vEKtor consultants

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August 23, 2024

Meghan Medwid
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York, 12233

Re: Addendum to Pilot Test Work Plan for In-Situ Stabilization/Solidification
450 Union Street (BCP No. C224219)
Brooklyn, NY 11231

Vektor Consultants, on behalf of 2201 Union LLC (the "Applicant"), has prepared this letter as an Addendum to the Pilot Test Work Plan for In-Situ Stabilization/Solidification (ISS) submitted to NYSDEC on June 26, 2024. This Addendum includes a revised Soil and Materials Management Plan (SMMP) to supplement the site preparation work outlined in the original Pilot Test Work Plan due to the significant obstructions identified during the pilot test. Upon commencement of the pilot test program at the Site on August 15th, 2024, large obstructions were encountered at depths that required deeper than anticipated excavation. Therefore, the ISS column locations need to be pre-cleared using specialized equipment to remove the debris (i.e., concrete and steel) at or below 10 feet below grade. This Addendum also proposes to pre-clear obstructions within the full-scale ISS treatment area after completion of the pilot testing and monitoring well and recovery well decommissioning. The procedures for the proposed scope of work are described within the enclosed SMMP. This SMMP will be implemented with the Community Air Monitoring Plan and Health and Safety Plan included in the Pilot Test Work Plan.

Soil/Materials Management Plan

Pre-cleared obstructions, such as concrete and debris, will be staged atop polyethylene sheeting, covered, and secured by the end of each workday until disposal off-site. Soil excavated from the column locations to facilitate the removal of the obstructions will be backfilled back into their original column locations from which it was removed once the obstructions have been fully removed or by the end of each workday, as needed. As noted, during the commencement of the pilot test obstructions have at depths of 10 feet below grade. As the pilot testing is still ongoing, these areas are being pre-cleared prior to the installation of ISS columns, as necessary, and soil is backfilled back into the column locations to be mixed via ISS. Based on the number of obstructions observed during the pilot testing,

it is anticipated that other obstructions (at depth) are likely within the remainder of the treatment area. As such, pre-clearing column locations is proposed prior to the full-scale implementation.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced. The tarps will be reused until the Remedial Engineer (RE) determines they need to be replaced. Hay bales will be used as needed near catch basins, surface waters, and other discharge points. A site preparation plan is shown in Figure 1.

The former support of excavation (SOE), which was noted as a temporary shoring wall for the high-level relieving platform work (2019), was also encountered during the pilot test. As a portion of the SOE protrudes into the ISS work area in a southwest-northeast orientation, these elements would need to be removed to facilitate the installation of the ISS via auger mixing. Steel H-beams, noted to be advanced 45 feet below grade, and timber lagging, noted to be installed up to 10 feet below grade, will need to be removed from the ISS work area. The remaining sections of SOE, running in a north-south orientation immediately west-adjacent to the high-level relieving platform will not be disturbed and all ISS activities will be conducted west of that area. The locations of the former SOE and area of SOE to be removed are shown in Figure 2.

Visual, olfactory, and PID soil screening and assessment will be performed by a qualified environmental professional or experienced field geologist under the direction of the Remedial Engineer during all remedial and development excavations into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy.

Water will be available on-site at a suitable supply and pressure for use in dust control when necessary. To reduce the suspension of dust, vehicle speeds within the Site will be limited with the spraying of water in vulnerable areas before the performance of work in which dust is likely to occur.

Fluid Management

During the pre-clearing and Site preparation activities, liquids will not be recharged back to the land surface or subsurface of the Site or into the New York City sewer system. As most of the water introduced during this work will be utilized within the batch plant for grout production, dewatering is not anticipated. Other uses for water during this work include dust control, as needed, and washing out equipment/hoses during grout operations. Washout activities will be conducted within the treatment area, and washout fluids are to be discharged onto the pilot test columns.

Stormwater Pollution Prevention Plan

Barriers and hay bale checks will be installed, as needed, and inspected on a daily basis. The results of the inspections will be recorded in a logbook maintained at the Site and made available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed, as required, to keep the barrier and hay bale check functional. Silt fencing, if needed, shall be repaired immediately with appropriate backfill materials. The manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the work plan shall be observed to ensure that they are operating correctly. Nothing will be discharged off-site during the implementation phase. Silt fencing or hay bales will be installed, as needed, around stockpiles and the Site perimeters near the treatment area.

Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis include applying foam suppressants or tarps over the odorous materials. If nuisance odors are identified, work will be halted, and the source of the odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Remedial Engineer.

All necessary means will be employed to prevent on- and off-site nuisances. Since shallow soil removal likely does not require odor control, odor exposure would be limited to spoils generation while auguring. At a minimum, procedures will include using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will consist of (a) the use of chemical odorants in spray or misting systems and (b) the use of staff to monitor odors in surrounding neighborhoods.

Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-Site work will include, at a minimum, the items listed below:

- Water will be available on-site at a suitable supply and pressure for use in dust control. Dust suppression will be achieved through spraying water directly onto off-road areas, including excavations and stockpiles.
- On-Site roads will be limited in total area to minimize the area required for water spraying.
- Vehicle speeds within the Site will be limited to prevent dust suspension.

Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, as well as during all remedial work. A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to NYCDEP noise control standards.

Community Air Monitoring Plan

Community air monitoring will be performed during pre-clearing work, as required by the DER-10. Further details of the CAMP are in Appendix A of the previously submitted Pilot Test Work Plan.

Groundwater Monitoring and Recovery Wells Decommissioning Plan

The existing groundwater monitoring and recovery wells at the Site will be properly decommissioned in accordance with NYSDEC Commissioners Policy CP-43. At this time, all wells are anticipated to be decommissioned via grouting. Nineteen of the twenty (20) wells at the Site, within and near the treatment area, are constructed of 2" diameter PVC riser, and their casings will be removed during grouting, if able. It may be infeasible for RW-02, one of the recovery wells, consisting of a 6" diameter steel riser, to be pulled after grouting and may be an obstruction during auguring work. Over-drilling and pulling of the well casing will be attempted to remove the well if it cannot be removed via grouting/pulling.

Vektor submitted a formal written request to NYSDEC on August 20, 2024, to prepare the Site wells for decommissioning. Upon approval of the request, the NYSDEC will be notified prior to the decommissioning of the wells during the site preparation phase of the work with monitoring well field inspection forms and the written request for decommissioning. Well-decommissioning work will be conducted, and decommissioning records will be prepared for the nine groundwater monitoring wells and two DNAPL recovery wells. Records of the decommissioning, along with the original well documentation, will be sent to the NYSDEC but will also be appended to the Remedial Site Optimization Report (RSOR) for the ISS work.

The groundwater monitoring wells and DNAPL recovery well locations to be decommissioned are shown in Figure 3.

Regards,

Thomas Giordano
Project Manager

Ezgi Karayel
Principal

Enc.

Figure 1: Site Preparation Plan
Figure 2: Former High-Level Relieving Platform Support of Excavation Locations
Figure 3: Groundwater Monitoring and Recovery Well Locations

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Robert Doster, 2201 Union LLC
Heidi M. Dudek, NYSDEC
Aaron G. Fischer, NYSDEC

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Legend:

- Proposed ISS Treatment Area with localized excavations for removal of obstructions
- Proposed Building Footprint Within Treatment Area
- High-Level Relieving Platform
- Soil/Spoils Staging Area
- Contractor Equipment and Materials Staging Area
- Private Site Storm-Sewer Infrastructure Locations (To Be Removed)
- Site Access

Scale: AS SHOWN

Figure No. 1

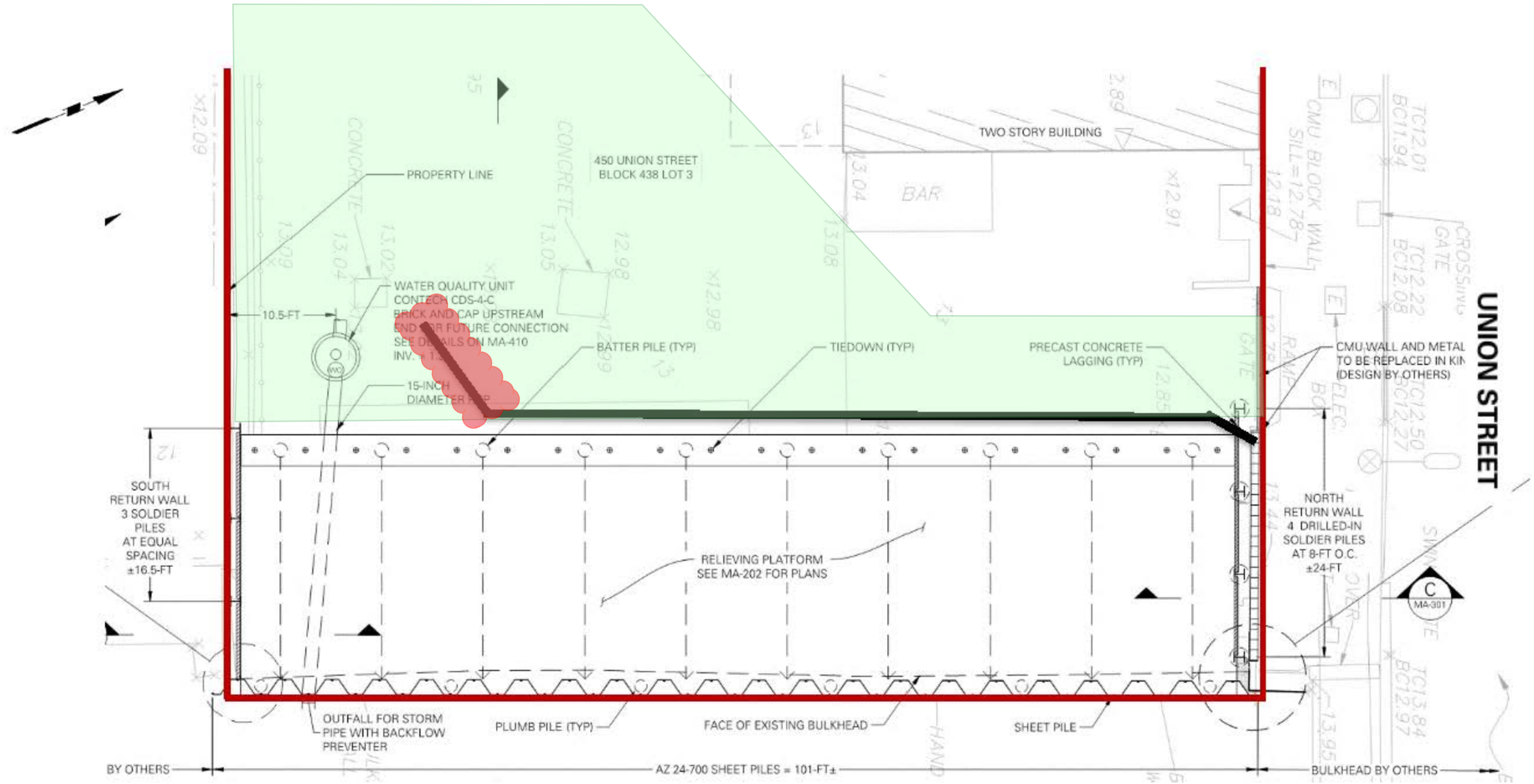
Figure Name: Site Preparation Plan

Report: Addendum Letter to Pilot Test Work Plan

Date: 8/22/2024

Drawn By: TG

Site Address: 450 Union Street
Brooklyn, New York



GOWANUS CANAL

Legend:

Approximate BCP Site Boundary

Approximate Location of Temporary Shoring Wall

Note: Drawing background from November 4, 2019 Bulkhead Design "Bulkhead Plan and Elevation" by Langan.
Base map and features by Langan was derived from "Final Engineering Report for 450 Union Street" dated December 18, 2020

16' 8' 0 16' 32'

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Legend:

Proposed ISS Treatment Area

Support of Excavation To Be Removed In ISS Work Area

Notes:

1. All feature locations are approximate
2. Base Plan is provided by Langan
3. Base Plan features were derived from "Final Engineering Report for 450 Union Street" by Langan dated December 18, 2020

Scale: AS SHOWN

Figure No. 2

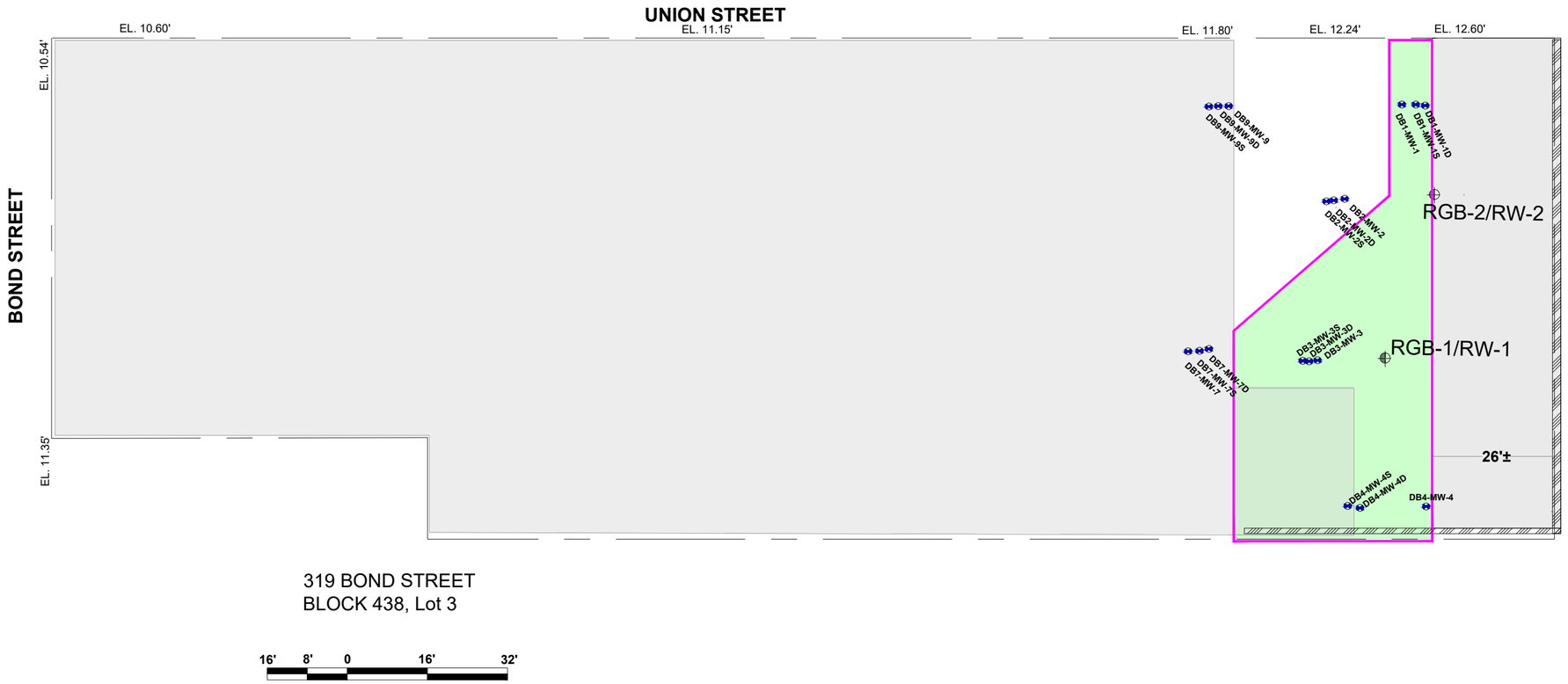
Figure Name: Former High-Level Relieving Platform Support of Excavation Locations

Report: Addendum Letter to Pilot Test Work Plan

Date: 8/22/2024

Drawn By: TG

Site Address: 450 Union Street Brooklyn, New York



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Legend:

- Monitoring Well Location and ID to be decommissioned
- Recovery Well Location and ID to be decommissioned
- ISS Treatability Work Area

Notes:

1. All feature locations are approximate
2. Base Plan is provided by Mueser Rutledge Engineers PLLC
3. DBX-MW-XD: Deep Monitoring Well screened below GCM and ID DBX-
4. MW-XS: Shallow Monitoring Well screened at groundwater interface and ID
5. DBX-MW-X: NAPL Mobility Well screened over GCM interval
6. All wells to be removed via grouting in place (NYSDEC CP-43) and casings pulled, if able.

Scale:
AS SHOWN

Figure No.	3
Figure Name:	Groundwater Monitoring & Recovery Well Locations
Report:	Addendum Letter to Pilot Test Work Plan
Date:	8/22/2024
Drawn By:	KB
Site Address:	450 Union Street Brooklyn, New York