February 25, 2019

Ronnie E. Lee, P.E
Environmental Engineer 2,
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7016

Re: Sub-Slab Depressurization System Shut Down Sampling
Site No. C241103 Former Uniforms for Industry Site
129-09 Jamaica Avenue, Queens, NY
Request for SSD System Termination

Dear Mr. Lee:

The following sampling plan is being submitted, as requested, as the final step in obtaining the Department's approval to permanently shut down the active subslab depressurization system (SSDS) at the Site.

The Site is located at 127-03 and 129-11 Jamaica Avenue in the County of Queens, New York, **(Figure 1)** and is identified as Block 9821 and lots 44 and 46 on the Queens Borough Tax Map. The Site is situated on an approximately 73,038 square foot (1.68-acre), area bounded by a residential lot to the north, Jamaica Avenue to the south, the Long Island Rail Road - Ronkonkoma Line to the east, and residential properties and 12th Street to the west. The Site is now developed with two, 6-story, 65-unit buildings set aside for seniors, with 20 percent of the units set aside for formerly homeless households (**Figure 2**).

Summary of Previous Testing

The remedial investigation report conducted by The ELM Group in 2009 included the installation of 12 soil vapor probe locations (**Figure 3**). CVOCs were detected in all 4 sub-slab and in all 8 soil gas samples performed during the RI. PVOCs were not detected in any of the samples. CVOC concentrations ranged from 115.9 in the southwest corner of the property to a high of 5,290,000 in the vicinity of the former central area USTs. Elevated CVOC concentrations were also reported in the vicinity of the drainage structures in the eastern parking area, beneath the building slab in the southeastern corner of the building, and in the northern corner of the site.

The report concluded that the highest concentrations of petroleum and chlorinated VOCs were in the former primary release area (former tank farm area). In addition, high concentrations were detected near the main sewer line on the eastern side of the property, near a former dry well. The drywell may have served as a release point for chemicals into the surface. Other elevated soil vapor concentrations were encountered in the northern corner of the property and in the southern portion of the previous building, which appear to mainly be the artifices of

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former non-point source releases and site operations over the extended operating history of the facility.

In December 2010, UFI performed an off-Site investigation to assess the potential migration and vapor intrusion of chlorinated compounds at residential homes which bordered the Site to the west. This investigation was completed in two Phases: Phase I which included soil vapor sampling along sidewalks within the residential area west of the Site and along the south side of Jamaica Avenue; and Phase II which included on Site soil vapor sampling along the western property line. The scope of the Phase II investigation originally included sampling within the residences. However, since access to the homes could not be obtained following repeated attempts, sampling was instead performed at the property line.

The results of the Phase I and Phase II sampling, as summarized in the Soil Vapor Investigation Report prepared by Integral Consulting, Inc. (12/6/12), found TCE levels above NYS Department of Health guidelines in one of the on-Site property line samples. There were no other chlorinated compounds reported above guidance levels in any of the remaining samples. Integral concluded that the concentrations and distribution of compounds reported in the on-Site samples did not indicate a potential for an off-Site vapor condition that would result in a completed pathway and that no further investigation was warranted. The NYSDEC accepted this report by letter dated December 20, 2012.

Remedial Activity

Remedial activity at the Site included the following:

1. Excavation and disposal of the upper 15 to 20 ft of soil exceeding Restricted Residential SCOs in three identified CVOC hot-spot areas, as well as historic fill materials above Restricted Residential SCOs within the top 2 feet of soil;
2. Investigation and removal of drainage structures, surface drains and related piping and proper closure in accordance with the USEPA UIC regulations;
3. The injection of a chemical oxidant solution through PVC injection points installed into the water table to remediate the contaminated groundwater beneath the Site, as well as post-remediation groundwater monitoring for a minimum of two years; and
4. Installation of a vapor barrier and SSD system beneath all basement areas which will not be required to have continuous mechanical ventilation.

A high-density polyethylene vapor barrier linear (HPDE) was installed beneath both buildings prior to pouring the concrete slab. The vapor barrier consists of a 20 mil HDPE geomembrane liner manufactured by GSE Lining Technologies of North America. The vapor barrier extends throughout the area occupied by the footprint of each of the new buildings. In addition, a minimum of 15 mil liquid membrane consisting of Procor 75 as supplied by Grace Waterproofing Products was installed on all vertical foundation walls except for the foundation wall along Jamaica Avenue in which a 14 mil HDPE membrane was installed.

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An SSD system was not installed beneath the Phase II building since the basement level of this building is used as a parking garage and is actively ventilated to remove vehicle fumes in accordance with NYC Mechanical Code. The SSD system beneath the Phase I basement level consists of three separate venting zones (**Figure 4**). Each zone provides coverage of between 3,600 to 4,000 sf of slab area. The horizontal vent line is constructed of a continuous loop of perforated 4-inch HDPE pipe. In each zone the horizontal pipe extends to an adjacent utility chase-way where it is piped individually to the roof via a 6-inch schedule 40 PVC line. Vacuum is applied to each of the subsurface rings by utilizing Radonaway RP265 ventilation fans installed on the roof of the Phase I building to discharge subsurface soil vapors into the exterior.

Proposed Final Confirmatory Sampling Event

The final confirmatory sampling event will include following:

- Shut down of the SSD systems at least two weeks prior to the sampling event.
- Collect a total of 3 sub-slab vapor samples. One sub-slab vapor sample will be collected from each SSD loop.
- Collect indoor ambient air samples from within the breathing zone at the same locations as each of the sub-slab sampling locations; and,
- Collect one ambient outdoor air sample.

See **Figure 5** for the location of sub-slab, indoor air and outdoor air sampling locations.

All air samples will be collected with 6-liter Summa canisters equipped with 24-hour flow controllers. Air and sub-slab samples will be collected in accordance with NYSDOH protocols as presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

Indoor air samples will be collected in the breathing zone at a height of 3-4 feet above the floor, at each of the three corresponding sub-slab vapor sampling locations. Sub-slab samples will be sampled concurrently with indoor and outdoor ambient air samples. Sub-slab samples will be collected by drilling a ½ inch hole with a handheld drill through the building slab, and then inserting a ¼ inch polyethylene tube to no more than 2 inches below the base of the slab. The tubing will be sealed at the surface with hydrated granular bentonite and a 4" x 4" (approx.) plastic sheet.

Prior to sample collection, the sub-slab sampling points will be purged of three sampler volumes using a handheld vacuum pump. The integrity of the seal will be tested using helium as a tracer gas. Seal testing will be completed by placing a plastic 5-gallon pail over the sampling point and running the sampling tube through a small opening in the pail to the exterior. Helium gas will then be introduced through a second small opening in the pail to saturate the atmosphere around the sample port with helium gas. The integrity of the surface seal will be confirmed prior to collecting the sample by connecting a portable helium detector to the sample tube for a period of 5 minutes. If helium is detected in high concentrations

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(>10%) then the seal is inadequate and will be resealed and tested again until acceptable levels of helium are achieved.

Prior to beginning sample collection, the canister identification number, flow regulator identification number and sample ID will be recorded on the sample tag attached to each canister. Sampling will then be initiated by fully opening the flow control valve on each canister in turn. Immediately after opening the flow control valve on a canister, the initial vacuum (inches of mercury) will be recorded on the sample tag and in a bound field notebook. When the vacuum level in the canister is between 5 and 8 inches of mercury (approx. 24 hours), the flow controller valve will be closed, and the final vacuum recorded on the sample tag.

Each of the summa-canisters will be submitted to Phoenix Environmental Laboratories of Manchester Connecticut (NYSDOH Lab I.D. No. 11301) for laboratory analysis of VOCs by EPA method TO15. Upon receipt of the results a summary report will be prepared and submitted to DEC and DOH.

The sampling will be performed during the 2018-2019 Heating Season.

Please contact me if you have any questions or require any additional information regarding this final sampling plan.

Very truly yours,
Environmental Business Consultants

Kevin Waters
Project Manager

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FIGURES

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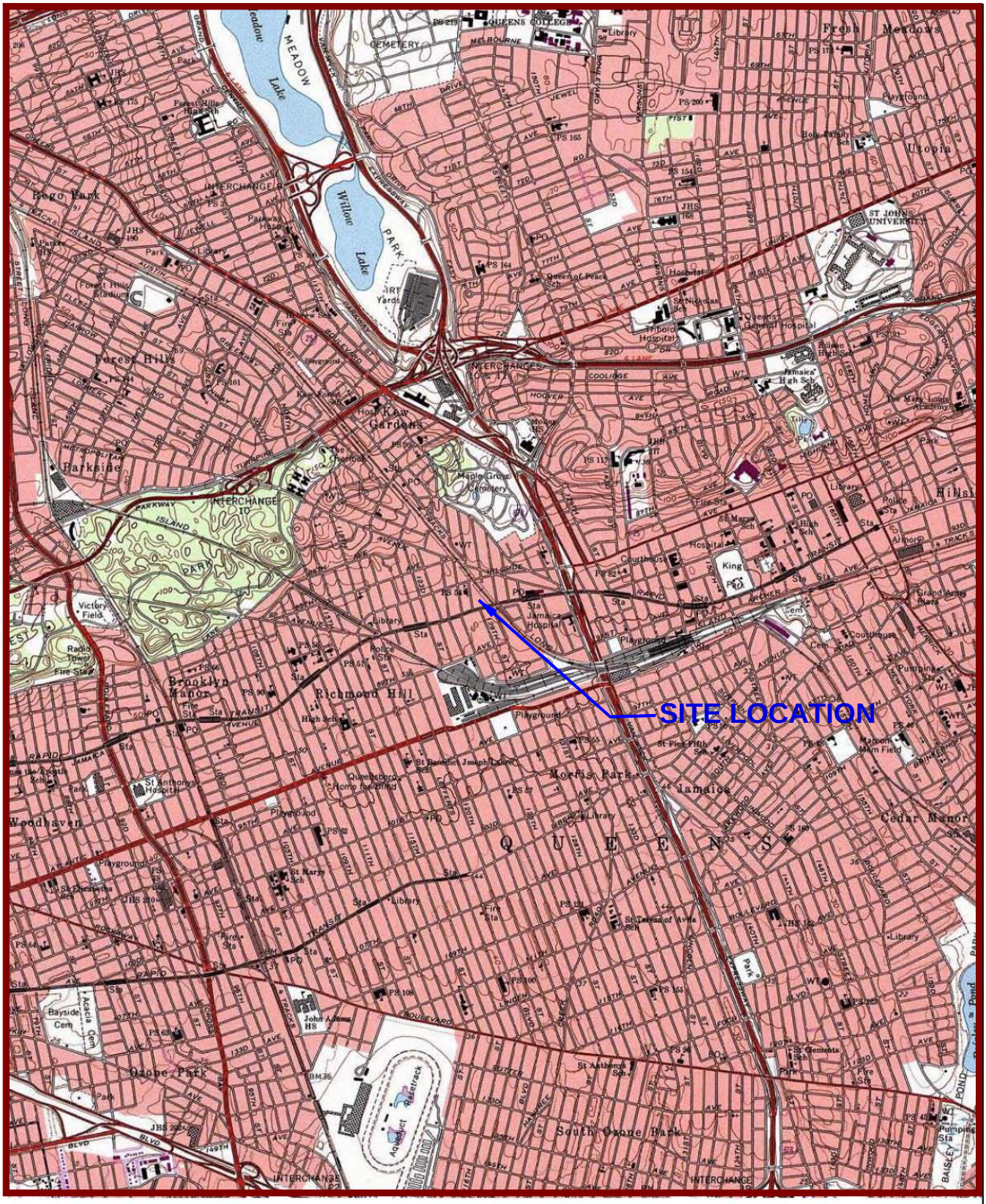

USGS Jamaica Quadrangle 1994, Contour Interval = 10 feet

0 .5 1 MILES

1000 0 1000 2000 3000 4000 5000 FEET

1 .5 0 KILOMETERS 1

1000 0 1000 METERS

MN 13° 10/19/10

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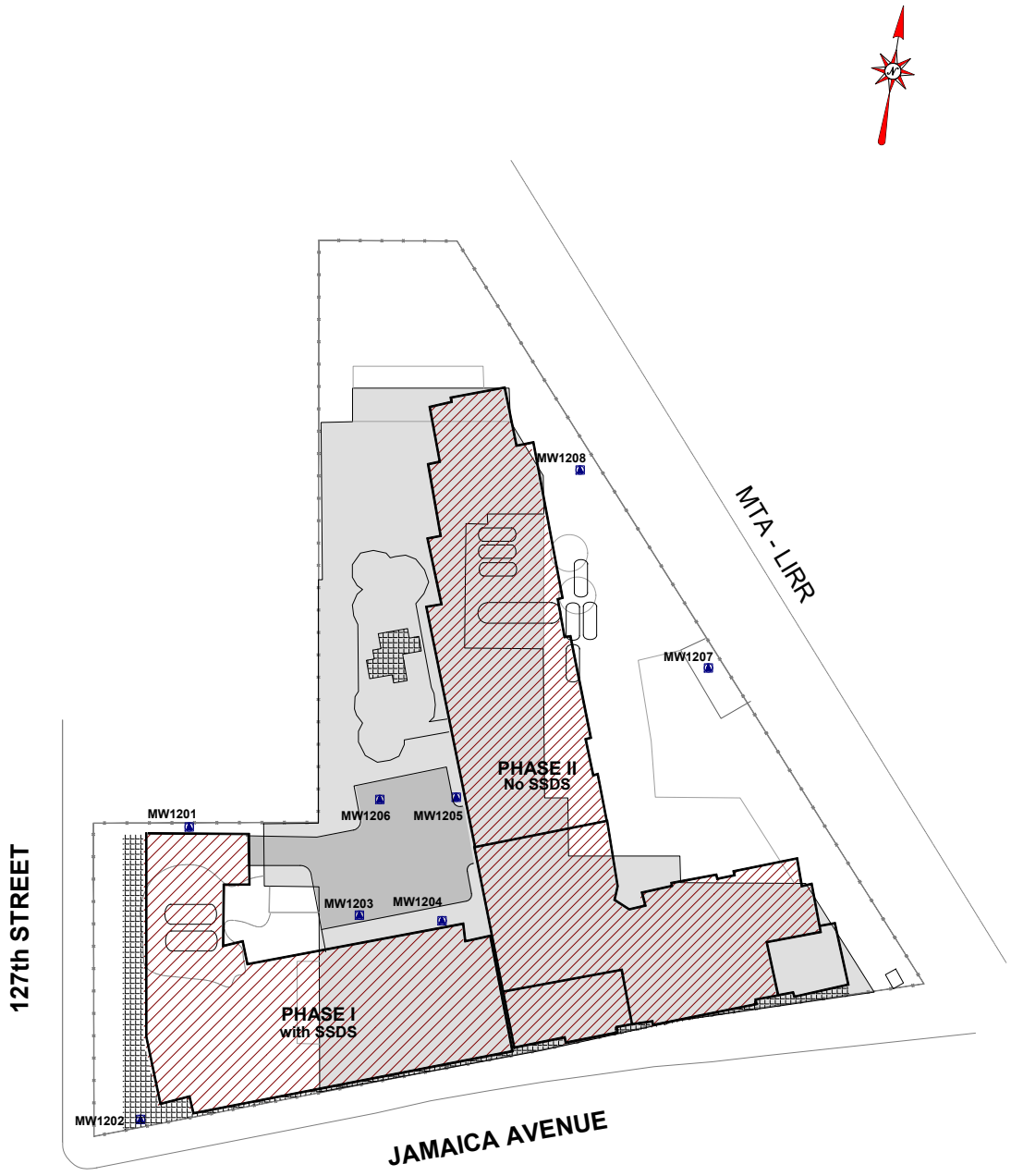
FORMER UNIFORMS FOR INDUSTRY SITE

129-09 JAMAICA AVENUE, RICHMOND HILL, NY

FIGURE 1 SITE LOCATION MAP



KEY:

MW12xx Monitoring Well Locations

0 25 50 100

1 Inch = 50 feet

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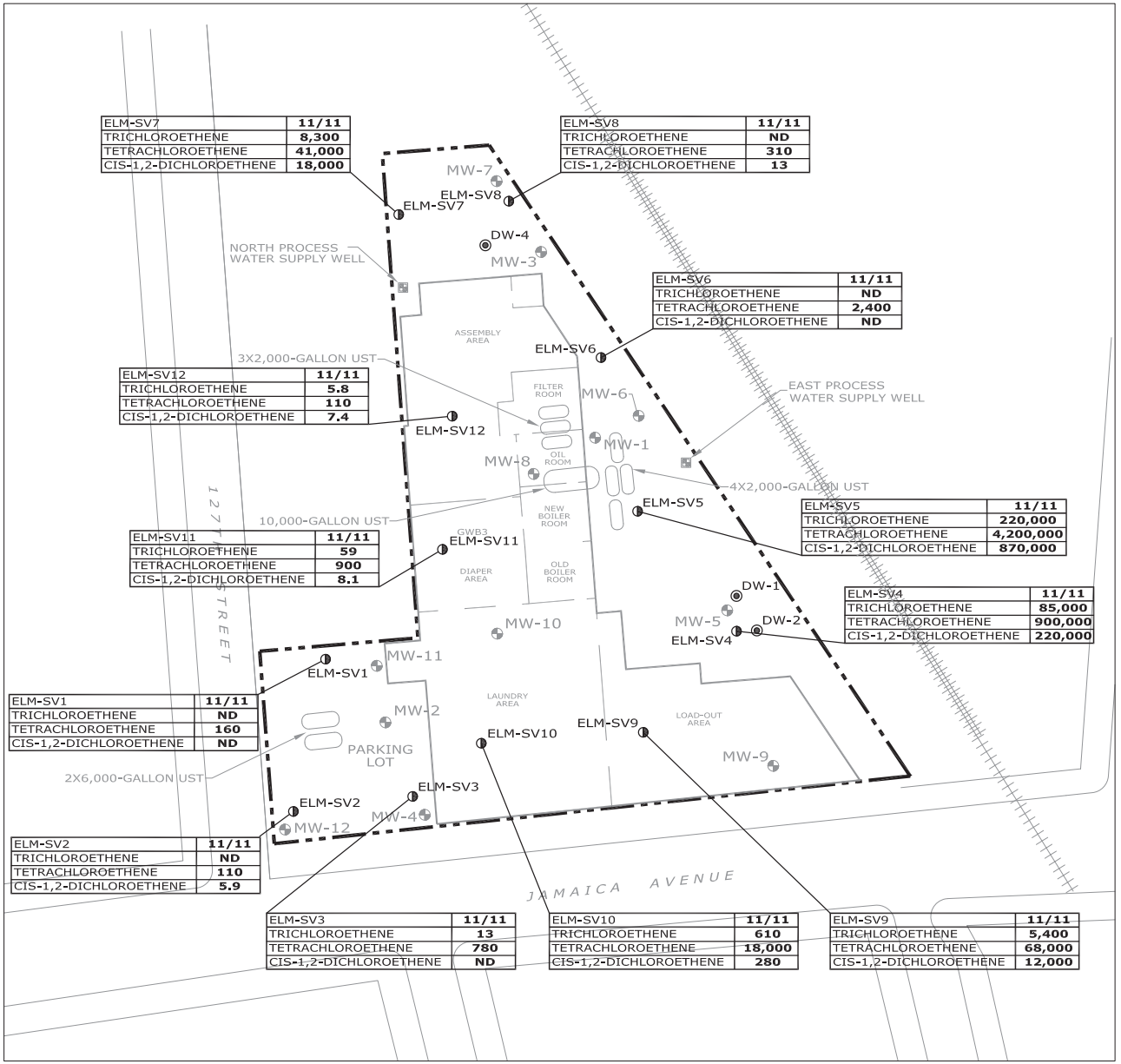
Figure No. 2

Site Name: Former Uniforms For Industry Site

Site Address: 129-09 Jamaica Avenue, Richmond Hill, NY

Drawing Title: Site Plan



LEGEND

- PROPERTY LINE (APPROX.)
- RAILROAD
- PROCESS WATER SUPPLY WELL LOCATION
- MW-1 EXISTING MONITORING WELL LOCATION AND ID
- OSW-1 EXISTING OFF-SITE MONITORING WELL LOCATION AND ID
- ELM-SV1 SOIL VAPOR PROBE LOCATION AND ID
- DW-2 FORMER DRYWELL LOCATION AND ID

ELM-SV6	11/11	SOIL VAPOR SAMPLE ID AND SAMPLE DATE
TRICHLOROETHENE	ND	TRICHLOROETHENE RESULTS IN ug/m3
TETRACHLOROETHENE	2,400	TETRACHLOROETHENE RESULTS IN ug/m3
CIS-1,2-DICHLOROETHENE	ND	CIS-1,2-DICHLOROETHENE RESULTS IN ug/m3

ND NOT DETECTED

SOURCE:

1) VERTEX ENGINEERING SERVICES, INC., SOIL BORING AND PROCESS WATER WELL LOCATION PLAN, 8/22/03, PROJECT NO. 5062.00.

0 60 120

SCALE: 1:60

TITLE:

FIGURE 3

SOIL VAPOR SAMPLING RESULTS CVOCs (ug/m3)

LOCATION:

129-09 JAMAICA AVENUE,
RICHMOND HILL, NEW YORK

DATE: 05/21/09

FILENAME: 207078_DATA_NY_V2.dwg

LAYOUT: SOIL_VAPOR_V2

ENVIRONMENTAL LIABILITY MANAGEMENT, LLC
267 BROADWAY | FIFTH FLOOR | NEW YORK, NY 10007
WWW.EXPLOREELM.COM
NEW JERSEY - PENNSYLVANIA - NEW YORK

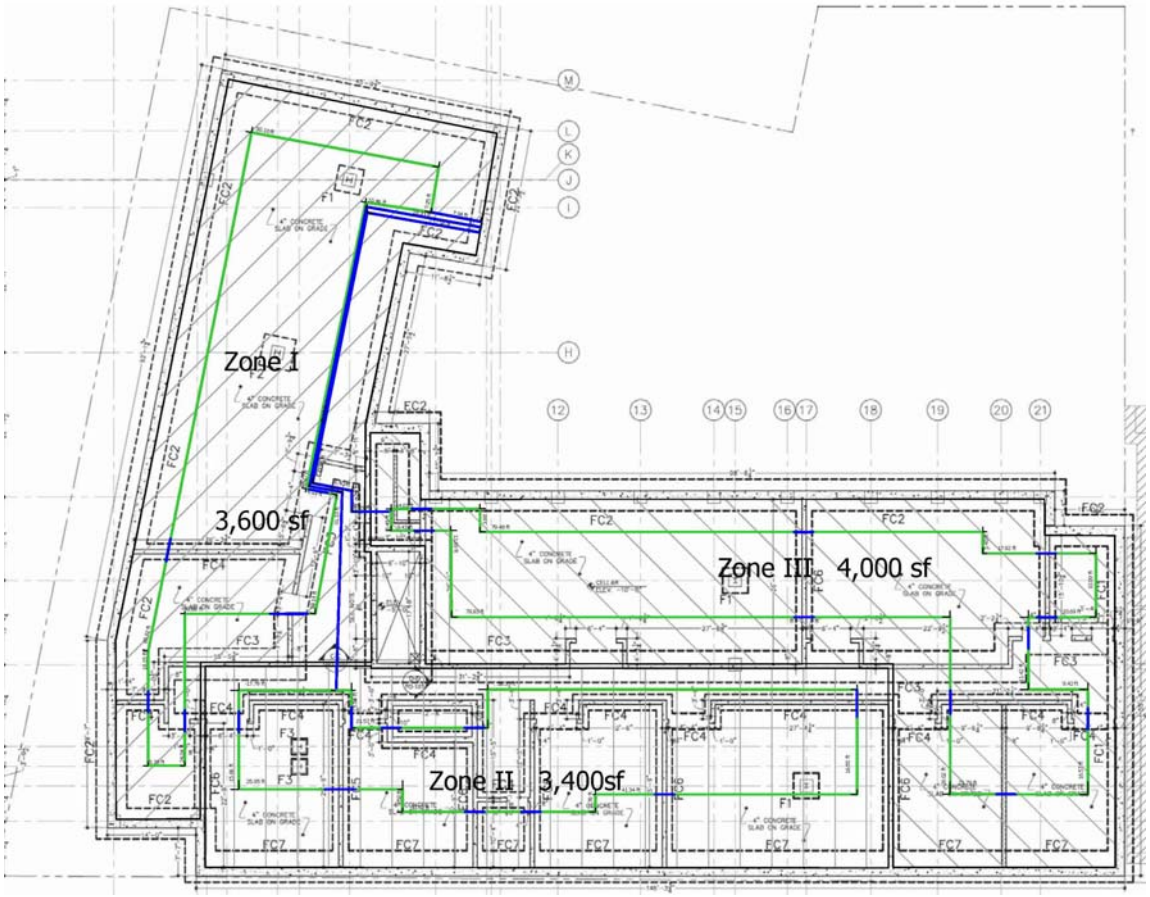


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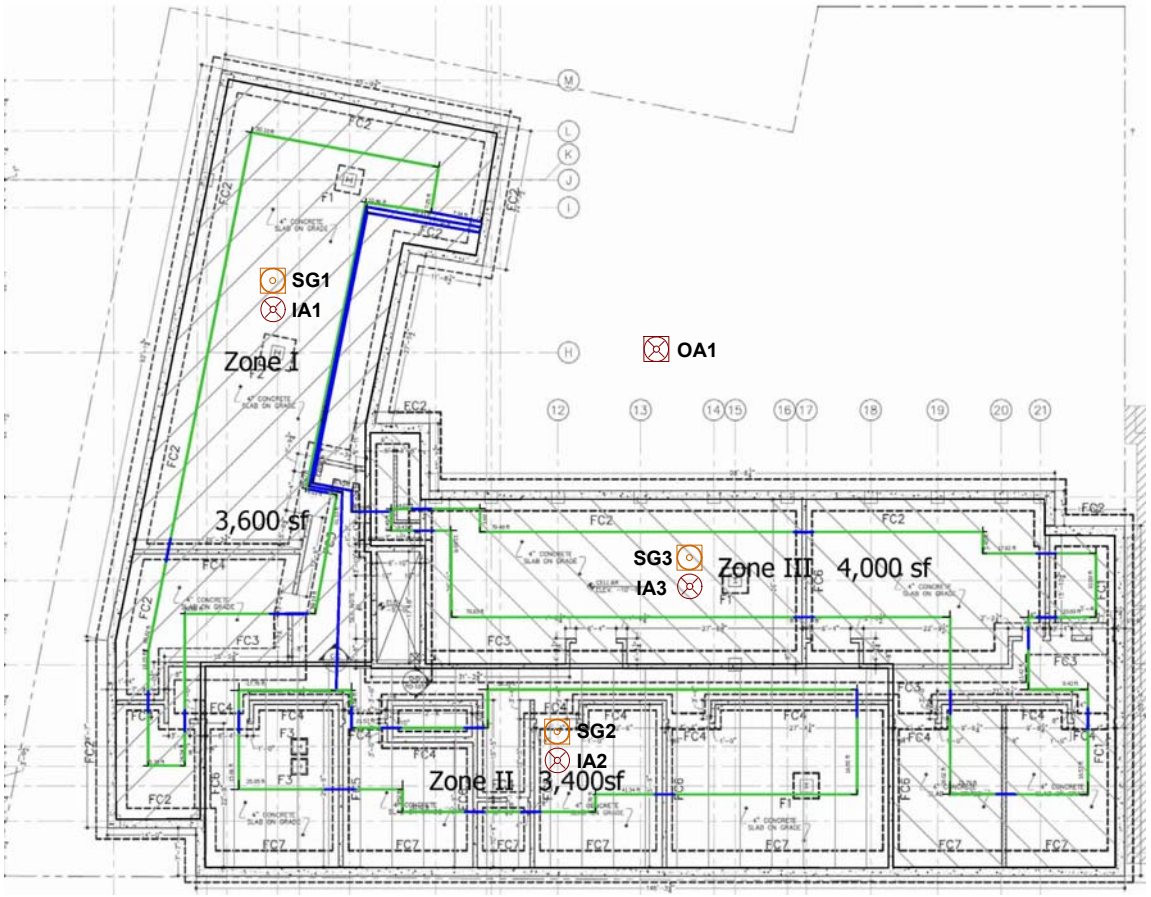
FIGURE 4 SSDS Design - Phase I



KEY

- 4" HDPE Corrugated Pipe
- 4" Cast Iron (6" Riser)
- SGx — Subslab Soil Gas Sampling Location
- IAx — Indoor Air Sampling Location
- OAx — Outdoor Air Sampling Location

SCALE

0 25 50

1 inch = 50 feet

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FIGURE 5 Proposed Sampling Locations - Phase I