

December 14, 2020

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

Attn: Benjamin Rung, P.E., Project Manager

Re: Vapor Mitigation System Effluent Air, Soil Vapor and Indoor/Outdoor Air Sampling Work Plan
786 Armonk Road – Mount Kisco, NY
Tax Lot: 101.15-1-3
DEC Site No.: 360024

Dear Mr. Rung:

This letter work plan presents the scope of work for the proposed sub slab depressurization system (SSDS) effluent air, sub-slab soil vapor and indoor air sampling for the above-referenced Site, as requested by the New York State Department of Conservation (NYSDEC) in an email dated April 30, 2020 and by the New York State Department of Health (NYSDOH) in a letter dated June 29, 2020.

Background

The Site, located at 786 Armonk Road, is a four-acre residential property located on the west side of Route 128 (Armonk Road) in the Town of New Castle, Village of Mount Kisco, Westchester County, New York. The Site is identified as New York State Department of Environmental Conservation (NYSDEC) Site #360024. The Site location is shown on Figure 1.

Based on information in the August 15, 2007 report prepared by Camp Dresser & McKee (CDM) of Edison, NJ, on behalf of NYSDEC, tenants renting the property were alleged to have utilized the residence as a drug processing facility between September 1987 through September 1989 and discharged organic chemicals into the septic system.

In January 2007, on behalf of NYSDEC, CDM conducted a soil vapor intrusion investigation to determine whether chlorinated volatile organic compounds (cVOCs) were present in the subsurface soil vapor and indoor air. Based on the elevated levels of cVOCs identified, NYSDEC and the New York State Department of Health (NYSDOH) recommended that a vapor mitigation system be installed at the property to mitigate potential impacts to the indoor air quality from cVOCs in the sub-slab soil vapor. An active sub-slab depressurization system (SSDS) was installed by Radon Management Inc. of North Scituate, RI, under contract to CDM, in July 2007. Post-mitigation indoor and ambient air sampling was conducted in December 2007.

Scope of Work

The following scope of work reflects NYSDOH's 6/29/20 comment letter and the 11/19/20 teleconference between Tenen and NYSDEC/NYSDOH. All samples will be collected in accordance with the New York State Department of Health (NYSDOH) *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, October 2006). Tenen will conduct a product inventory, using the procedures contained in the

NYSDOH Soil Vapor Guidance, prior to performing the sub-slab and indoor air sampling.

Effluent Air Sampling

An effluent air sample was collected to assess the concentrations of volatile organic compounds (VOCs) in the vapor mitigation system effluent air. The effluent air sample was collected from the effluent stack in a 2.7-liter Summa canister using a two-hour flow regulator. The effluent air sample was analyzed for VOCs using EPA Method TO-15. Following review of the sample results by NYSDEC and NYSDOH, the vapor mitigation system was shut down on December 11, 2020.

Sub-slab Soil Vapor, Indoor Air and Outdoor Air Sampling

Sub-slab soil vapor, and indoor air and outdoor air sampling will be completed during the heating season to assess the effectiveness of the remedial system installed at the Site. The proposed sampling will occur no sooner than 30 days after the vapor mitigation system was turned off. Proposed sample locations are shown on Figure 2.

The following scope of work will be implemented:

- Install one sub-slab soil vapor point;
- Collect one sub-slab soil vapor sample in the basement for a duration of 24 hours;
- Collect one co-located indoor air sample for a duration of 24 hours; and,
- Collect one ambient air sample for a duration of 24 hours.

The 24-hour duration is consistent with a residential use scenario.

Sampling Methodology

The sub-slab soil vapor point will be installed using a handheld rotary hammer. Access to the sub-slab will be gained by drilling through the concrete slab using a drill bit. Upon penetration, a disposable Vapor Pin® will be set no more than two inches below the slab. The sub-slab soil vapor sample will be collected in a six-liter Summa canister using a 24-hour regulator at a flow rate of 0.2 liters per minute (l/min).

Helium tracer gas will be used in accordance with NYSDOH protocols to serve as a quality assurance/quality control (QA/QC) measure to verify the integrity of the soil vapor probe seal. A portable monitoring device will be used to analyze a sample of soil vapor for the tracer prior to sampling. If a significant amount of helium is detected (> 10%), the probe seal will be adjusted to prevent infiltration.

The indoor air and ambient air samples will be collected at a rate of 0.2 l/min in a six-liter Summa canister, set at breathing height (three to five feet above the slab), using a 24-hour regulator. The door separating the first floor and the basement will be kept closed during the entirety of the sampling.

Sample Analysis

The sub-slab soil vapor, indoor air and ambient air samples will be analyzed for VOCs using EPA Method TO-15. All samples will be collected in accordance with the NYSDOH Soil Vapor Guidance.

The samples will be sent under chain-of-custody documentation to Alpha Analytical, Inc. of Mahwah, NJ (Alpha). Alpha is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). Alpha has the capability to achieve the appropriate reporting limits for comparison with the matrices contained in the NYSDOH Soil Vapor Guidance. These limits are 0.2 mcg/m³ for Matrices A and C and 3.0 mcg/m³ for Matrix B. An independent subconsultant will validate sample results and prepare a Data Usability Summary Report (DUSR) in accordance with DER-10.

If required, a confirmatory round of sampling, utilizing the above protocols, will be completed during the 2020-2021 heating season. The schedule for this work will be determined in consultation with NYSDEC and NYSDOH.

Reporting and Schedule

The results of the effluent air sampling were provided to the NYSDEC and NYSDOH and the system is shut down as of December 11, 2020.

After 30 days, the sub-slab soil vapor, indoor air and ambient air sampling will be performed. The results of the sub-slab soil vapor, indoor air and ambient air sampling will be compared to the NYSDOH Air Guidance Values (AGVs), matrices and/or ambient air background levels. Investigation results will be sent to the NYSDEC and NYSDOH within five days of receipt from the laboratory.

Please contact us if you need any additional information.

Sincerely,
Tenen Environmental, LLC



Matthew Carroll, P.E.
Principal / Environmental Engineer

cc: Sara Bogardus, NYSDOH

Figure 1 – Site Location Map
Figure 2 – Sample Location Map

REFERENCES

ISVWA – Marx Residence Vapor Mitigation System Installation Letter Report, prepared by CDM, August 15, 2007

Letter from S. Bogardus, NYSDOH to B. Rung, NYSDEC re: Marx Residence – Sampling Protocol dated June 29, 2020

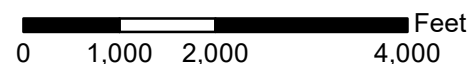
Email from L. Schmidt/NYSDEC to L. Olinde re: Marx Deed Restriction dated April 30, 2020

FIGURES



Basemap: USGS Topographic Map, 7.5 Minute Quadrangle, Mount Kisco, NY, 2019

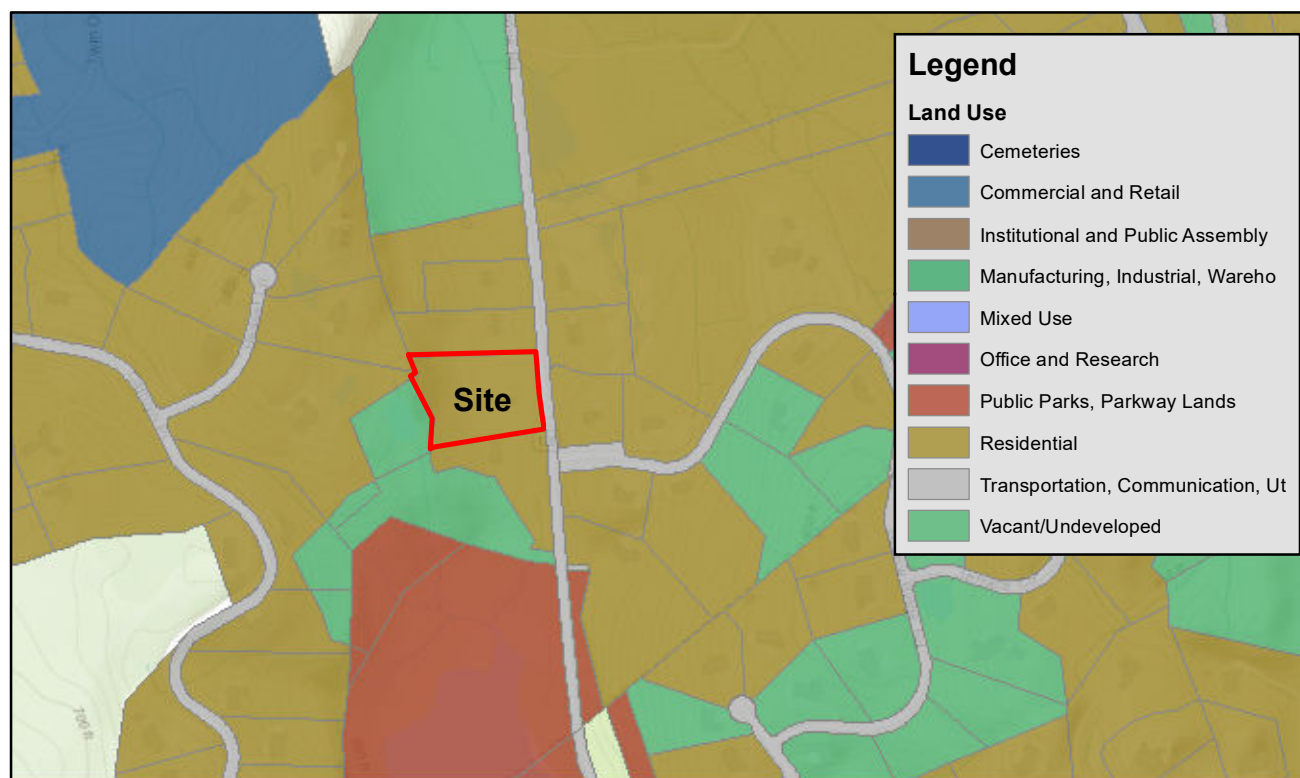
Site Location



December 1, 2020
 Tax parcel data was provided by local municipality. This map is generated as a public service to Westchester County residents for general information and planning purposes only, and should not be relied upon as a sole informational source. The County of Westchester hereby disclaims any liability from the use of this GIS mapping system by any person or entity. Tax parcel boundaries represent approximate property line location and should NOT be interpreted as or used in lieu of a survey or property boundary description. Property descriptions must be obtained from surveys or deeds. For more information please contact local municipality assessor's office.

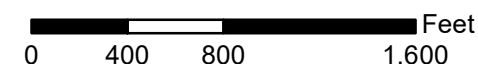


Municipal Tax Parcel Viewer
 Westchester County Geographic Information Systems



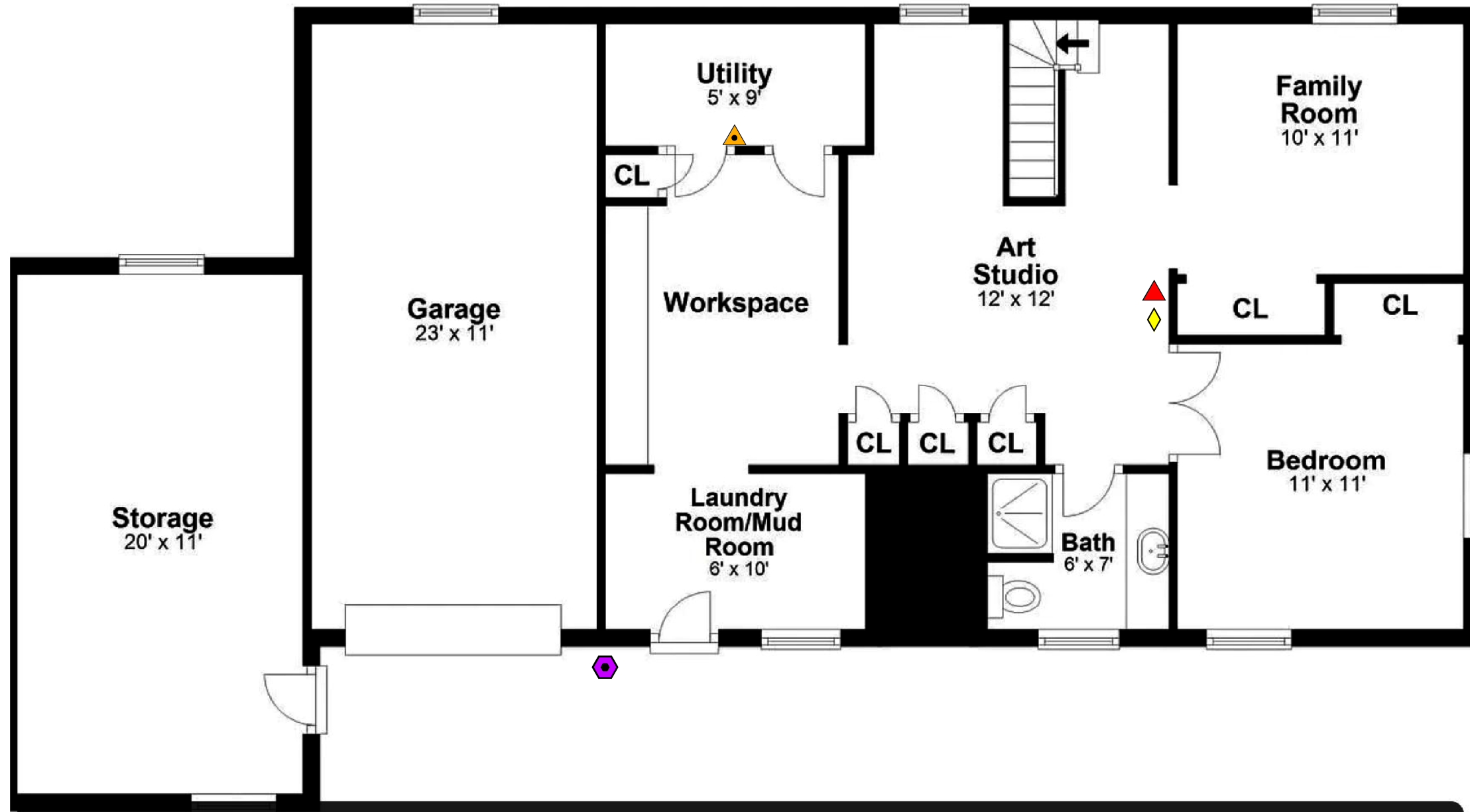
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 NYC Department of City Planning, Information Technology Division

Westchester County Dept. of Planning
 Parcel Based Land Use



786 Armonk Road Mount Kisco, New York Tax Parcel ID 101.15-1-3		Site	
Tenen Environmental, LLC 121 West 27th Street Suite 702 New York, NY 10001 O: (646) 606-2332 F: (646) 606-2379		Drawn By LM	Checked By CZ
Site Location Map		Date December 2020	Scale As Noted
Drawing Title		Figure 1	
Drawing No			

Lower Level



Legend

- ◆ Indoor Air Sample Location
- ▲ Sub-Slab Soil Vapor Point
- ▲ Effluent Air Sample Location
(Sample to be collected from sample port in the stack)
- ⬡ Outdoor Air Sample

Not to Scale

786 Armonk Road
Mount Kisco, New York
Tax Parcel ID 101.15-1-3

Site

TENEN ENVIRONMENTAL

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121 West 27th Street
Suite 702
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Drawn By LM

Checked By CZ

Date December 2020

Scale As Noted

Sample Location Map

Figure 2

Drawing Title

Drawing No