May 19, 2026

Haala Al-Hadithy
NYSDEC Region 2 Division of Environmental Remediation
47-40 21st Street
Long Island City, New York 11101

Re: Soil Vapor Extraction Pilot Test Work Plan
172 Montrose Avenue
Brooklyn, New York
BCP Site No. C224417
Langan Project No.: 170824801

Dear Haala Al-Hadithy:

This Soil Vapor Extraction (SVE) Pilot Test Work Plan was prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) on behalf of Montrose Meserole Owner LLC and Montrose Meserole Borrower LLC (the Participants) for the property located at 172 Montrose Avenue in the East Williamsburg neighborhood of Brooklyn, New York (the site). A site location map is provided as Figure 1. The site is a part of the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), Site No. C224417. Langan prepared this SVE Pilot Test Work Plan to evaluate the remedial feasibility and support the design development process of a full-scale SVE system at the site (should it be required), pursuant to email correspondence from the NYSDEC dated April 8, 2026.

SITE BACKGROUND

The approximately 0.39-acre site consists of a vacant one-story former bus depot garage and warehouse with temporary office space in the eastern part of the site. The Participant plans to remediate the site in conjunction with a new affordable housing development under the BCP pursuant to the Brownfield Cleanup Agreement (BCA), Index No. C224417-05-25, for Site No. C224417, with the NYSDEC, executed on June 9, 2025 and amended on March 19, 2026. A Draft Remedial Action Work Plan (RAWP) and Final Remedial Investigation Report (RIR) were submitted to NYSDEC on March 6, and April 2, 2026, respectively.

The RIR and Draft RAWP identified two locations beneath the existing building slab where NYSDEC may require future SVE remediation based on post-excavation soil and soil vapor sampling results. Petroleum-related impacts were identified in soil and groundwater within the northeastern part of the site which will likely be remediated through source removal and in-situ groundwater treatment. Trichloroethylene (TCE) was detected in one sub-slab soil vapor sample (RISV12) collected in the southeastern part of the site during the RI at a concentration resulting in a "mitigation" recommendation per Matrix A (Revised 2017, 2024) in the 2006 New York State

Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

As proposed in the March 2026 Draft RAWP, a contingent SVE system may be implemented, if warranted, based on field conditions and post-excavation soil and soil vapor sampling results at the site. If excavation achieves complete removal of vadose zone impacts and/or the soil vapor samples collected in the relevant areas following source removal and in-situ groundwater treatment do not indicate the need for active mitigation, the SVE system will not be designed or installed. In the event that sampling in either of the areas shows a contingent SVE system is needed, the results of the SVE pilot test described in this work plan will help determine the feasibility and effectiveness of SVE technology for treatment of contaminants remaining in on-site soil following remediation per the March 2026 Draft RAWP.

SVE PILOT TESTING

An SVE pilot test will be performed to determine the feasibility of using SVE technology and inform the design parameters for the potential future SVE system. To evaluate the site-specific SVE radius of influence (ROI), Langan will collect data to estimate the air intrinsic permeability of the treatment zone soils, subsurface airflow rate and pressure/vacuum relationships, and volatile organic compounds (VOC) mass removal and remedial performance. This information will then be used to develop a full-scale remedial system design, if required.

The pilot test area is presented on Figure 2, and the proposed scope of work is as follows:

Pilot Test Preparation and Coordination

Air monitoring will be implemented during ground-intrusive activities in accordance with the site-specific Community Air Monitoring Plan (CAMP) included as Appendix D of the March 2026 Draft RAWP. The CAMP will include one upwind and one downwind air monitoring station.

Langan and its subcontractor will conduct a site walkthrough to identify locations for the SVE pilot test extraction and monitoring points. The extraction and monitoring points will be located at five discrete locations within a representative area in the northeastern part of the site. The location of the points will be carefully considered to provide representative data to support potential full-scale system design. The walkthrough will also include a visual assessment of potential constraints (e.g., sub-slab utilities, drainpipes, etc.) that will be considered during the testing, as well as penetrations, openings, and/or cracks in the building slab that will need to be sealed prior to testing (to prevent short-circuiting and seal preferential pathways).

Prior to any ground intrusive activities, a geophysical survey will be conducted to identify subsurface anomalies consistent with utilities and/or structures throughout the existing building. The geophysical survey will be completed across the building footprint (pending access restrictions), focusing on the proposed areas of testing, using a range of geophysical instruments, including electromagnetic and utility line locator instruments, and ground-penetrating radar (GPR). Extraction and monitoring points will be relocated as needed, based on the results of the survey.

SVE Well and Vacuum Monitoring Probe Installation

The test well network will target unsaturated soil and will include one SVE test well and four vacuum monitoring probes, as described below. The proposed test well network is presented on Figure 2.

SVE Well

One 4-inch-diameter, schedule 40 polyvinyl chloride (SCH40 PVC) SVE well (SVE-01) will be installed and screened from approximately 20 to 25 feet below ground surface (bgs) with 5 feet of 20-slot screen. Well construction details may be altered in the field based on subsurface conditions and drilling observations. SVE-01 will be located in the northeastern part of the site, based on the locations of impacts identified during the RI.

Vacuum Monitoring Probes

Four 2-inch-diameter vacuum monitoring probes (VP-01 through VP-04) will be constructed of SCH40 PVC and screened between approximately 15 and 25 feet bgs with 20-slot screen. Probe construction details may be altered in the field based on subsurface conditions and drilling observations. VP-01 through VP-04 will be located at varying directions and distances (between approximately 5 and 20 feet) from SVE-01. Each vacuum monitoring probe will be equipped with one sample port for VOC and vacuum measurements.

Typical SVE well construction details are provided in Figure 3.

Equipment Procurement and Field Mobilization

Prior to the start of pilot testing, all necessary field equipment will be mobilized and set up at the site. The testing equipment will include a SVE skid containing the following equipment:

- A regenerative blower capable of providing approximately 100 standard cubic feet per minute (scfm) airflow rate at 30 inches of water (IWC) inlet vacuum and a water knock-out tank
- Vapor treatment equipment consisting of one 200-pound activated carbon adsorption unit
- Vapor extraction manifold piping, wellhead controls, and associated valves, fittings, instrumentation, and controls

The testing skid will be powered via the existing electrical supply, or if needed, a tow-behind 120-kilowatt (kW) diesel generator.

SVE and Point Permeability Testing

SVE testing will be performed at SVE-01 to determine air intrinsic permeability and vapor capture ROI within the vadose zone and establish conceptual SVE design parameters. We plan to test at least three extraction airflow rates ranging from about 10 scfm to 100 scfm via a dilution valve. The actual airflow extraction rates (low, mid, and high) will be determined in the field. Each airflow rate test will begin by applying vacuum at the wellhead and then measuring the corresponding

airflow rate. Airflow rate tests will last until vacuum measurements at the nearby vapor probes stabilize, or up to one hour. The following parameters will be monitored during the testing:

- Vacuum and airflow rates at the blower inlet and at the SVE test wellhead (SVE-01)
- Vacuum at nearby vapor monitoring probes (VP-01 through VP-04)
- Soil vapor VOC concentrations at the blower inlet, vapor monitoring probes, and the vapor discharge (after the carbon adsorption unit) using a field-calibrated photoionization detector (PID) equipped with a 10.6-electron volt (eV) lamp or equivalent

The tests will be performed at increasing flow rates at SVE-01 – the lowest air extraction flow rate and vacuum condition will be tested and then increased systematically until the maximum air extraction flow rate and vacuum condition is achieved at SVE-01. It is expected that an increase in the air extraction flow rate and vacuum at the test well will generally result in an increase in induced vacuum at each monitoring point. An SVE Pilot Test Process and Instrumentation Diagram showing the extraction manifold piping is provided as Figure 4.

Data Evaluation and Pneumatic Modeling

Langan will analyze the pilot test data and perform pneumatic airflow modeling using a two-dimensional (2D) computational pneumatic modeling tool (MDFIT™), utilizing the pilot test results as site-specific model input parameters. MDFIT™ will be completed to evaluate the data and calibrate the air intrinsic permeability of treatment zone soils based on the air extraction vacuum-flow relationships observed during pilot testing. The model will be used to scale the results from the pilot-scale testing to full-scale design, if warranted.

Based on the calibrated air intrinsic permeability values, a range of potential extraction airflow rates (and corresponding vacuum propagation) and remedial ROIs will be derived for the SVE well. If full-scale SVE design is warranted based on post-remedial conditions, the modeling computation results will be used to determine the full-scale SVE design parameters (e.g., number/location of SVE wells, effective ROI, design airflow rates, design vacuum, design pore air volume exchanges, vacuum propagation, and equipment sizing), and predict the full-scale system performance (i.e., VOC mass removal rates and cleanup timeframe). Based on the results of the pilot testing, data assessment, and pneumatic modeling, a conceptual design for the full-scale SVE system will be developed, if warranted.

Reporting

In the event that the contingent SVE system is determined necessary at the site, a full-scale SVE system design memorandum will be prepared for the NYSDEC. The memorandum will summarize the communication testing and subsequent modeling, as well as the resultant conceptual design including outputs resulting from the communication testing and subsequent 2D computational pneumatic modeling.

CLOSING

We respectfully request approval of this SVE Pilot Test Work Plan. Please call 212.479.5486 if you have any questions and if necessary, for further discussion.

Sincerely,
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

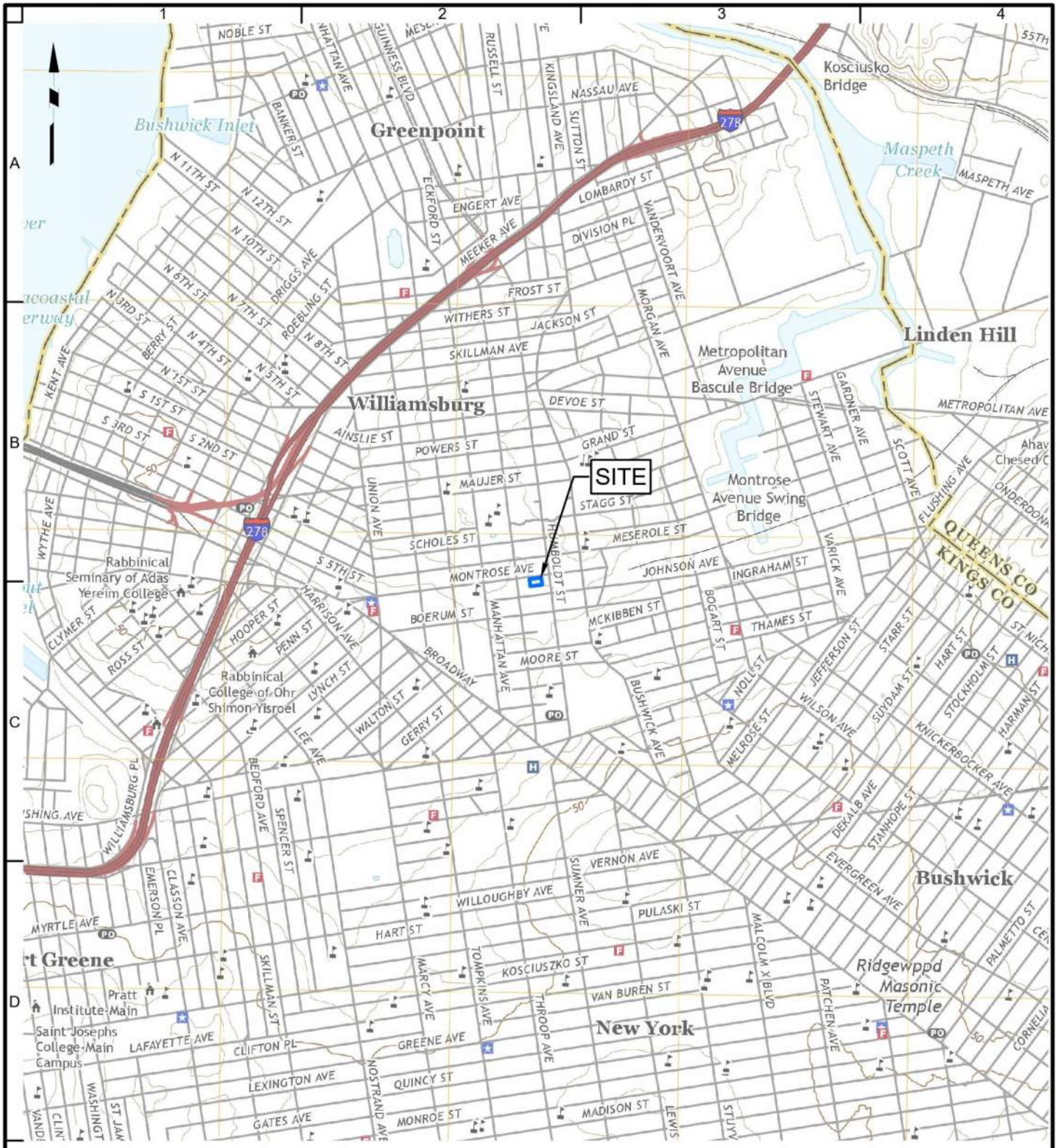
Kimberly Semon, PE
Senior Project Manager

Gerry Nicholls, PE
Principal

Enclosure(s): Figure 1 – Site Location Map
Figure 2 – Proposed SVE Pilot Test Area Well Network
Figure 3 – Proposed Typical SVE Well Construction Details
Figure 4 – SVE Pilot Test Process and Instrumentation Diagram

cc: W. Zheng, A. Obligado (NYSDEC)
D. Schwartz, J. Valladares, C. Lee (Slate)
B. Gochenaur, K. Semon, S. Fernholz, C. Devin (Langan)

FIGURES



Legend

Approximate Site Boundary

2,000 0 2,000

SCALE IN FEET

Notes:

1. Basemap adapted from United States Geological Survey (USGS) 7.5-Minute Series Topographical Maps, Brooklyn, New York, Quadrangle.

LANGAN

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Langan International LLC

Collectively known as Langan

Project

172 MONTROSE AVENUE

BLOCK No. 3062, LOT No. 12

BROOKLYN NEW YORK

Figure Title

SITE LOCATION MAP

Project No. 170824801	Figure No. 1
Date 7/22/2024	
Scale 1"=2,000'	
Drawn By MG	
Submission Date	

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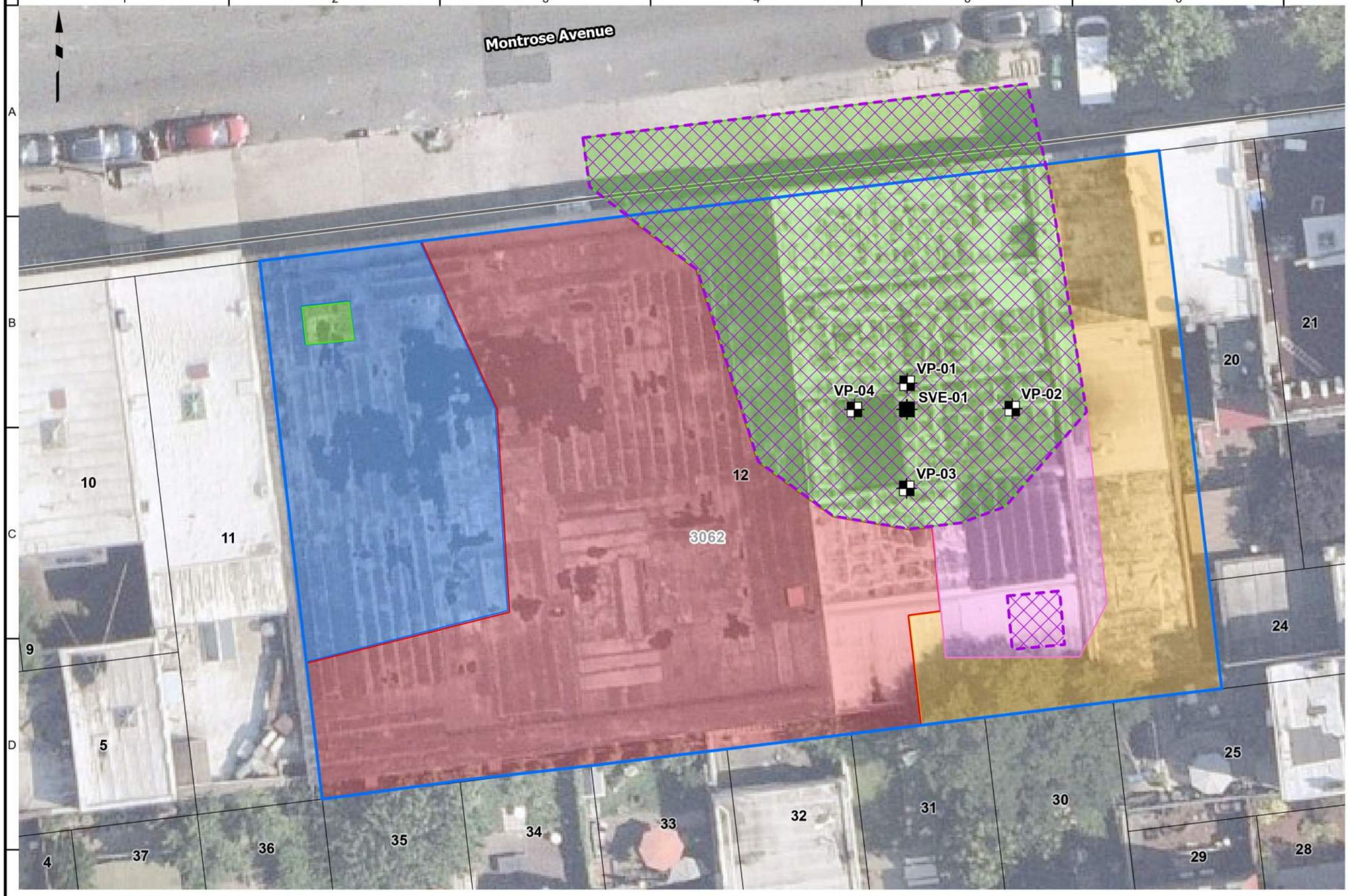

Legend

- Proposed Vacuum Monitoring Probe Location
- Proposed Soil Vapor Extraction Well Location
- Approximate Site Boundary
- Tax Block
- Tax Parcel
- Excavation to about 2 feet bgs
- Excavation to about 4 feet bgs
- Excavation to about 10 feet bgs
- Excavation to about 12 feet bgs
- Excavation to about 15 to 17 feet bgs
- Approximate Soil Vapor Extraction Treatment Extents

Notes:
1. Aerial imagery provided through Langan's subscription to Near Map, dated 07/03/2025.
2. bgs - below grade surface
3. SVE - Soil Vapor Extraction
4. SVE System design and extents will be determined and provided under separate cover.

20 0 20
SCALE IN FEET

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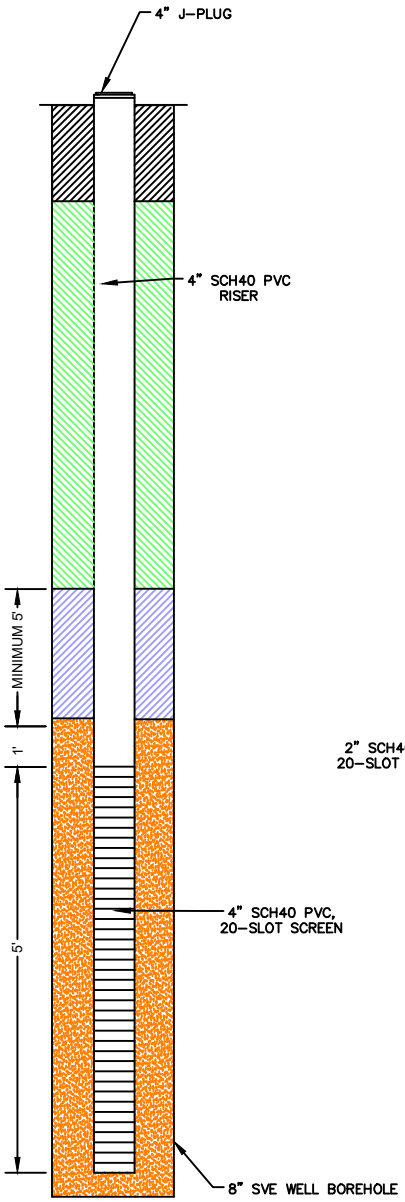
Project
172 MONTROSE AVENUE
BLOCK No. 3062, LOT No. 12
BROOKLYN NEW YORK

Figure Title
PROPOSED SVE PILOT TEST AREA WELL NETWORK

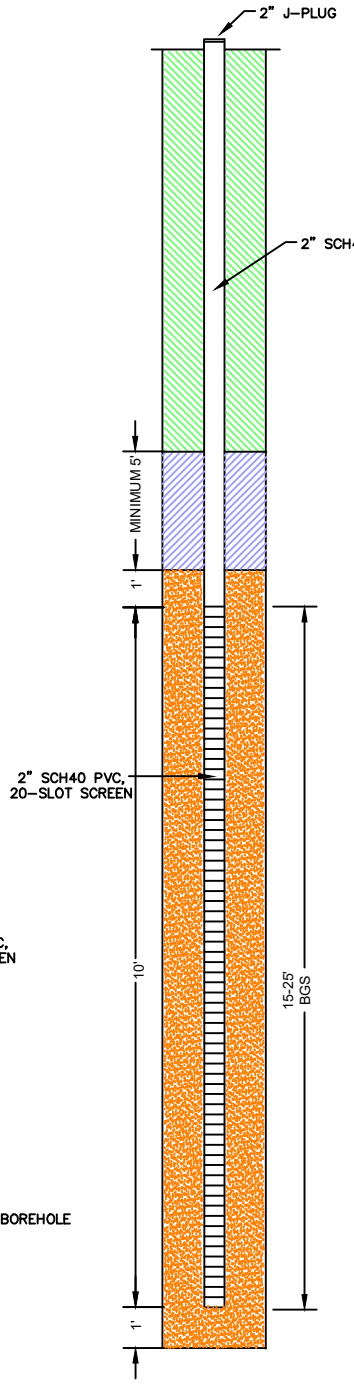
Project No.	Figure No.
170824801	2
Date: 4/17/2026	
Scale: 1"=20'	
Drawn By: MG	

Path: \\Langan.com\data\NYC\data8\170824801\Project Data\ArcGIS\APRX\170824801 - RIWP\170824801 - RIWP.aprx Date: 4/17/2026 User: mgeorgalas Time: 3:56 PM

TYPICAL SVE WELL



PILOT TEST WELLS VP-01 THROUGH VP-04



LEGEND:

- GROUT / BENTONITE SEAL MIXTURE
- HYDRATED BENTONITE SEAL
- GROUT
- NO. 2 SAND PACK
- CONCRETE SLAB
- 20-SLOT SCREEN

NOTES:
PVC - POLYVINYL CHLORIDE
SCH - SCHEDULE
SVE - SOIL VAPOR EXTRACTION

1. DRAWING IS NOT TO SCALE.
2. THE SCREEN INTERVALS AND WELL DEPTHS ARE SUBJECT TO CHANGE BASED ON THE STRATIGRAPHY AND POTENTIAL VADOSE ZONE SOIL IMPACTS OBSERVED IN THE FIELD DURING DRILLING.
3. ALL ELEVATIONS PRESENTED HEREIN ARE RELATIVE TO DATUM REFERENCE (NAVD88).
4. PENDING CONFIRMATION WITH THE PROJECT ARCHITECT, ALL WELLS WILL BE COMPLETED WITH FLUSH-MOUNT, TRAFFIC-RATED, WATER TIGHT, 8-INCH DIAMETER WELL VAULTS SET IN CONCRETE AND THE WELL RISER PIPES WILL BE FINISHED WITH A FEMALE THREADED COUPLING AND A CAP.
5. A TWO-FOOT LONG SCH40 PVC SUMP WILL BE PROVIDED AT THE BOTTOM OF ALL SCREENS.
6. SVE WELLS WILL BE CONSTRUCTED IN AT LEAST 8-INCH DIAMETER BOREHOLES.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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Project
172 MONTROSE AVENUE
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Figure
PROPOSED TYPICAL SVE WELL CONSTRUCTION DETAILS

Project No. 170824801	Figure No. 3
Date 4/15/2026	
Drawn By CD	
Checked By MA	

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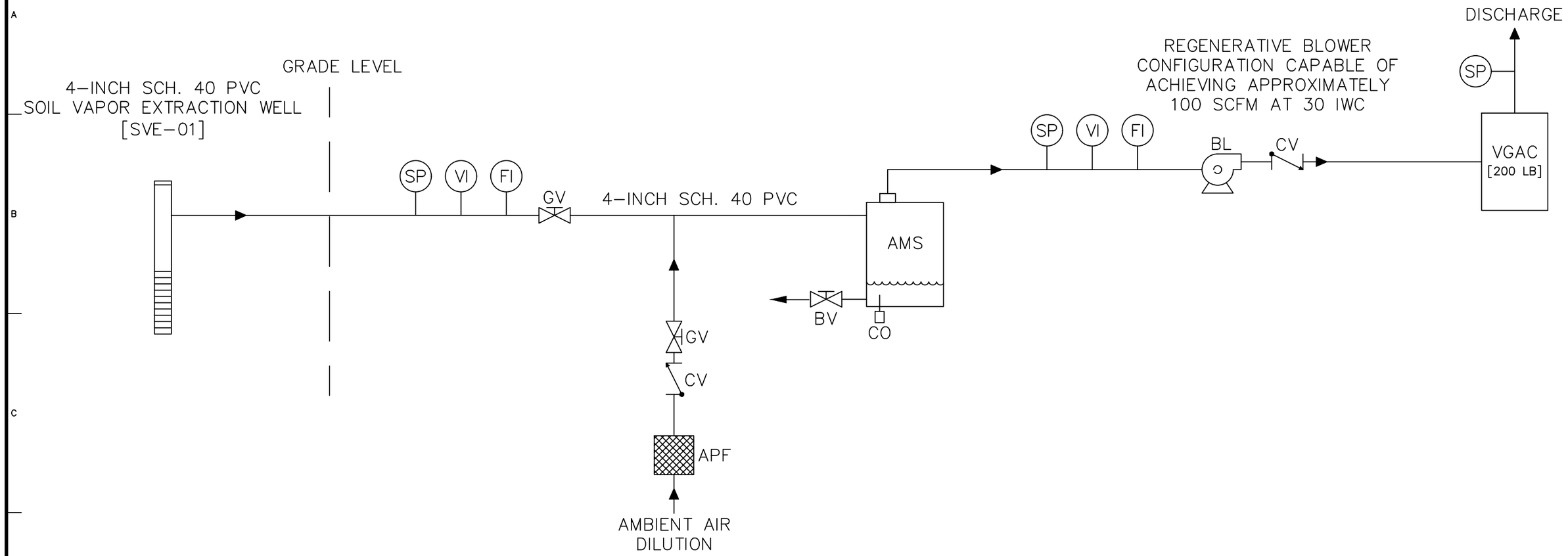

SYMBOL KEY:

- CHECK VALVE
- GATE VALVE / BALL VALVE
- BLOWER

AMS	AIR MOISTURE SEPARATOR
BL	BLOWER
CV	CHECK VALVE
FI	FLOW INDICATOR
GV	GATE VALVE
SP	SAMPLE PORT
SVE	SOIL VAPOR EXTRACTION
VGAC	VAPOR GRANULAR ACTIVATED CARBON
VI	VACUUM INDICATOR

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Project
172 MONTROSE AVENUE
BLOCK No. 3082 LOT No. 12
BROOKLYN NEW YORK

Drawing Title
SVE PILOT TEST PROCESS AND INSTRUMENTATION DIAGRAM

Project No. 170824801
Date 5/13/2026
Drawn By AB
Checked By KS

Drawing No. 4

Filename: \\langan.com\data\NY\data8\170824801\Project Data\CAD\01\2D-DesignFiles\Environmental\SVE Pilot Test\SVE Pilot Test P&ID.dwg Date: 5/13/2026 Time: 14:39 User: aboodram Style Table: Langan.stb Layout: ANSIB-BL