing and Commissioning is proposed to document function of the system and to diagnose and correct issues. A pre-Pilot Scale test may be performed to estimate emissions.
6. Additional details of the garage ventilation system have been provided.
7. One additional sub-slab vapor sample is proposed to be collected at the east end of the connecting tunnel is proposed.
8. Existing utilities which will no longer be used will be abandoned with flowable fill.
9. Additional air sampling of utilities is proposed.

Further, the Vapor Extraction / Mitigation system is designed to maintain negative pressure which will also reduce the source. However, due to the nature of the subsurface and the location of the contamination beneath the building, it may be difficult to remove all of the TCE contamination in an accelerated timeframe of less than 4 years. However, negative pressure will be maintained in all configurations of the system to ensure that soil vapors do not represent an environment risk to residents.

We request WDNR's approval of plan for Vapor Extraction / Mitigation. Please contact us, if you have any questions or seek clarification regarding this submittal.

Sincerely,
K. SINGH & ASSOCIATES, INC.

Aileen M. Zebrowski, E.I.T.
Staff Engineer

Robert T. Reineke, P.E.
Project Manager

Pratap N. Singh, Ph.D., P.E.
Principal Engineer

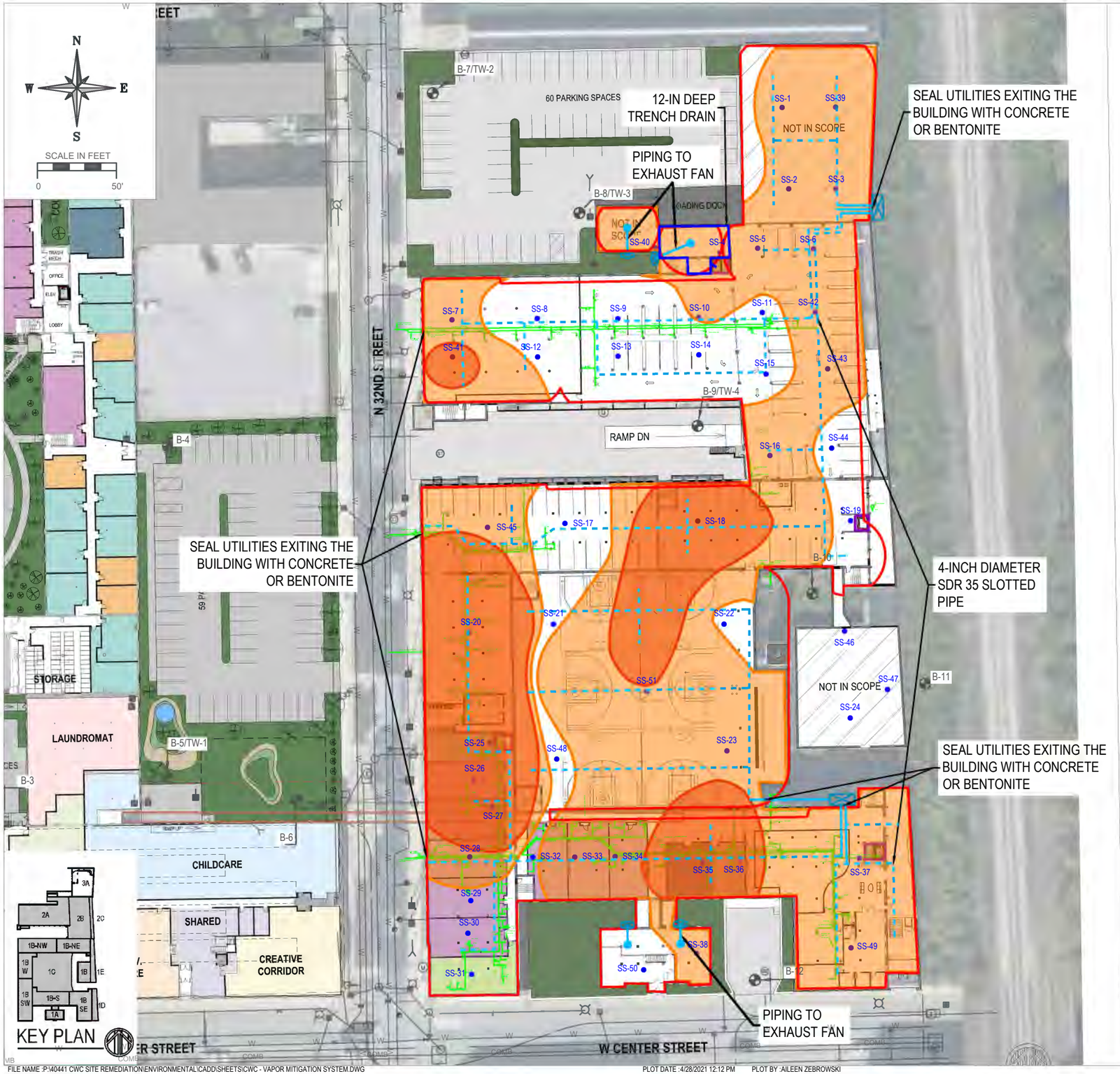
cc: Que El-Amin / Scott Crawford, Inc.
Shane LaFave / Roers Companies

KSingh | Engineers Scientists Consultants

Attachments:

Figure 1	Vapor Intrusion Mitigation Plan
Figure 2	Soil Analytical Results for VOCs
Figure 3	Proposed Area of Contaminated Soil Removal
Figure 4	Pilot Test Plan
Table 1	Estimate of Mass of TCE in Soil
Attachment A	WDNR Review Letter
Attachment B	Floor Finish Plan

FIGURES



LEGEND

- Sub-Slab Sampling Locations (51)
- Previous Boring and Temporary Well Locations
- Known Elevator Shaft
- 1 - Bedroom Apartment
- 2 - Bedroom Apartment
- 3 - Bedroom Apartment
- 4 - Bedroom Apartment
- Studio Apartment
- WI Residential VRSL Exceedance Extents
- WI Large Commercial / Industrial VRSL Exceedance Extents
- Slotted Horizontal Extraction Piping
- Solid Horizontal Extraction Piping
- Extraction Points
- Potential Blower Locations
- Vapor Mitigation Fan (RadonAway HS5000 or Equivalent)
- Underground Plumbing
- Zone of Influence
- Vacuum Measurement Point (55)
- 12-Inch Trench Drain

NOTES:
1. SAMPLING LOCATIONS AND VAPOR EXTRACTION POINTS ARE APPROXIMATE

KSingh Engineers Scientists Consultants
3636 North 124th Street
Wauwatosa, WI 53222
262-821-1171

CONSULTANT

CONSULTANT

CONSULTANT

PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR
2748 N 32ND STREET
MILWAUKEE, WI 53210
PROJECT NUMBER: 40441

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

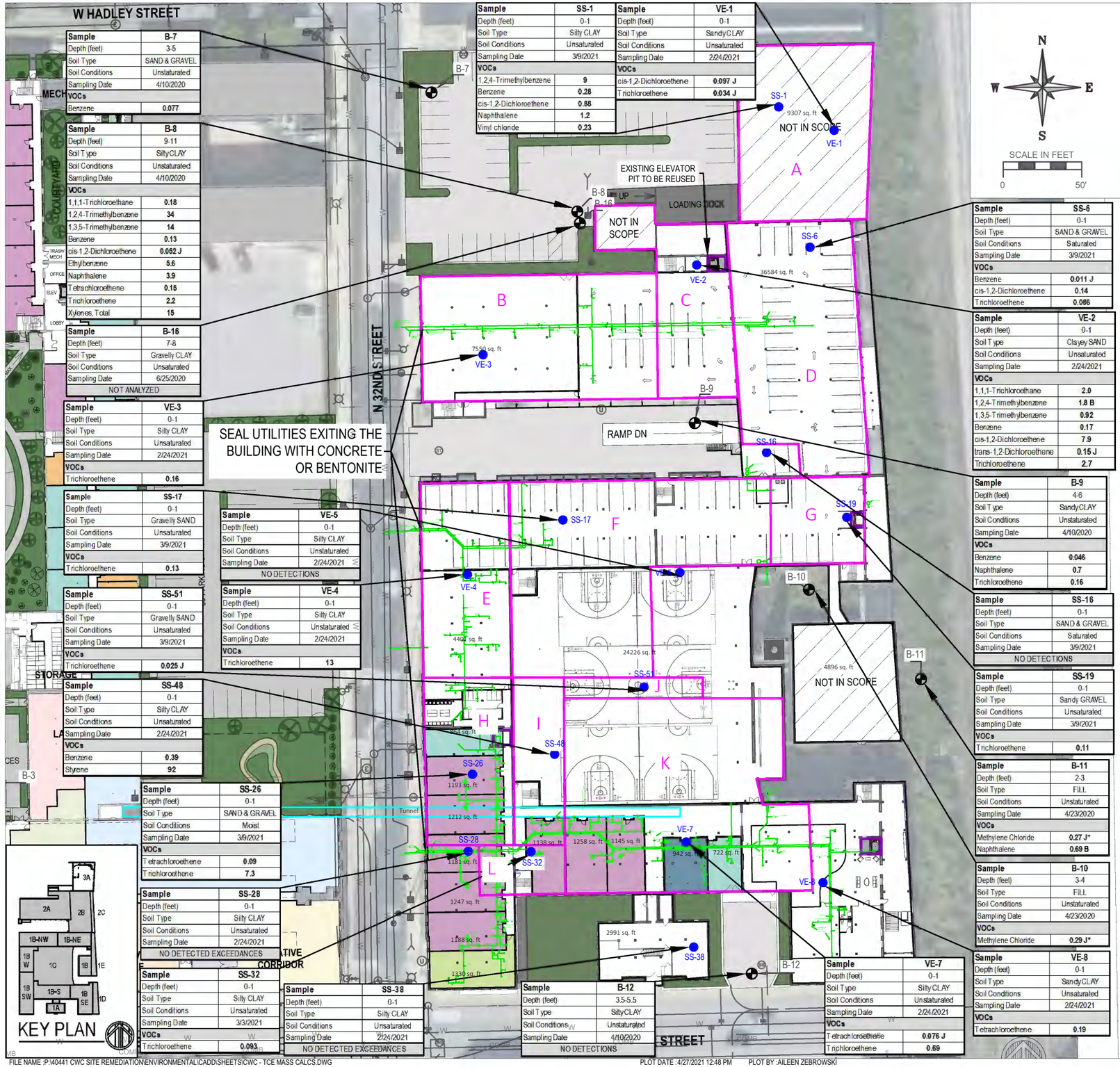
DRAWN BY	DATE
AMZ	04/27/2021
CHECKED BY	DATE
RTR	04/27/2021

SHEET TITLE

VAPOR INTRUSION MITIGATION PLAN

FIGURE 1

SHEET 1 of SHEET 4



Sample	SS-1
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
1,2,4-Trimethylbenzene	9
Benzene	0.28
cis-1,2-Dichloroethene	0.88
Naphthalene	1.2
Vinyl chloride	0.23

Sample	VE-1
Depth (feet)	0-1
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
cis-1,2-Dichloroethene	0.097 J
Trichloroethene	0.034 J

Sample	B-7
Depth (feet)	3-5
Soil Type	SAND & GRAVEL
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
Benzene	0.077

Sample	B-8
Depth (feet)	9-11
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
1,1,1-Trichloroethane	0.18
1,2,4-Trimethylbenzene	34
1,3,5-Trimethylbenzene	14
Benzene	0.13
cis-1,2-Dichloroethene	0.052 J
Ethylbenzene	5.6
Naphthalene	3.9
Tetrachloroethene	0.15
Trichloroethene	2.2
Xylenes, Total	15

Sample	B-16
Depth (feet)	7-8
Soil Type	Gravelly CLAY
Soil Conditions	Unsaturated
Sampling Date	6/25/2020
NOT ANALYZED	

Sample	SS-6
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Saturated
Sampling Date	3/9/2021
VOCs	
Benzene	0.011 J
cis-1,2-Dichloroethene	0.14
Trichloroethene	0.086

Sample	VE-2
Depth (feet)	0-1
Soil Type	Clayey SAND
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
1,1,1-Trichloroethane	2.0
1,2,4-Trimethylbenzene	1.8 B
1,3,5-Trimethylbenzene	0.92
Benzene	0.17
cis-1,2-Dichloroethene	7.9
trans-1,2-Dichloroethene	0.15 J
Trichloroethene	2.7

Sample	VE-3
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Trichloroethene	0.16

Sample	B-9
Depth (feet)	4-6
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
Benzene	0.046
Naphthalene	0.7
Trichloroethene	0.16

Sample	SS-17
Depth (feet)	0-1
Soil Type	Gravelly SAND
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	0.13

Sample	VE-5
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTIONS	

Sample	SS-16
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Saturated
Sampling Date	3/9/2021
NO DETECTIONS	

Sample	SS-51
Depth (feet)	0-1
Soil Type	Gravelly SAND
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	0.025 J

Sample	VE-4
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Trichloroethene	13

Sample	SS-19
Depth (feet)	0-1
Soil Type	Sandy GRAVEL
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	0.11

Sample	SS-48
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Benzene	0.39
Styrene	92

Sample	B-11
Depth (feet)	2-3
Soil Type	FILL
Soil Conditions	Unsaturated
Sampling Date	4/23/2020
VOCs	
Methylene Chloride	0.27 J*
Naphthalene	0.69 B

Sample	SS-26
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Moist
Sampling Date	3/9/2021
VOCs	
Tetrachloroethene	0.09
Trichloroethene	7.3

Sample	B-10
Depth (feet)	3-4
Soil Type	FILL
Soil Conditions	Unsaturated
Sampling Date	4/23/2020
VOCs	
Methylene Chloride	0.29 J*

Sample	SS-28
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTED EXCEEDANCES	

Sample	VE-8
Depth (feet)	0-1
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Tetrachloroethene	0.19

Sample	SS-32
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	3/3/2021
VOCs	
Trichloroethene	0.093

Sample	SS-38
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTED EXCEEDANCES	

Sample	B-12
Depth (feet)	3.5-5.5
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
NO DETECTIONS	

Sample	VE-7
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Tetrachloroethene	0.076 J
Trichloroethene	0.69

LEGEND

- SS and VE Soil Sampling Locations
- Previous Soil Boring Locations
- Known Elevator Shaft
- 1 - Bedroom Apartment
- 2 - Bedroom Apartment
- 3 - Bedroom Apartment
- 4 - Bedroom Apartment
- Studio Apartment
- Underground Plumbing
- Underground Tunnel
- TCE Zones for Mass Calculations
- TCE Hot Spot Removal Area

NOTE:

- COMBINATION OF EXISTING AND PROPOSED PLUMBING

Analyte	NR 720 RCLs for GW Protection (1)	NR 720 RCLs - Non-Industrial Use for Direct Contact Protection (1)	NR 720 RCLs - Industrial Use for Direct Contact Protection (1)
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	0.1402	640	640
1,2,4-Trimethylbenzene	1.3787**	219	219
1,3,5-Trimethylbenzene	1.3787**	182	182
Benzene	0.0051	1.6	7.07
cis-1,2-Dichloroethene	0.0412	156	2,340
Ethylbenzene	1.57	8.02	35.4
Methylene Chloride	0.0026	61.8	1,150
Naphthalene	0.658182	5.52	24.10
Styrene	0.22	867	867
Tetrachloroethene	0.0045	33	145
trans-1,2-Dichloroethene	0.0626	1560	1850
Trichloroethene	0.0036	1.3	8.41
Vinyl chloride	0.0001	0.067	2.08
Xylenes, Total	3.96	1,212	1212

NOTES:

1. (1) FROM WDNR RCLS WORKSHEET DATED DECEMBER 2018
2. REPORTED UNITS IN MG/KG
3. ONLY EXCEEDANCES SHOWN
4. **BOLD** = VALUE EXCEEDS GROUNDWATER PROTECTION OR DIRECT CONTACT RCLS
5. ** = COMBINED ESTABLISHED STANDARD OF 1,2,4- & 1,3,5- TRIMETHYLBENZENE
6. * = LABORATORY CONTROL SAMPLE OR ITS DUPLICATE IS OUTSIDE ACCEPTANCE LIMITS
7. "J" = ANALYTE DETECTED BETWEEN 'LIMIT OF DETECTION' AND 'LIMIT OF QUANTITATION'
8. SAMPLING LOCATIONS ARE APPROXIMATE

KSingh Engineers Scientists Consultants
3636 North 124th Street
Wauwatosa, WI 53222
262-821-1171

CONSULTANT

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PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR
2748 N 32ND STREET
MILWAUKEE, WI 53210
PROJECT NUMBER: 40441

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

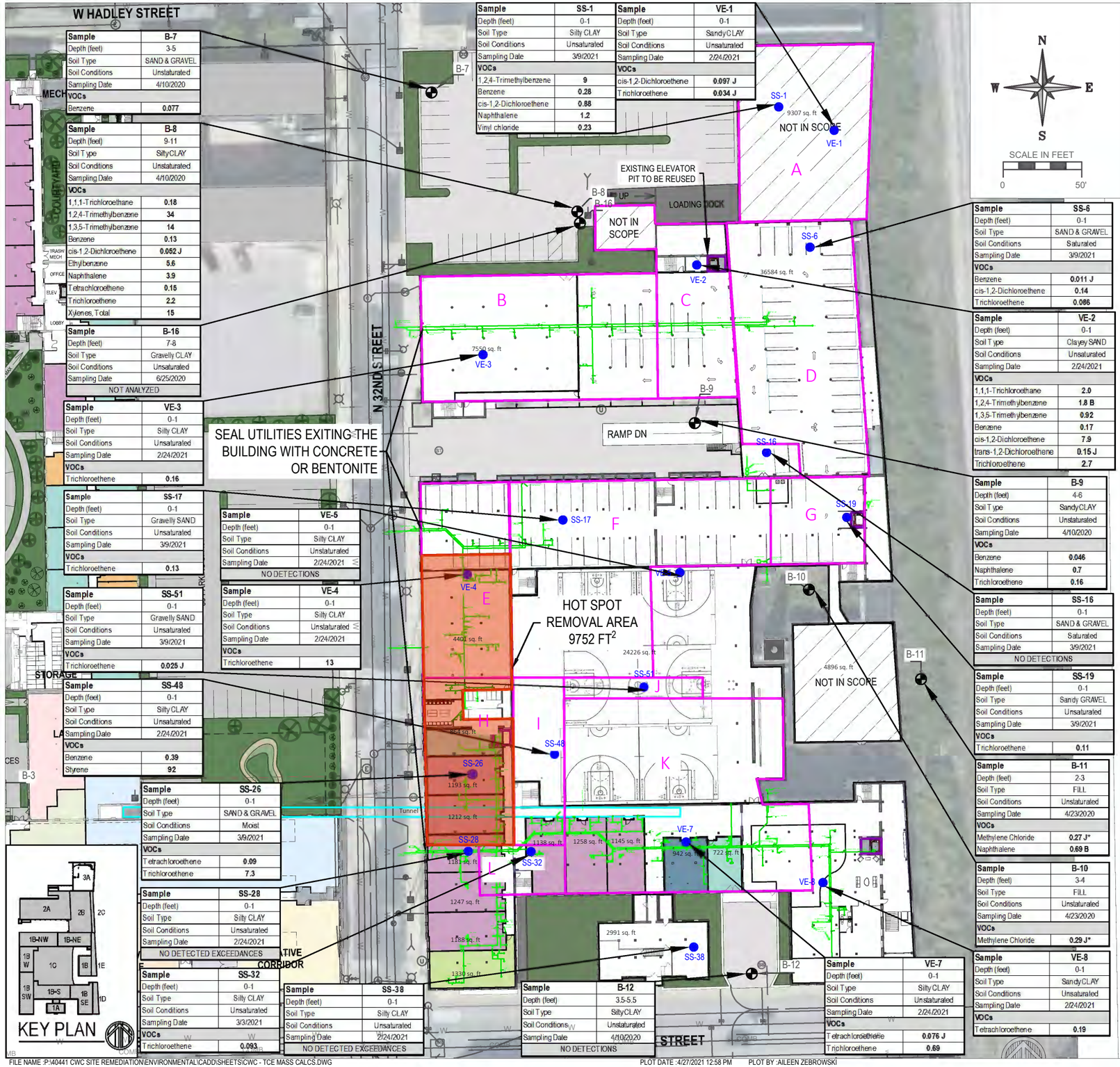
DRAWN BY	DATE
AMZ	04/27/2021
CHECKED BY	DATE
RTR	04/27/2021

SHEET TITLE

SOIL ANALYTICAL RESULTS FOR VOCS

FIGURE 2

SHEET 2 of SHEET 4



Sample	B-7
Depth (feet)	3-5
Soil Type	SAND & GRAVEL
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
Benzene	**0.077**

Sample	B-8
Depth (feet)	9-11
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
1,1,1-Trichloroethane	**0.18**
1,2,4-Trimethylbenzene	**34**
1,3,5-Trimethylbenzene	**14**
Benzene	**0.13**
cis-1,2-Dichloroethene	**0.052 J**
Ethylbenzene	**5.6**
Naphthalene	**3.9**
Tetrachloroethene	**0.15**
Trichloroethene	**2.2**
Xylenes, Total	**15**

Sample	B-16
Depth (feet)	7-8
Soil Type	Gravelly CLAY
Soil Conditions	Unsaturated
Sampling Date	6/25/2020
NOT ANALYZED	

Sample	VE-3
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Trichloroethene	**0.16**

Sample	SS-17
Depth (feet)	0-1
Soil Type	Gravelly SAND
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	**0.13**

Sample	SS-51
Depth (feet)	0-1
Soil Type	Gravelly SAND
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	**0.025 J**

Sample	SS-48
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Benzene	**0.39**
Styrene	**92**

Sample	SS-26
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Moist
Sampling Date	3/9/2021
VOCs	
Tetrachloroethene	**0.09**
Trichloroethene	**7.3**

Sample	SS-28
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTED EXCEEDANCES	

Sample	SS-32
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	3/3/2021
VOCs	
Trichloroethene	**0.093**

Sample	VE-5
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTIONS	

Sample	VE-4
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Trichloroethene	**13**

Sample	SS-38
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
NO DETECTED EXCEEDANCES	

Sample	B-12
Depth (feet)	3.5-5.5
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
NO DETECTIONS	

Sample	SS-1
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
1,2,4-Trimethylbenzene	**9**
Benzene	**0.28**
cis-1,2-Dichloroethene	**0.88**
Naphthalene	**1.2**
Vinyl chloride	**0.23**

Sample	VE-1
Depth (feet)	0-1
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
cis-1,2-Dichloroethene	**0.097 J**
Trichloroethene	**0.034 J**

Sample	SS-6
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Saturated
Sampling Date	3/9/2021
VOCs	
Benzene	**0.011 J**
cis-1,2-Dichloroethene	**0.14**
Trichloroethene	**0.086**

Sample	VE-2
Depth (feet)	0-1
Soil Type	Clayey SAND
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
1,1,1-Trichloroethane	**2.0**
1,2,4-Trimethylbenzene	**1.8 B**
1,3,5-Trimethylbenzene	**0.92**
Benzene	**0.17**
cis-1,2-Dichloroethene	**7.9**
trans-1,2-Dichloroethene	**0.15 J**
Trichloroethene	**2.7**

Sample	B-9
Depth (feet)	4-6
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	4/10/2020
VOCs	
Benzene	**0.046**
Naphthalene	**0.7**
Trichloroethene	**0.16**

Sample	SS-16
Depth (feet)	0-1
Soil Type	SAND & GRAVEL
Soil Conditions	Saturated
Sampling Date	3/9/2021
NO DETECTIONS	

Sample	SS-19
Depth (feet)	0-1
Soil Type	Sandy GRAVEL
Soil Conditions	Unsaturated
Sampling Date	3/9/2021
VOCs	
Trichloroethene	**0.11**

Sample	B-11
Depth (feet)	2-3
Soil Type	FILL
Soil Conditions	Unsaturated
Sampling Date	4/23/2020
VOCs	
Methylene Chloride	**0.27 J***
Naphthalene	**0.69 B**

Sample	B-10
Depth (feet)	3-4
Soil Type	FILL
Soil Conditions	Unsaturated
Sampling Date	4/23/2020
VOCs	
Methylene Chloride	**0.29 J***

Sample	VE-7
Depth (feet)	0-1
Soil Type	Silty CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Tetrachloroethene	**0.076 J**
Trichloroethene	**0.69**

Sample	VE-8
Depth (feet)	0-1
Soil Type	Sandy CLAY
Soil Conditions	Unsaturated
Sampling Date	2/24/2021
VOCs	
Tetrachloroethene	**0.19**

N

W E

S

SCALE IN FEET

0 50'

LEGEND

- SS and VE Soil Sampling Locations
- Previous Soil Boring Locations
- Known Elevator Shaft
- 1 - Bedroom Apartment
- 2 - Bedroom Apartment
- 3 - Bedroom Apartment
- 4 - Bedroom Apartment
- Studio Apartment
- Underground Plumbing
- Underground Tunnel
- TCE Zones for Mass Calculations
- TCE Hot Spot Removal Area

NOTE:

- COMBINATION OF EXISTING AND PROPOSED PLUMBING

Analyte	NR 720 RCLs for GW Protection (1)	NR 720 RCLs - Non-Industrial Use for Direct Contact Protection (1)	NR 720 RCLs - Industrial Use for Direct Contact Protection (1)
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	0.1402	640	640
1,2,4-Trimethylbenzene	1.3787**	219	219
1,3,5-Trimethylbenzene	1.3787**	182	182
Benzene	0.0051	1.6	7.07
cis-1,2-Dichloroethene	0.0412	156	2,340
Ethylbenzene	1.57	8.02	35.4
Methylene Chloride	0.0026	61.8	1,150
Naphthalene	0.658182	5.52	24.10
Styrene	0.22	867	867
Tetrachloroethene	0.0045	33	145
trans-1,2-Dichloroethene	0.0626	1560	1850
Trichloroethene	0.0036	1.3	8.41
Vinyl chloride	0.0001	0.067	2.08
Xylenes, Total	3.96	1,212	1212

NOTES:

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2. REPORTED UNITS IN MG/KG
3. ONLY EXCEEDANCES SHOWN
4. **BOLD** = VALUE EXCEEDS GROUNDWATER PROTECTION OR DIRECT CONTACT RCLS
5. ** = COMBINED ESTABLISHED STANDARD OF 1,2,4- & 1,3,5- TRIMETHYLBENZENE
6. * = LABORATORY CONTROL SAMPLE OR ITS DUPLICATE IS OUTSIDE ACCEPTANCE LIMITS
7. "J" = ANALYTE DETECTED BETWEEN 'LIMIT OF DETECTION' AND 'LIMIT OF QUANTITATION'
8. SAMPLING LOCATIONS ARE APPROXIMATE

KSingh Engineers Scientists Consultants
3636 North 124th Street
Wauwatosa, WI 53222
262-821-1171

CONSULTANT

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PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR
2748 N 32ND STREET
MILWAUKEE, WI 53210
PROJECT NUMBER: 40441

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

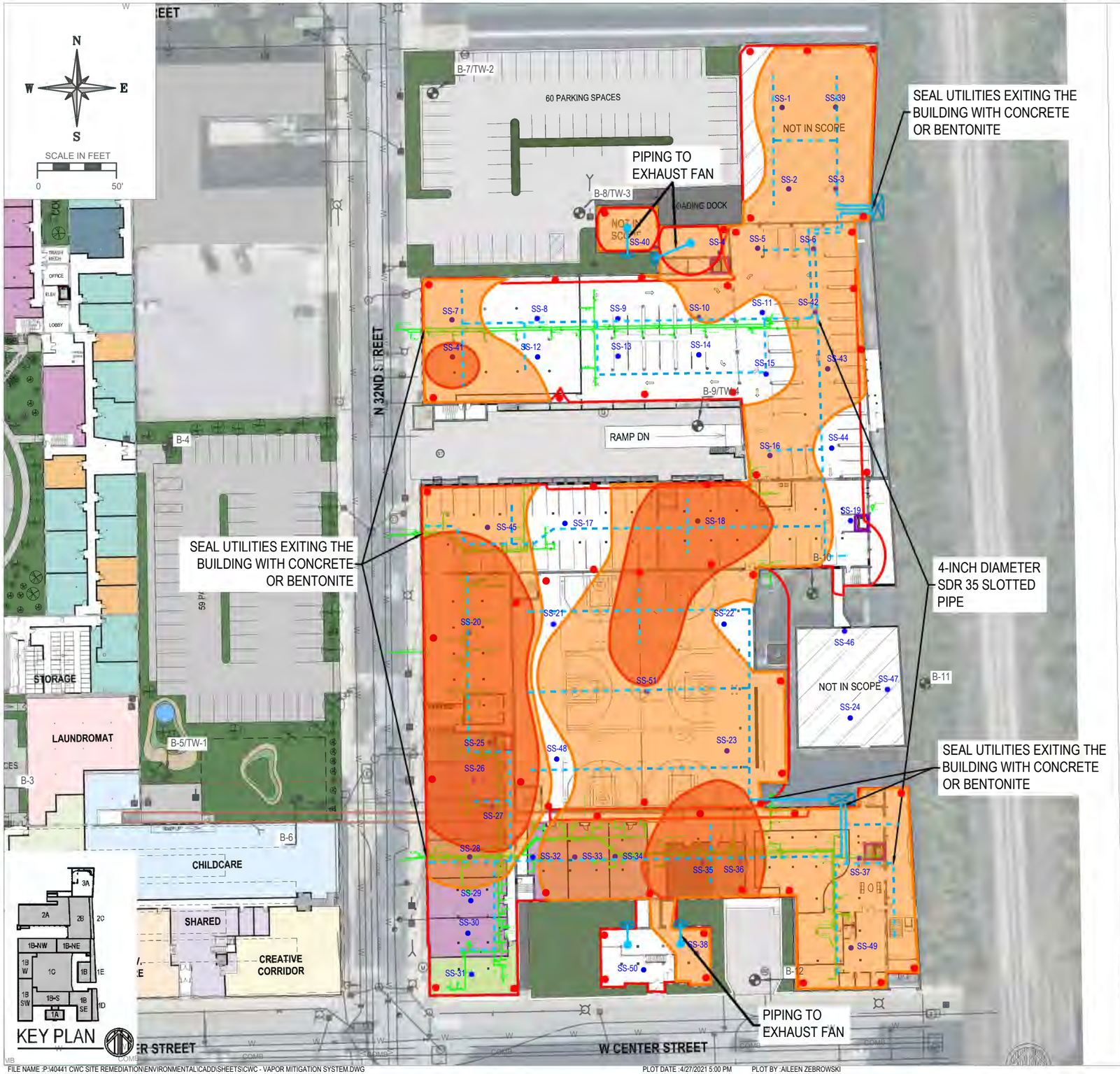
DRAWN BY	DATE
AMZ	04/27/2021
CHECKED BY	DATE
RTR	04/27/2021

SHEET TITLE

PROPOSED AREA OF CONTAMINATED SOIL REMOVAL

FIGURE 3

FILE NAME :P:\40441 CWC SITE REMEDIATION\ENVIRONMENTAL\CADD\SHEETS\CWC - TCE MASS CALCS.DWG PLOT DATE :4/27/2021 12:58 PM PLOT BY :AILEEN ZEBROWSKI



LEGEND

- Sub-Slab Sampling Locations (51)
- Previous Boring and Temporary Well Locations
- Known Elevator Shaft
- 1 - Bedroom Apartment
- 2 - Bedroom Apartment
- 3 - Bedroom Apartment
- 4 - Bedroom Apartment
- Studio Apartment
- WI Residential VRSL Exceedance Extents
- WI Large Commercial / Industrial VRSL Exceedance Extents
- Slotted Horizontal Extraction Piping
- Solid Horizontal Extraction Piping
- Extraction Points
- Potential Blower Locations
- Vapor Mitigation Fan (RadonAway HS5000 or Equivalent)
- Underground Plumbing
- Zone of Influence
- Vacuum Measurement Point (55)

NOTES:
1. SAMPLING LOCATIONS AND VAPOR EXTRACTION POINTS ARE APPROXIMATE

KSingh Engineers Scientists Consultants
3636 North 124th Street
Wauwatosa, WI 53222
262-821-1171

CONSULTANT

CONSULTANT

CONSULTANT

PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP
2748 N 32ND STREET
MILWAUKEE, WI 53210
PROJECT NUMBER: 40441

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

DRAWN BY	DATE
AMZ	04/27/2021
CHECKED BY	DATE
RTR	04/27/2021

SHEET TITLE

PILOT TEST PLAN

FIGURE 4

SHEET 4 of SHEET 4

FILE NAME :P:\40441 CWC SITE REMEDIATION\ENVIRONMENTAL\CADD\SHEETS\CWC - VAPOR MITIGATION SYSTEM.DWG
PLOT DATE :4/27/2021 5:00 PM PLOT BY :AILEEN ZEBROWSKI

TABLE

Table 1

Estimate of Mass of TCE in Soil

Community Within the Corridor - East Block

Area ID	Sample Point	Area (square feet)	Depth of Vadose Zone (feet)	Soil Density (pcf)	TCE Concentration (mg/kg, ppm)	TCE Mass* (pounds)
A	VE-1	9312.3	4	130	0.034	0.16464146
B	VE-3	11963.1	4	130	0.16	0.99532992
C	VE-2	6378.7	4	130	2.7	8.95569480
D	SS-6	12181.6	4	130	0.086	0.54476115
E	VE-4	6996.3	4	130	13	47.29498800
F	SS-17	15377.6	4	130	0.13	1.03952576
G	SS-19	3297.6	4	130	0.11	0.18862272
H	SS-26	6000.7	4	130	7.3	22.77865720
I	SS-48	3433.1	4	130	0.066	0.11782399
J	SS-51	1164.4	4	130	0.025	0.01513720
K	VE-7	17886.7	4	130	0.69	6.41774796
L	SS-32	1711.5	4	130	0.093	0.08276814
Grand Total		95703.6				**88.59569831**

Proposed Hotspot Removal	VE-4 and SS-19	9752	0.5	130	10.15	6.434
Trenching	A to L	6000	1.5	130	2.03	2.378
Grand Total						**8.8**

Mass = Area * Depth * Density * TCE Concentration / 1,000,000

ATTACHMENTS

ATTACHMENT A

WDNR Review Letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, WI 53212-3128

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

April 9, 2021

Roers Companies
c/o: Mr. Shane LaFave
110 Cheshire Lane
Suite 120
Minnetonka, MN 55305

Subject: Review of Remedial Action Design Report
Community Within the Corridor – East Block
2748 N 32nd Street, Milwaukee, WI 53208
BRRTS #: 02-41-263675, FID #: 241025400

Dear Mr. LaFave:

On March 23, 2021, the Wisconsin Department of Natural Resources (DNR) received *Update to Post Closure Modification Request/Remedial Action Plan*, dated March 19, 2021, prepared by K. Singh & Associates, Inc. (K. Singh) for the above-referenced site. This submittal was presented with a Technical Assistance fee for DNR review and response. The following supplemental documents were submitted along with the above-identified document:

- *Feasibility Study and Design – Vapor Mitigation System*, dated March 10, 2021
- *Additional Soils Investigation*, dated March 24, 2021

The above-referenced documents will be collectively referred to as "the Report" for the remainder of this letter. In the Report, K. Singh presents recently collected data pertaining to the site investigation and proposes a remedial action plan/design report (RAP) to address the contamination identified thus far. The DNR reviewed the site investigation portion of the Report for regulatory compliance with Wis. Admin Code ch. NR 716 and the remedial action portion of the Report for regulatory compliance with Wis. Admin. Code chs. NR 722 and NR 724.

The DNR's comments, as presented below, provide you with recommendations for additional site investigation to complete the delineation of the extent and degree of contamination at this site, which must be completed prior to case closure, per Wis. Admin. Code ch, NR 716. Furthermore, the results of a complete site investigation must be applied when evaluating remedial action options, which are required to prevent any threat to public health, safety, welfare and the environment. Accordingly, at the present time, the DNR is unable to approve the remedial action plan presented in the Report as there are many variables that are still unknown at this site, as outlined below.

Background

The site is 4.16 acres in size and is covered by paved parking lots and driveways (courtyards) and multi-building facility (collectively referred to as "the building") that were constructed in the early 1900s. The property was originally used by Romadka Brothers Co. to manufacture trunks suitcases and travel bags. By 1951, the property

was occupied by a Briggs & Stratton factory, which operated as a part of the gas and engine division of the company. The site turned over ownership to WI Industries Pension Plan & Trust in 1987.

A *Notification of Hazardous Substance Discharge* was received by the DNR on January 11, 2001, for soil and groundwater contaminated with petroleum volatile organic compounds (VOCs), chlorinated VOCs and polycyclic aromatic hydrocarbons (PAHs). The sources of this contamination were identified as the historic underground storage tanks (USTs) located in the northern courtyard at the site. On August 26, 2008, the DNR issued a *Final Case Closure with Land Use Limitations or Conditions* letter for this site, formerly identified as the WI Industries Pension Plan & Trust. The land use limitations (i.e., continuing obligations) required for case closure included structural impediments, engineered caps and a sub-slab depressurization system.

On August 3, 2020, the DNR received a *Request for Post Closure Modification* (PCM Request), dated July 8, 2020, prepared by K. Singh. The PCM Request indicated that the Community Within the Corridor Limited Partnership purchased the site and planned to redevelop the site into a mixed residential, retail and commercial facility. Following the submittal of the PCM Request, K. Singh presented additional data to the DNR that identified sub-slab vapor and soil contamination above their respective vapor risk screening levels (VRSLs) and Wis. Admin. Code ch. NR 720 soil residual contaminant levels (RCLs), which indicate there are likely additional source areas present on the site that were not previously investigated. Subsequently, on April 6, 2021, the DNR re-opened the environmental contamination case under a new site name, Community Within the Corridor – East Block.

Site Investigation Summary

In preparation for site redevelopment, K. Singh performed a Phase I Environmental Site Assessment (ESA), and subsequently performed a Phase II ESA. The Phase II ESA identified PVOCs, CVOCs, PAHs and RCRA metals in the soil and/or groundwater greater than their respective soil RCLs and Wis. Admin. Code ch. NR 140 preventive action limits (PALs) and/or enforcement standards (ESs). Following the Phase II ESA, K. Singh conducted sub-slab vapor sampling as well as soil sampling throughout the site building, which identified soil RCL exceedances in addition to residential, commercial and industrial VRSL exceedances of PVOCs, CVOCs, PAHs and/or metals.

Site Investigation Review

Wis. Admin. Code ch. NR 716 provides the requirements for conducting a site investigation. In summary, the required steps to follow include 1) collecting and evaluating information to scope the investigation, 2) preparing a site investigation work plan, 3) conducting the field investigation, and 4) preparing a site investigation report. Investigative activities have occurred at this site, but additional site investigation, per Wis. Admin. Code ch. NR 716, which is based on and supports a conceptual site model, is required, as outlined below:

I. Source identification (scoping the investigation)

Wis. Admin. Code § NR 716.01 states that the site investigation must define the extent and degree of contamination and identify the source(s) of contamination. Furthermore, Wis. Admin. Code § NR 716.07(1) requires that the history of the site or facility, including industrial land uses that may have been associated with one or more hazardous substance discharges, be evaluated.

A. Discuss the widespread distribution of trichloroethylene (TCE) related to a conceptual site model. Discuss potential sources and source areas of TCE at this site. Given the presence of high

moisture content clay soils beneath the building, it appears unlikely that there was widespread migration through vapor and/or groundwater from a single release/source area.

B. Considering the historical use of the site, discuss whether there were degreasing stations throughout the building, and if possible, discuss the specific locations of these stations. Incorporate interviews from the Phase I ESA in your discussion, as applicable.

II. Addressing previous investigations during future site investigation activities (scoping the investigation and work plan development)

Wis. Admin Code § NR 716.09(2)(f)(8) requires a discussion of how sampling results will relate to results of any previous investigations.

A. Provide historic site figures showing the location of contamination associated with the historic site investigation conducted prior to the 2008 case closure. Discuss the potential new sources of contamination as they may relate to previous investigations.

B. Evaluation of emerging contaminants

On August 24, 2020, the DNR received *Environmental Investigation Memorandum for Community Within the Corridor* (PFAS Report), dated August 24, 2020, prepared by K. Singh, which presents PFAS soil analytical results. However, an evaluation, as described below, was not provided.

Wis. Admin. Code §§ NR 716.07, NR 716.09 requires that site investigation scoping and work plans include an evaluation of potential perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other applicable emerging contaminants that were historically or are presently produced, used, handled, or stored at the site.

1. Provide an evaluation of emerging contaminants, and include any available information on whether any products containing PFAS were used in any process services, the duration of PFAS containing product use, the type of PFAS contained in the product, and any areas of the site where PFAS- containing products may have been used, stored, managed, or discarded. You may reference *Reminder to Include Evaluation of Emerging Contaminants in Site Investigation* DNR letter, dated August 17, 2020, for additional details on this requirement.

2. Discuss how this emerging contaminant evaluation relates to the results presented in both the PFAS Report and the Report. Discuss whether additional PFAS or other emerging contaminant investigation is required given the data presented in the Report. Provide a work plan as needed.

III. Degree and extent of contamination in all affected media (field investigation)

Wis. Admin. Code § NR 716.11 (3) (a) requires the field investigation to determine the nature, degree and extent, both areal and vertical, of the hazardous substances or environmental pollution in all affected media.

A. Soil

1. The DNR concurs that additional soil investigation is needed to define the extent and degree of soil contamination at the site, as proposed in the Report. This investigation should consider potential source areas and areas where the concentration of contamination appears to be highest.

B. Groundwater

1. The DNR concurs that additional groundwater investigation is needed to define the extent and degree of groundwater contamination at the site, as proposed in the Report. Additionally, the groundwater investigation must assess depth to groundwater and groundwater flow direction.

C. Vapor

Additional discussion regarding the DNR's review of the vapor investigation as it pertains to the vapor mitigation system (VMS) design and feasibility is presented in the Remedial Action section below.

1. Collect vapor samples from the sewer connections to the building to assess the potential impact to indoor air in the building.

2. Revise VRSL exceedance lines on all applicable figures to include all sample locations with exceedances. For example, VRSL exceedances were identified at sample locations SS-1 and SS-2, but these locations were not included within the VRSL exceedance lines shown on several figures within the Report.

IV. Off-site affected properties (work plan development and field investigation)

Wis. Admin. Code § NR 716.11(4) requires the field investigation to extend beyond the property boundaries of the source area as necessary to full define the extent of contamination.

A. Any additional soil, groundwater and vapor investigation at this site must be evaluated to determine whether contamination is extending off-site. Off-site contamination must be defined, as necessary.

B. Collect vapor samples from the sewer connection points to the building to assess whether the sewer is acting as a preferential migration pathway for contamination off-site. Typically, this will include collection of vapor samples from cleanouts or other locations within the building's plumbing system and the sewer main manholes closest to the point where the sewer laterals from the building connect with the sewer main.

V. Submitting site investigation information (site investigation report)

Wis. Admin. Code § NR 716.15 requires that a site investigation report be submitted to the DNR within 60-days after completion of the field investigation and receipt of laboratory data. As you are aware based on the work conducted at this site thus far, the site investigation can be an iterative process and data results may indicate further assessment is needed to define the degree and extent of contamination. Although work status update information and field data notifications may be submitted to the DNR throughout the field investigation phase, it is expected that each submittal evaluating results and recommending additional work build on previous site information, therefore developing and maintaining

the comprehensive site investigation reporting up to submittal of the final comprehensive site investigation report.

Remedial Action Summary

The Report includes a design and feasibility study that was conducted for the installation of a VMS. The VMS is proposed to mitigate the vapor contamination beneath the building slab as well as remediate the vapors in the building through soil vapor extraction (SVE), as described in the Report. In addition to SVE, the remedial action plan presented various remedial actions and recommended completion of the following activities:

- Soil excavation in the areas, outlined on Figure 6B (attached) from the Report;
- Implementation of engineered barriers to limit direct contact and groundwater infiltration will consist of the building, pavement, soil, and vapor barriers;
- Groundwater remediation through natural attenuation.

Remedial Action Review

Wis. Admin. Code § NR 722.05(4)(a) states that responsible parties shall identify, evaluate, and document an appropriate range of remedial action options to address each contaminated medium when a site investigation report is completed in accordance with Wis. Admin. Code ch. NR 716. As previously indicated, the DNR cannot approve the remedial action plan presented in the Report at this time because the site investigation is not complete. However, based on the DNR's review of the remedial actions proposed in the Report, the following comments and questions are provided to assist with future remedial actions options evaluation(s):

I. Vapor – remedial action and mitigation

Wis. Admin Code § NR 726.05(8)(b) states that prior to case closure, any site where vapors are present above their respective VRSLs must complete a remedial action to reduce the mass and concentration of volatile organic compounds (VOCs) to the extent practical. Additionally, the vapor exposure pathway must be interrupted or mitigated.

The feasibility and design of the vapor mitigation system (VMS) presented in the Report does not provide enough evidence to show that it will adequately interrupt or mitigate vapors. Below are specific comments and questions regarding the system and its ability to provide protective conditions to future occupants of the building:

A. Vapor remediation

1. Discuss how the reduction in the mass and concentration of the contamination at the site will be measured during the operation of the SVE system. Provide the calculation(s) that will be applied to monitor the reduction in mass and concentration of contamination. Please note that if the selected remediation does not show a reduction in the mass and concentration of contamination, then additional remedial action will be required prior to case closure.

2. Discuss the specific goal(s) for the SVE system as a remedial action. Provide an estimate for the mass of the contamination that will be removed during the operation of the SVE system.

B. Vapor mitigation

1. Vapor mitigation system

i. The current density of sub-slab vapor probes used to investigate sub-slab vapors beneath the building are likely not dense enough to capture all of the source areas and/or areas with VRSL exceedances, especially given the nature of the subsurface soils (i.e., clay soils with high moisture content). Therefore, the DNR has determined that the VMS must be effective in all areas of the building. Revise the system as necessary.
   a. Discuss whether the potential for diffusion has been evaluated, per Section 8.1.2. of RR-800, *Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin*. Evaluate and discuss whether the high concentrations of TCE in vapors (such as at SS-25) could result in enough diffusion of vapors through the 4-inch thick concrete slab to present a concern of vapor intrusion regardless of the operation of the VMS.

ii. Two individual drop points and fans are proposed to be placed near sub-slab sample locations SS-4 and SS-40. SS-4 and SS-40 could not be sampled during the December 2020 sub-slab vapor investigation due to the presence of a high-water table. Additionally, a pilot test could not be conducted near these sample locations at the vapor extraction point VE-1 due to the frozen ground and/or high-water table.
   a. Discuss whether the VMS will properly function in this area of the site given the wet subsurface conditions. Moreover, discuss what modifications may be necessary to ensure that the VMS is properly functioning.
   b. Discuss whether the VMS will be protective to the occupants in this area of the building.

iii. The VMS is proposed to operate at 44-inches of water to overcome the resistance created by the clay soils beneath the building, which is not a typical vacuum for a VMS. Considering this parameter combined with the clay soils and condition of building slab, discuss whether the system may pull air out of the building or create short circuiting via the newly created utility trenches, old utility trenches or through outer foundation walls, which may impact the system's radius of influence. Describe how this will be measured or otherwise evaluated during future pilot testing.

iv. Discuss whether dewatering will be necessary during remediation and redevelopment, specifically in the northern area of the site where the water appears to be immediately below the building slab. More specifically, discuss whether dewatering will be necessary for the VMS to properly function.

v. The Report did not address several design considerations presented in Table 8f, *Parking Garage Ventilation – Mitigation Design Basics*, of Appendix C in RR-800, as detailed below:
   a. Discuss how the penetrations to the upper building floors are being sealed. Describe the condition of the ceiling above the parking garage and indicate whether any sealing of this ceiling will be necessary.
   b. There are two elevator shafts and several stairwells adjacent to the parking garage, which can act as pathways for vapors to migrate to upper building floors. Describe how these are building features are being evaluated and considered in the VMS design.

c. Discuss the source of intake air into the parking garage. As presented in Table 8f, high ventilation can increase vapor intrusion if the ventilation causes high interior negative pressures in relation to the subsurface pressures.
d. What is the expected subsurface pressure in the parking garage relative to the sub-slab pressure, the overlying pressure, and the pressure in adjacent spaces?
e. Describe how the pressures described above will be monitored.

vi. The pilot pressure testing completed for the VMS was not working against a negative operating indoor air pressure, which will be established during redevelopment and will ultimately be the condition present when building is occupied. Pilot pressure testing should be re-evaluated once the negative operating indoor air pressure is established in the building.

vii. Provide a contingency plan for if the VMS does not achieve an adequate pressure-field-extension throughout the entire building, which will be required prior to case closure.

viii. A robust indoor air sampling program will be required following the installation of the VMS and after the interior construction is complete and the heating, ventilation and air conditioning (HVAC) systems are operational.
a. Given the scale of the building, number of rooms, and potential variability due to source and building factors, the DNR recommends using a real time portable gas chromatography-mass spectrometry (GC/MS) to initially assess the building. Additionally, cannisters and passive air sampling should be conducted in the elevator shafts.

2. Preferential routes for vapor migration must be assessed, as detailed below:

i. The DNR understands that there is a tunnel beneath the 32nd Street right-of-way that connects the east and west block of the Community Within the Corridor redevelopment and that the tunnel will be filled during redevelopment.
a. Describe whether the tunnel is actively used.
b. Provide the depth and the dimensions of the tunnel.
c. Describe what type of material the tunnel will be filled with.
d. Discuss whether the tunnel represents a potential source for vapor contamination.
e. Discuss whether the tunnel may have a negative impact on the effectiveness of the VMS.
f. Discuss whether there is an opportunity to collect vapor samples from within the tunnel before the tunnel is filled, and if so, provide a sampling plan.

ii. As indicated in RR-800, a tight foundation is an important element of a sub-slab depressurization system (i.e., VMS). The DNR understands that the building foundation is generally 4- to 5-inches thick throughout the building, with few areas being 8-inches thick.
a. Describe the condition of the slab throughout the building.
b. Describe how the foundation will be sealed, including floor cracks and perimeter cracks/joints and around any penetrations (i.e., columns).
c. The Report states that regular sealing of any cracks will allow the VMS to achieve the required zone of influence. Describe how this will be accomplished when the building floor is finished. Clarify whether this action will only be performed in the parking garage, or through the entire building.

d. Discuss whether the walls are poured solid concrete or consist of concrete blocks that are hollow.
e. Discuss whether the columns in the basement of the building are poured concrete or whether they are hollow.

iii. The DNR understands that there are three elevator shafts in the building and that passive air samples will be collected from each elevator shaft.
a. Describe if and/or how the pits will be sealed to prevent vapors from entering them.

iv. The DNR has not received an assessment of utilities as a preferential pathway for migration of contamination.
a. Present the locations of any utility pipes, such as sewers or drains on a figure and indicate whether any existing utilities will be retained or abandoned.
b. Discuss whether there is a potential for vapor movement into the occupied spaces through any utility pipes, such as sewers or drains.
c. Indicate whether historic sewer pipes beneath the building have been abandoned. If not, discuss whether these pipes could be contaminated from historic solvent disposal and may be acting as a source of contamination.

C. Acute risks of TCE in vapor

One of the contaminants of concern at this site, TCE, poses a short-term (i.e., acute) health risk in indoor air at concentrations that exceed its applicable VRSL. More specifically, TCE presents an acute risk of fetal heart malformation that may occur when a pregnant mother is exposed to TCE vapors in the first trimester of pregnancy, as indicated in Section 3.4.1 of RR-800. Department of Health Services recommends that if TCE is present beyond the building envelope at or above the VRSL and women of child-bearing age are present, that indoor air be evaluated with a quick lab turnaround (24- to 72-hours). Given the nature of the proposed building use, the presence of the above-referenced demographic should be presumed. TCE is present beneath the site building in sub-slab vapors at concentrations that exceed not only the residential VRSL, but also the industrial VRSL. Given these conditions and the information provided above, establishing the indoor air concentrations prior to occupancy is highly recommended. Periodic sampling of indoor air throughout a given year to ensure protectiveness is also highly recommended.

II. Soil – remedial action

The remedial action plan portion of the Report did not evaluate and incorporate all soil data that was available at the time that the Report was created and submitted to the DNR. Not including this soil data in the remedial action plan results in a misrepresentation of the degree and extent of contamination being addressed by the proposed remedial action, thus making it difficult for the DNR to evaluate the proposed plan. All available data must be included and considered in future remedial action plans submitted to the DNR.

A. Soil excavation

1. The Report indicates that there will be four main areas of excavation at the site which will focus on the parking garage area and the utilities beneath the building. Considering these excavations are to facilitate redevelopment and were not specifically designed or remediation,

evaluate and discuss whether soil excavation could occur in areas where the concentration of soil contamination is highest. Provide evidence of any access limitations which might impact the feasibility of source area soil excavations.

2. Discuss how the planned soil excavation and introducing off-site fill material beneath the building will alter sub-slab dynamics. More specifically, discuss whether potential accumulation of groundwater within these areas of excavation may the impact the VMS.

3. The Report indicates that approximately 12,000 tons of soil will be excavated as a part of site redevelopment. However, this is the total amount of soil excavation that is proposed for both the west and east blocks of the Community Within the Corridor redevelopment. The DNR understands that that less than half of this anticipated total volume of soil will be removed from this site (east block) during redevelopment. Future reports should provide information specific to the east block only.

B. Engineered barrier

1. The DNR does not have any feedback to provide for the engineered barrier presented in the Report. The proposed engineered barrier can be re-evaluated once the site investigation is complete.

III. Groundwater – remedial action

A. Natural Attenuation as a remedial action for groundwater contamination at this site will be re-assessed once there is a complete groundwater investigation presented to the DNR.

Schedule

The DNR understands that a strict construction schedule has been established for this site. Nevertheless, this case must follow the Wis. Admin. NR 700 code series to entirely investigate and remediate the environmental contamination on site to ensure protective conditions for the citizens that will reside in and utilize this residential and community-oriented redevelopment. Therefore, in consideration of administrative code requirements, and as detailed in the *Reopening of Closed Case at Community Within the Corridor – East Block (Former Wisconsin Industries Pension Plan & Trust)* DNR letter, dated April 6, 2021, the DNR is requesting the implementation of the following schedule:

- Per Wis. Admin. Code § NR 716.14, all sampling results are required to be submitted within 10-days of receiving laboratory data.
- Per Wis. Admin. Code § NR 716.09(1), submit a site investigation work plan within 60-days of the date of this letter, by June 8, 2021, that incorporates the DNR's review of site investigation, as presented above.
- Per Wis. Admin Code § NR. 716.15, submit a site investigation report within 60-days after the completion of the field investigation and receipt of the laboratory data.
- Per Wis. Admin Code § NR 722.13, submit a remedial action options report (RAOR) within 60-days after submitting the site investigation report. Consider and incorporate the DNR's review of the remedial action plan, as presented above, in the RAOR.

The DNR appreciates the actions you are taking to restore the environment at this site. If you have any questions concerning this site or this letter, please contact me, the DNR Project Manager, at (414) 263-8603, or by email at Jane.Pfeiffer@wisconsin.gov, and we can schedule a meeting to address any questions you may have.

Sincerely,

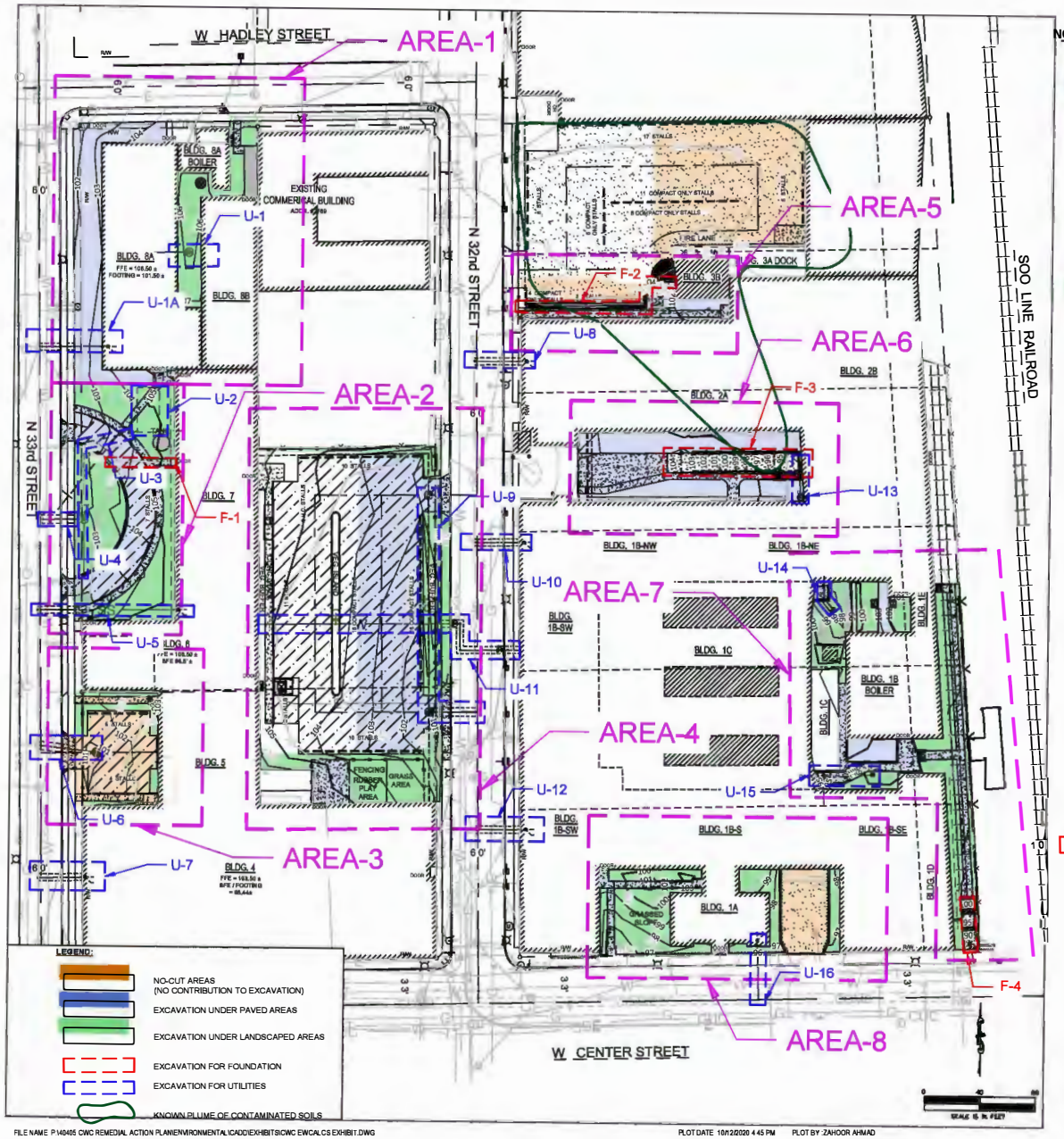
Jane Pfeiffer

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

Enclosures:

- Figure 6B, Earthwork Calculations Exhibit, dated September 21, 2020

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



FILE NAME: P:\40405 CWC REMEDIAL ACTION PLAN\ENVIRONMENTAL\CADD\EXHIBITS\CWC EWCALCS EXHIBIT.DWG PLOT DATE: 10/12/2020 4:45 PM PLOT BY: ZAHOOR AHMAD

NOTE: EXCAVATION QUANTITIES ESTIMATED BY ENVIRONMENTAL CONSULTANT FOR DISPOSAL PURPOSES. ACTUAL EXCAVATION QUANTITIES TO BE DETERMINED BY THE CONTRACTOR.

Excavation under Paved Areas

	t Volume (C.Yd)
= F/27	
	115
	313
	1,599
	59
	106
	91
	14
	2,296

Excavation under Landscaped Areas

	ut Volume (C.Yd)
G = F/27	
	127
	699
	27
	857
	311
	226
	2,247

Volume C.YD)	Notes
D / 27	
3	Storm
75	Sanitary
315	Vault
50	Storm
19	Storm
137	Sanitary
24	Storm
59	Sanitary
64	Sanitary
39	Storm
62	Sanitary
171	Water
64	Sanitary
13	Storm
10	Storm
22	Storm
74	Sanitary
1,201	

tes

& Construction
Construction
ction & Storm

nary

e	Cut Volume (C.YD)
4	2,296
1	2,247
0	1,201
9	771
5	6,515

KSingh Engineers Scientists Consultants
3636 North 124th Street
Wauwatosa, WI 53222
262-821-1171

CONSULTANT

CONSULTANT

CONSULTANT

PROJECT TITLE: COMMUNITY WITHIN THE CORRIDOR
MILWAUKEE, WI
PROJECT NUMBER: 40405

CLIENT: COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

REVISIONS	DATE	DESCRIPTION

DRAWN BY: AMZ DATE: 09/01/2020
CHECKED BY: KVH DATE: 09/01/2020

EARTHWORK CALCULATIONS EXHIBIT

FIGURE 6B

SHEET 65 of SHEET 71

ATTACHMENT B

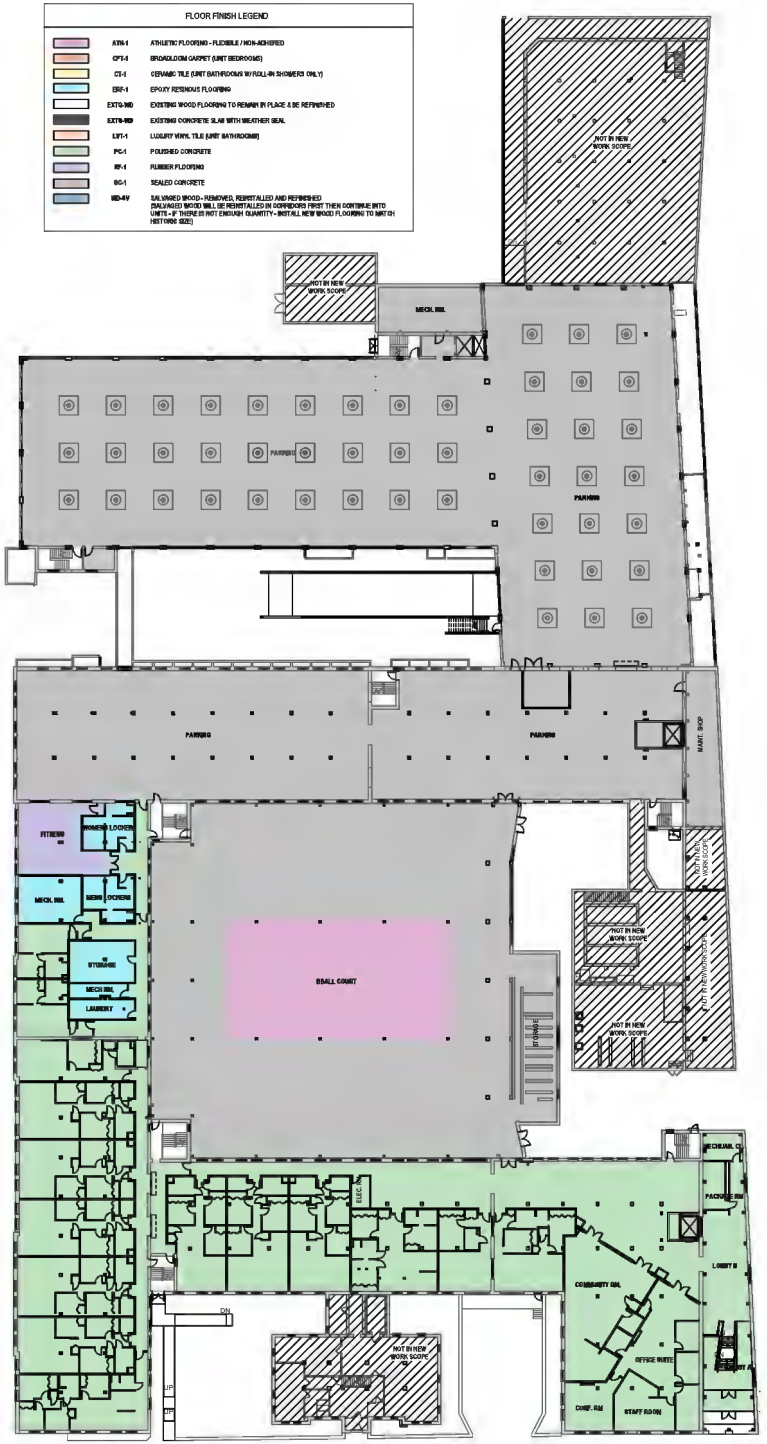
Floor Finish Plan

2 FINISH PLAN - LEVEL 02

Scale: 3/64" = 1'-0"

0' 2.63' 5.3' 8'

FLOOR FINISH LEGEND		
	ATH-1	ATHLETIC FLOORING - FLEXIBLE / NON-ADHERED
	CPT-1	BROADLOOM CARPET (UNIT BEDROOMS)
	CT-1	CERAMIC TILE (UNIT BATHROOMS W/ ROLL-IN SHOWERS ONLY)
	EPX-1	EPOXY RESINOUS FLOORING
	EXTG-WD	EXISTING WOOD FLOORING TO REMAIN IN PLACE & BE REFINISHED
	EXTG-WD	EXISTING CONCRETE SLAB WITH WEATHER SEAL
	LVT-1	LUXURY VINYL TILE (UNIT BATHROOMS)
	PC-1	POLISHED CONCRETE
	RF-1	RUBBER FLOORING
	SC-1	SEALED CONCRETE
	WD-SV	SALVAGED WOOD - REMOVED, REINSTALLED AND REFINISHED (SALVAGED WOOD WILL BE REINSTALLED IN CORRIDORS FIRST THEN CONTINUE INTO UNITS - IF THERE IS NOT ENOUGH QUANTITY - INSTALL NEW WOOD FLOORING TO MATCH HISTORIC SIZE)



1 FINISH PLAN - LEVEL 01

Scale: 3/64" = 1'-0"

0' 2.63' 5.3' 8'

KEY PLAN

T 414.220.9640
751 N Jefferson St.
Suite 200
Milwaukee, WI 53202

CONSULTANTS:

COMMUNITY WITHIN THE CORRIDOR - EAST BLOCK

2748 N. 33rd Street
Milwaukee, WI 53210

SHEET TITLE: FLOOR FINISH PLAN - LEVEL 01 & 02

REVISIONS:

SCALE	VARIES
PROJECT NUMBER	200102
SET TYPE	CONSTRUCTION DOCUMENTS
DATE ISSUED	09/25/20
SHEET NUMBER	A901E