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October 29, 2020

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7016

Attn: Kimberly Junkins

Re: Additional Remedial Investigation Work Plan
965 Mamaroneck Avenue, Mamaroneck, NY
Westchester County TaxID No. 8-20-244
BCP Site No. C360189

Dear Kimberly:

This letter work plan describes the scope of work proposed to supplement the New York State Department of Environmental Conservation (NYSDEC) approved Remedial Investigation Work Plan (RIWP) dated January 2020 and Supplemental Remedial Investigation Work Plan (SRIWP) dated July 8, 2020. Tenen Environmental, LLC (Tenen) conducted remedial investigation (RI) activities at 965 Mamaroneck Avenue, Mamaroneck, New York (Site) in March 2020 and supplemental remedial investigation (SRI) activities at locations surrounding the Site in July 2020. Upon submittal of analytical data from the RI and SRI to NYSDEC, the Department requested additional work be conducted to further delineate chlorinated volatile organic compounds (cVOCs) found in groundwater across Mamaroneck Avenue and to assess the potential presence of a soil source area of per- and polyfluoroalkyl substances (PFAS) in the southeast corner of the Site. This Additional RIWP has been prepared to address the Department's requests for additional investigation in accordance with the NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10, May 3, 2010). Methodology, quality assurance/quality control, health and safety (including community air monitoring) and citizen participation activities will be implemented in accordance with Tenen's NYSDEC-approved RIWP.

Background

The Site is located at 965 Mamaroneck Avenue in the Village and Town of Mamaroneck, New York. The Site is an irregularly shaped parcel, identified by Westchester County TaxID No. 8-20-244 with an area of approximately 22,520 square feet (SF). The Site is located on the southeast corner of the intersection of Mamaroneck Avenue and North Barry Avenue Extension.

In accordance with the January 2020 NYSDEC-approved RIWP and July 2020 NYSDEC-approved SRIWP, Tenen conducted RI and SRI activities at the Site in March and July 2020, respectively. The results of these investigations are being used to prepare Tenen's draft Remedial Investigation Report.

Groundwater samples collected during the RI and SRI indicate that cVOCs are present in groundwater at concentrations above the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (Class GA Standards) across the Site and offsite to the west, with the highest concentrations occurring in the offsite wells along the eastern sidewalk of Mamaroneck Avenue. The results of the RI also indicate that elevated concentrations of PFAS are present in groundwater in the southeast corner of the Site. A groundwater flow analysis and monitoring well survey was conducted and groundwater flow direction was determined to be east with an onsite northerly component. Based on these findings, NYSDEC requested additional sampling in order to better understand the groundwater flow network surrounding the Site, determine the nature and extent of cVOC impacts within groundwater surrounding the Site, evaluate the water

lines beneath the onsite building and assess potential PFAS impacts in soil that could be contributing to PFAS impacts found in groundwater collected from the southeast corner of the Site.

Scope of Work

The following scope of work was discussed with NYSDEC and the New York State Department of Health (NYSDOH) during a conference call on October 8, 2020. This scope of work is proposed to supplement and confirm the findings of the RI and SRI.

The following scope of work will be implemented:

Soil

- Re-install RI soil boring SB-4 to the groundwater interface (approximately 9 feet below grade [ft-bg]) and RI soil boring SB-3 to 11 ft-bg;
- Collect soil samples from SB-4 at two-foot intervals from grade to termination depth of the boring;
- Re-collect one soil sample from SB-3 from the location where the highest PFAS concentration was detected in the RI (9-11 ft-bg); and
- Soil samples collected from SB-3 and SB-4 will be analyzed for PFAS via isotope dilution. If any individual analyte is detected over 1 nanogram per gram (ng/g), that sample will also be tested via Synthetic Precipitation Leaching Procedure (SPLP) and the leachate analyzed for PFAS.

Groundwater

- Install two offsite permanent groundwater monitoring wells (MW-13 and MW-14) to assess groundwater quality and delineate previously identified cVOC impacts. One monitoring well will be installed to the south of MW-10, along the eastern sidewalk of Mamaroneck Avenue and one monitoring well will be installed in the western sidewalk of Mamaroneck Avenue, directly across from the Site;
- Soil samples will be collected from the monitoring well locations if evidence of impacts are observed in the field;
- Gauge and collect groundwater samples from two newly-installed monitoring wells;
- Gauge and re-collect one groundwater sample from previously installed monitoring well MW-10 to confirm the results of the SRI;
- Samples from newly installed and previously installed groundwater monitoring wells will be analyzed for Target Compound List (TCL) VOCs by EPA Method 8260C; and
- Survey newly installed monitoring wells; collect one round of depth-to-groundwater measurements from the entire well network; evaluate groundwater elevations and present updated groundwater contours.

Grey Water Lines

- Existing grey water lines beneath the Site building, in landscaped areas surrounding the Site building and within the sidewalk (if applicable) will be investigated via a downhole camera to identify any potential past or present discharges;
- Lines will be mapped and soil borings will be advanced in accordance with Section 3.9.6 of DER-10 and will generally consist of the following:
 - Soil samples will be collected zero to six inches below the piping and within two feet of the piping;
 - A minimum of one soil sample will be collected for a total piping length of one to 15 feet. An additional soil sample will be collected for each additional 20 linear feet of piping or portion thereof from 16 to 50 feet of piping length. Sample locations will be biased to include joints, dispensers and other potential discharge areas;
 - One soil boring will be advanced in proximity to each drain identified to the approximate depth of the drain bottom and one soil sample will be collected from each drain location; and
 - Soil samples will be analyzed for TCL VOCs via EPA Method 8260C.

Proposed onsite soil boring and offsite monitoring well locations are shown in the attached Figure 1. Grey water line sampling locations will be presented in the RIR subsequent to underground pipe mapping.

Soil Boring Installation and Soil Sampling Methodology

Soil borings will be installed and soil samples will be collected in general accordance with Section 3.2.1 of the RIWP as described below.

Soil cores collected during boring installation will be screened for VOCs using a 10.6 electron-volt (EV) photoionization detector (PID). All observations regarding potential contamination such as odors, staining, etc. will be documented. Soil cores from the borings will be collected and screened in five-foot intervals from grade to the terminal depth of each boring (groundwater interface for SB-4, MW-13, MW-14 and 11 ft-bg for SB-3). If evidence of contamination (e.g., elevated PID readings, odor or staining) is observed in the borings associated with well installation the soil boring will be extended, to the extent possible based on the equipment, to delineate the vertical extent of contamination and a soil sample will be collected from the interval of highest suspected impact as well as the next apparent non-impacted zone. If no contamination is observed in these borings, no soil samples will be collected.

Soil samples from SB-4 will be collected at two-foot intervals from surface grade to the groundwater interface. One soil sample will be re-collected from at SB-3 from 9 to 11 ft-bg. Soil samples collected from SB-3 and SB-4 will be analyzed for PFAS via isotope dilution and if any individual analyte is detected over 1 ng/g, that sample will also be tested via SPLP and the leachate analyzed for PFAS. Soil samples collected from MW-13 and MW-14, if any, will be analyzed for TCL VOCs by EPA Method 8260C.

Monitoring Well Installation and Groundwater Sampling Methodology

Monitoring wells will be installed and groundwater samples will be collected in accordance with Section 3.4.1 of the RIWP as described below.

Two permanent groundwater wells (MW-13 and MW-14) will be installed offsite in order to horizontally delineate cVOC impacts within the shallow aquifer (5-15 feet below grade) west and southwest of the Site. The two newly installed permanent groundwater wells will be sampled and analyzed for TCL VOCs by EPA Method 8260C and surveyed to a common datum. Depth-to-water readings will be collected for the entire well network, an updated groundwater flow direction will be calculated and the existing groundwater flow map will be revised and presented in the RIR.

Investigation of Grey Water Lines

In order to assess whether grey water lines at the Site are a potential source of impacted groundwater found along Mamaroneck Avenue, an assessment of grey water lines connected to the Site building will be performed using a downhole camera. Soil samples will be collected along the lines in accordance with Section 3.9.6 of DER-10 and will be biased to include areas where cracks, holes, joints and inverts are present, if any. Drains will be identified and one soil sample will be collected in proximity to each drain at the approximate depth of the drain bottom. Soil samples collected as part of the underground piping investigation will be analyzed for TCL VOCs by EPA Method 8260C. The grey line evaluation will be completed by a plumber licensed in the state of New York.

Quality Assurance/Quality Control

Soil and groundwater samples will be collected in accordance with the Quality Assurance Project Plan (QAPP) included as Appendix B of the RIWP. The laboratory will report sample results on a five-day turn-around time. An independent sub-consultant will validate sample results and prepare a Data Usability Summary Report (DUSR).

Health and Safety

All work at the Site will be completed in accordance with the Health and Safety Plan (HASP) included in Appendix C of the RIWP.

Air Monitoring and Daily Reporting

The NYSDOH Generic Community Air Monitoring Plan (CAMP), included as Appendix 1A of DER-10 and Appendix D of the RIWP, will be implemented during all ground-intrusive sampling activities.

Daily reports will be sent to the NYSDOH and NYSDEC Project Manager via email. Daily reports will include a Site figure depicting Work Zones; activities; wind direction, in addition to CAMP monitor readings and CAMP station locations. Any exceedances of CAMP readings and corrective actions taken will be communicated to the NYSDEC and the NYSDOH Project Managers on the day of occurrence.

Investigation Derived Waste

Following the completion of sampling, boreholes will be backfilled with clean cuttings or sand. If grossly-contaminated soil cuttings are encountered or if excess soil cuttings are generated, they will be placed in 55-gallon drums. Any purge water or other investigation-derived waste (IDW) will be containerized in 55-gallon drums. After the investigation is complete, the drum contents will be characterized for offsite disposal.

Reporting

The findings of the Additional RI will be incorporated into the draft RIR and submitted to NYSDEC and NYSDOH for approval.

Please contact us if you need any additional information.

Sincerely,
Tenen Environmental, LLC

Alana Carroll

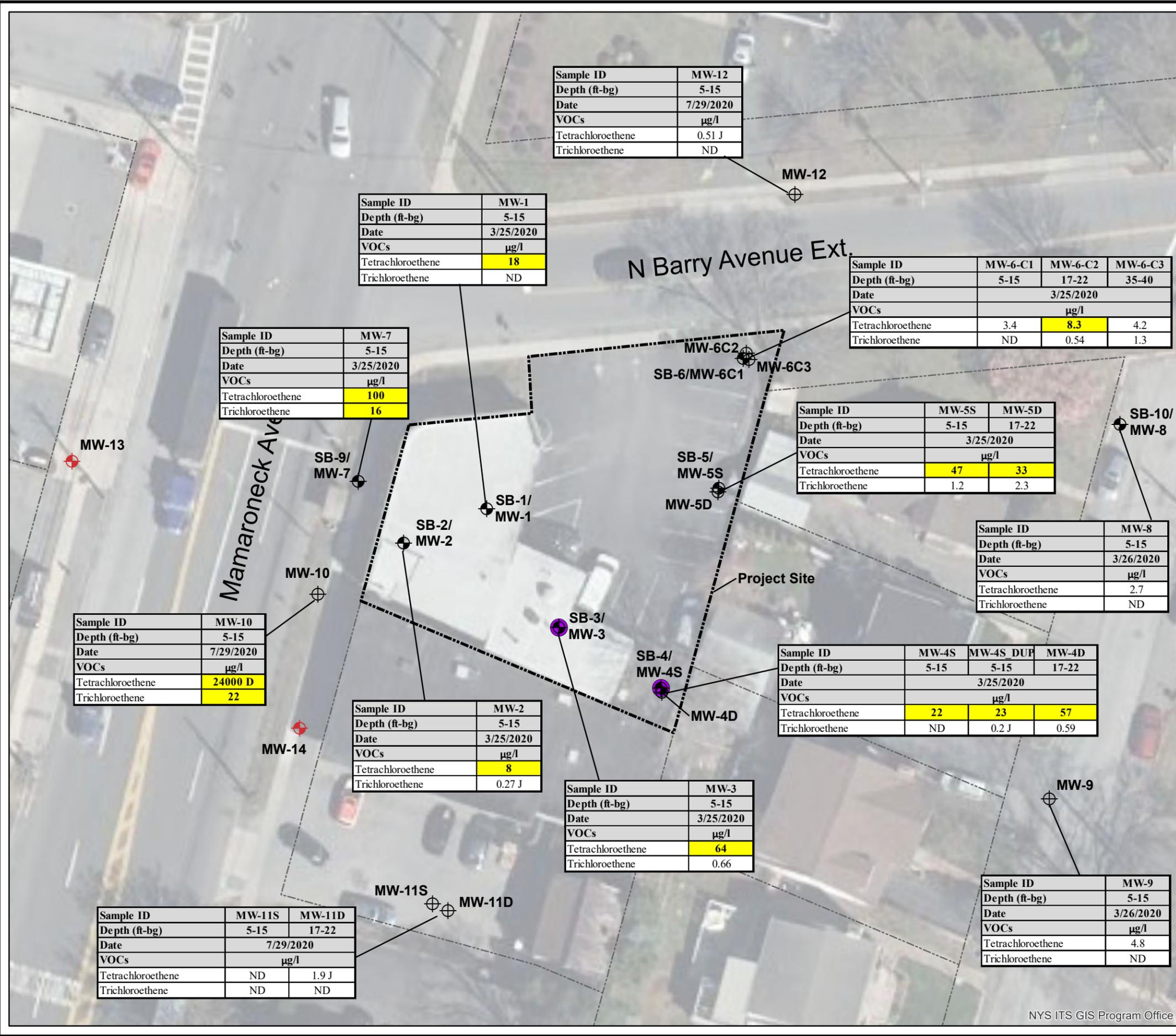
Alana Carroll, PG
Senior Project Manager

Attachments

Figure 1

cVOC Groundwater Results and Proposed Sampling Locations

Figure

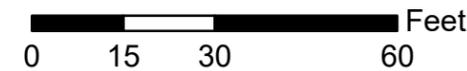


Analyte	NY-AWQS
VOCs	$\mu\text{g/l}$
Tetrachloroethene	5
Trichloroethene	5

- Notes:**
- 1. Bold and shaded yellow value indicates concentration exceeds NY-AWQS**
 2. NY-AWQS = NYSDEC Division of Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS)
 3. J = Estimated value
 4. ND = Not detected
 5. D = Diluted
 6. $\mu\text{g/l}$ = micrograms per liter

Legend

- Existing Soil Boring/Monitoring Well Locations
- Existing Monitoring Well Locations
- Proposed Soil Boring and Permanent Monitoring Well Locations
- Proposed Soil Boring Location
- Project Site
- Tax Lots



**965 Mamaroneck Avenue
Mamaroneck, New York**

Site



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Drawn By	LM
Checked By	AP
Date	October 2020
Scale	As Noted

**VOCs in Groundwater and
Proposed Sampling Locations**

Figure 1

Drawing No