Soil Vapor Intrusion Work Plan

BCP Site ID No. C224216

432 Rodney Steet

Brooklyn, NY

Prepared for

Segundo New York Corporation
675 Third Avenue., Suite 3008
New York, NY 10017

Submitted to:

New York State Department of Environmental Conservation

Prepared by

Preferred Environmental Services

323 Merrick Avenue

North Merrick, New York 11566

September 2023

Revised December 2023

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CERTIFICATION

I, Victoria D. Whelan, certify that I am currently a Qualified Environmental Professional as defined in 6 New York Codes, Rules and Regulations (NYCRR) Part 375 and that this Soil Vapor Intrusion Work Plan (SVIWP) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation. All work associated with this work plan will be performed by or directly overseen by the QEP certifying the work plan.

Victoria D. Whelan, QEP, NYSPG

1.0 INTRODUCTION

The following Soil Vapor Intrusion Work Plan (SVIWP) was prepared by Preferred Environmental Services (Preferred) on behalf of Segundo New York Corporation, relative to the real property located at 432 Rodney Street, Brooklyn, New York, Brownfield Cleanup Program (BCP) Site # C224216 (herein referred to as the 'Site' or 'Property').

This SVIWP is based upon the guidelines set forth in Section 3 of the New York State Department of Environmental Conservations (NYSDEC) Draft Brownfield Cleanup Program Guide dated May 2004 and NYSDEC's DER-10 Technical Guidance for Site Investigations and Remediations and in accordance with NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006.

The proposed scope of work discussed in this SVIWP will be conducted in accordance with the Site Management Plan (SMP) by Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C dated December 2017.

The Site is currently in the Site Management Phase of the NYSDEC BCP, Brownfield Cleanup Agreement (BCA) Index # C224216-03-30, Site C224216. A revised SMP was submitted to the NYSDEC dated, August 2022 by Langan on behalf of the Volunteer. One of the NYSDEC comments documented in a letter on April 13, 2023 on the revised SMP was:

> **Comment 1, Section 2.5.3, Remaining Soil Vapor Contamination:** In the first paragraph, the text states: *"Based on a comparison of the soil vapor and indoor air analytical results, soil vapor intrusion into the new building did not appear to be occurring. Comparing of the VOC concentrations in the riser pipe (soil vapor) to the NYSDOH matrices indicated 'no further action' is recommended."* This statement was based on the Soil Vapor Intrusion Investigation report dated March 10, 2020, for lots #1 and #31 but the investigation did not include soil vapor within the buildings on Lots 27 and 28. Furthermore, this SMP indicates that the buildings on Lots 27 and 28 are slated to remain in place and undergo redevelopment. Therefore, upon completion of the renovations on lots 27 and 28 and prior to occupation, a soil vapor intrusion evaluation should be completed to determine if soil vapor intrusion mitigation is warranted in these buildings.

Based on the comment above, this SVIWP was developed for the buildings on Lots 27 and 28.

2.0 PHYSICAL SITE CHARACTERISTICS

2.1 Site Description

The site is located at 432 Rodney Street in the Williamsburg neighborhood of Brooklyn, New York and is identified as Block 2374, Lots 1, 27, and 28 on the Brooklyn Borough Tax Map. The 27,160-square-foot (±0.6235 acres) parcel is bound by a vacant lot and residential and commercial buildings followed by Ainslie Street to the north, Hope Street to the south, Keap Street to the east, and Rodney Street to the west. The site is located in an urban setting characterized by residential, commercial, and light industrial buildings. A Topographic Map and a Property Location Map are included as Figures 1 and 2, respectively.

2.2 Site Remedial History

According to the revised SMP, remediation was performed in accordance with the NYSDEC-approved Remedial Action Work Plan (RAWP), dated March 23, 2017, the NYSDEC-approved Interim Remedial Measures Work Plan (IRMWP), dated March 22, 2016, and the NYSDEC-approved IRMWP Addenda #1 and #2, dated January 9, 2017. Under these plans, a Track 2 remedy was implemented on Lot 1, and Lots 27 and 28 following a Track 4 remedy. Site remediation included:

Lot 1

- Removal of two aboveground storage tanks (ASTs) and four underground storage tanks (USTs);
- Excavation of soil to the groundwater table;
- Import of acceptable materials used for backfill and cover;
- Installation of pressurized injection wells and groundwater monitoring wells for post-construction groundwater treatment;
- Direct-injection of base-activated sodium persulfate to pretreat petroleum-related volatile organic compounds (VOCs) in groundwater;
- Injection of PlumeStop® to address residual petroleum-related VOC and chlorinated volatile organic compound (CVOC) impacts to groundwater through the network of pressurized injection wells; and
- Installation of a soil vapor mitigation system.

Lots 27 and 28

- Direct-injection of PlumeStop® to address residual petroleum-related VOC and CVOC impacts to groundwater
- Installation of a soil vapor mitigation system as part of the SMP

Following completion of the NYSDEC-approved remedy, residual contamination was left in place, which is hereafter referred to as "remaining contamination." Institutional Controls (ICs) and Engineering Controls (ECs) were incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. Environmental Easements were filed with NYSDEC on October 27, 2017, and recorded with the Kings County Clerk on November 27, 2017, for Lots 27 and 28, and on November 29, 2017, for Lots 1 and 31 (now Lot 1). The Environmental Easements require compliance with this SMP and all ECs and ICs placed on the site.

The ECs that were incorporated as part of the initial SMP included seven performance monitoring wells to monitor post-injection groundwater quality and a sub-membrane depressurization (SMD) system to mitigate soil vapor intrusion. The NYSDEC approved the discontinuation of groundwater monitoring, the closure of monitoring and injection wells, and ceasing operation of the SMD system in November 2021, after monitoring events demonstrated a 99% reduction in groundwater contaminants of concern and the absence of soil vapor intrusion conditions.

An updated SMP was prepared to manage the remaining contamination in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. The updated SMP was submitted to the NYSDEC and reviewed. A comment letter was prepared by the NYSDEC on April 13, 2023. This SVIWP addresses the first of two comments from the NYSDEC.

> **Comment 1, Section 2.5.3, Remaining Soil Vapor Contamination:** In the first paragraph, the text states: *"Based on a comparison of the soil vapor and indoor air analytical results, soil vapor intrusion into the new building did not appear to be occurring. Comparing of the VOC concentrations in the riser pipe (soil vapor) to the NYSDOH matrices indicated 'no further action' is recommended."* This statement was based on the Soil Vapor Intrusion Investigation report dated March 10, 2020, for lots #1 and #31 but the investigation did not include soil vapor within

the buildings on Lots 27 and 28. Furthermore, this SMP indicates that the buildings on Lots 27 and 28 are slated to remain in place and undergo redevelopment. Therefore, upon completion of the renovations on lots 27 and 28 and prior to occupation, a soil vapor intrusion evaluation should be completed to determine if soil vapor intrusion mitigation is warranted in these buildings.

2.3 Areas of Concern

Based on the comment letter from the NYSDEC, this SVIWP was developed to evaluate the soil vapor intrusion on Lots 27 and 28 prior to occupation to determine if soil vapor intrusion mitigation is warranted.

3.0 SOIL VAPOR INTRUSION INVESTIGATION

3.1 Objectives

The objectives of the evaluation is to:

1. Evaluate the soil vapor at the Site; and,
2. Obtain the necessary information needed to determine if mitigation is warranted in the buildings prior to commercial occupancy.

3.2 Utility Clearance

A mark-out of underground utility lines will be performed prior to the start of fieldwork by calling the New York City One-Call Center. A utility mark-out verification reference number for the Site will be obtained and a record of the utilities will be kept (e.g., Con Ed, Cablevision, etc.).

3.3 Soil Vapor Point Installation and Sampling

This work will be completed during the 2023-2024 winter heating season which is from November 1, 2023, to March 31, 2024. In accordance with the guidance a Product Inventory Survey will be completed prior to sample collection.

Four (4) soil vapor samples will be installed utilizing hand tools and will be set two (2) inches beneath the existing building slabs. The annual space around the stainless-steel screen will be packed with coarse sand creating a sampling zone.

One (1) soil gas sample will be collected from each soil vapor point at least 24-hours after installation in accordance with NYSDOH's "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006. Co-located indoor air samples will be placed at breathing height or 3-5 feet above ground surface next to each sub-slab sample. One outdoor air sample will be collected. One duplicate sample will be collected.

Prior to sampling, one-to-three volumes of soil gas will be purged from the soil vapor point using a calibrated air sampling pump. A bucket will be placed over the sample assembly and helium gas will be used to enrich the atmosphere around the sample location in combination with real-time air monitoring (for helium) to verify that ambient air was not infiltrating the sampling assembly during purging and sampling.

Once confirmed that ambient air is not being drawn into the assembly, the soil vapor will be screened for the presence of VOCs using a photoionization detector (PID). After field screening is completed, the tubing will be connected to the SUMMA canister and a soil vapor sample will be collected. The SUMMA canister regulators for the soil vapor, indoor air and outdoor air samples will be set to restrict the sample collection to not exceed 0.2 liters per minute; flow rate will be consistent across the entire duration of the sampling; over an 8-hour time period. The anticipated future use of the building is commercial and therefore samples will be collected for an 8-hour duration. The canister will be submitted to a NYSDOH-certified laboratory for analysis of VOCs via EPA method TO-15 with a request for low-level reporting limits under chain-of-custody documentation.

During this round of sampling, the following samples will be collected for QA/QC purposes:

- 1 duplicate sample

The samples will be analyzed for Category B deliverables and reviewed by a third party to generate a Data Usability Summary Report, (DUSR).

Sampling activities a sample log sheet will be complete for each sample summarizing the following:

- sample identification;
- date and time of sample collection;
- sampling depth/height;
- identity of samplers;
- sampling methods and devices;
- purge volumes;
- volume of soil vapor extracted;
- if canisters used, the vacuum before and after samples collected;
- apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and
- chain of custody protocols and records used to track samples from sampling point to analysis.

Soil vapor point installation logs will be generated and will be included as an Appendix in the Soil Vapor Intrusion Report. The logs will contain any local condition(s) that occurred during the sampling that may influence interpretation of the results (i.e., weather). The proposed soil vapor sampling locations are depicted on Figure 3.

3.4 Sampling QA/QC Protocol

Field notes including observations of soil conditions, pertinent observations, diagrams (if appropriate) will be maintained, and appropriate photographs will be taken. A record of each sample, including any pertinent observations about the sample will be kept in a field notebook and/or appropriate logs and copies will be included in the Soil Vapor Investigation Report.

4.0 REPORTING

4.1 Investigation Reporting

Following completion of the SVIWP and receipt of analytical data, an SVI Report will be prepared. The report will include:

- A summary of the site history and previous investigations
- A description of site conditions
- Sampling methodology and field observations
- An evaluation of the results and findings
- Conclusions and recommendations for any further assessment (if warranted).

The report will include soil vapor point construction logs, sampling logs, tabulated analytical results, figures, and laboratory data packages. The tabulated analytical results will be organized in table format and include sample location, media sampled, sample depth, field/laboratory identification numbers, analytical results and the applicable Standards, Criteria, and Guidance (SCGs) pertaining to the site and contaminants of concern for comparison. The report will include scaled figures showing the locations of sub-slab vapor points and sample concentrations above SCGs.

5.0 SCHEDULE

The following Schedule is provided for this work:

Event	Schedule
Remedial Investigation Work Plan	October-December 2023
Investigation Field Work	January 2023
Soil Vapor Intrusion Report	March 2023

Figures

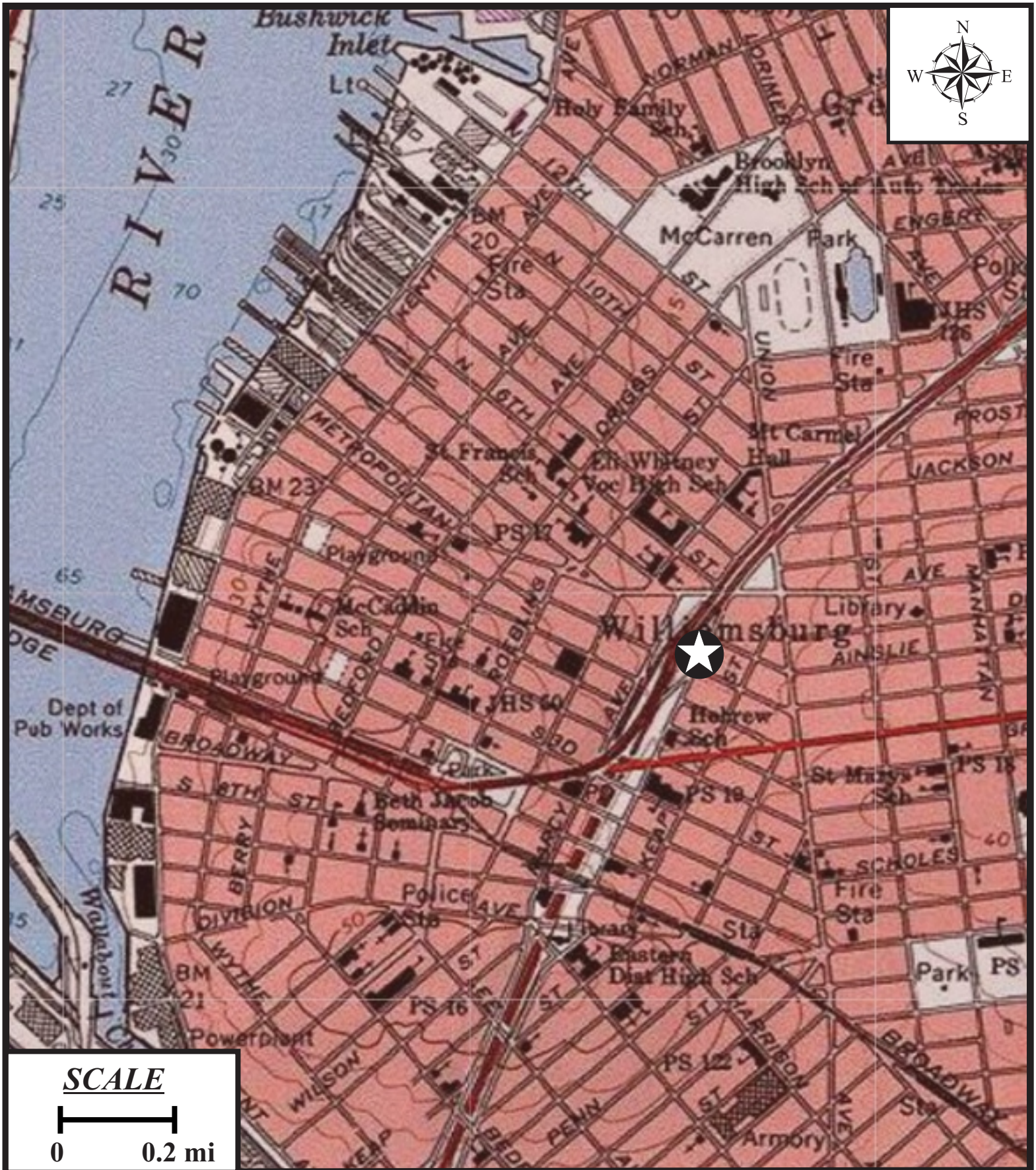

Figure 1 - Topographic Map

PREFERRED ENVIRONMENTAL SERVICES

323 Merrick Avenue - North Merrick, New York 11566

Tel: (516) 546-1100 Fax : (516) 213-8156

-Approximate Location of Subject Property

Source: United States Geologic Survey Jamaica Quadrangle

Site: 432 Rodney Street Brooklyn, NY

Date: September 2023

Figure 2 - Site Location Map

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-Approximate Property Line

Source: Google Maps

Site: 432 Rodney Street Brooklyn, NY

Date: September 2023

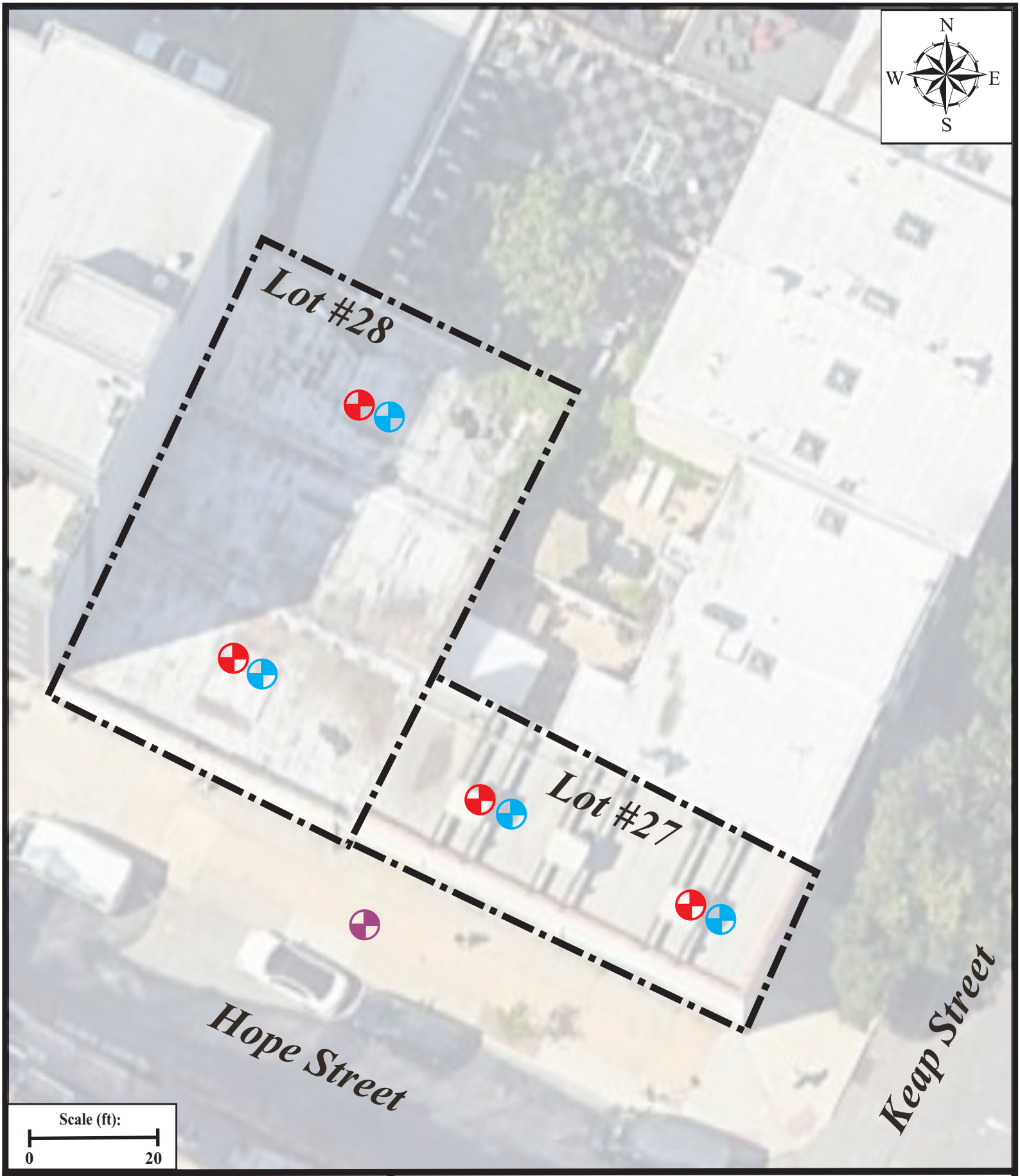

Figure 3 - Site Features and Sample Locations

- Proposed Sub-Slab Vapor Sample
- Proposed Indoor Air Sample
- Proposed Outdoor Air Sample

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