SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN DOCUMENT

77 Cornell Street
Kingston, Ulster County, New York 12401

Submitted: January 20, 2023
Revised: March 30, 2023

DEC SITE NUMBER 356061

Prepared by: Bellucci Engineering, PLLC
27 Belcrest Road, West Hartford, CT 06107

Revised: March 30, 2023
Mr. Michael Kilmer
New York State Department of Environmental Conservation
Division of Environmental Remediation
21 South Putt Corners Road
New Paltz, New York 12561

RE: *Sub-Slab Depressurization System Design Document*
77 Cornell Street
Kingston, Ulster County, New York
Site No.: 356061

Dear Mr. Kilmer:

Bellucci Engineering, PLLC is pleased to present this *Sub-Slab Depressurization System Design Document* for the above referenced property. This report specifies the proposed design and installation procedures for a SSDS at the property located at 77 Cornell Street in Kingston, Ulster County, New York (herein the Site). This SSDS Design Document is being submitted to NYSDEC and NYSDOH for approval. If you should have any questions or require additional information, please contact our office.

Respectfully submitted,

Daniel Bellucci, P.E.
Bellucci Engineering, PLLC

Deborah Thompson
Senior Geologist

CERTIFICATION

I, Daniel Bellucci, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Sub-slab Depressurization System Design, was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Daniel Bellucci, P.E.
Professional Engineer #099470

Signature

03/30/2023

Date

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1.0 INTRODUCTION AND BACKGROUND

The Subject Property is located at 77 Cornell Street in the City of Kingston, Ulster County, New York (heretofore referenced as the Site or Subject Property). Refer to Figure 1 for a Site Location Map. The Site is not currently listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State (the Registry). Prior investigation activities have been conducted on the Site and the results of those investigations were submitted to the New York State Department of Environmental Conservation (NYSDEC or Department). Based upon these results, the Department has designated the Site as Site Number 356061with a Classification of "P" pursuant to ECL 27-1305.

The Subject Property contains a regular shaped lot which encompasses an area of approximately 0.88 acres along the southwest corner of the intersection of Smith Avenue and Cornell Street. The Site, also known as the Shirt Factory, is improved with 4-story building occupied by 62 tenant spaces for commercial and residential use. On-Site operations consist of artist loft/studios, professional offices and storage activities, and associated property maintenance. A partial basement is located along the southern portion of the Site structure. Areas surrounding the building include asphalt paved parking surfaces, concrete walkways and landscape spaces. Land-use surrounding the Subject Property is primarily characterized by residential and commercial development. The following table lists the abutting properties (See **Figure 2** – Surrounding Land Use Map):

Location	Occupant
North	Smith Avenue & Residences
South	Cornell Street & Tremper Avenue. USPS (90 Cornell Street to the Southeast)
East	Cornell Street & USPS (90 Cornell Street)
West	Residences along Ardsley Street & Smith Avenue

Site topography is relatively flat, and at grade with the surrounding roadways. Electric and gas services is supplied by Central Hudson Gas & Electric, while potable water and sanitary services are supplied by The City of Kingston (Municipal). No groundwater supply wells were observed on the Site by representatives of this office during Site inspections and no groundwater supply wells are known to be present or used on adjoining or nearby properties. Surface water runoff enters catch basins located throughout the property which appear to discharge into the municipal storm sewer system.

A Phase I Environmental Site Assessment (ESA) performed by Partner Engineering & Science (Partner) was performed in November 2018. As summarized in a January 2019 Phase II Subsurface Investigation Report prepared by Partner, the following areas of potential environmental concern and/or "recognized environmental conditions (REC)" were identified and are associated with the Subject Property:

- The Subject Property identified as Gant Shirt Makers at 77 Cornell Street is identified on the New York Drycleaners database under Facility ID 3-5108-00012. Based on a review of historical sources, this tenant operated onsite roughly between 1968 and 1979, a time of limited to no regulatory oversight. Additionally, former tenants including Not Fade Away Tie Die and QDP Electronics, utilized hazardous wastes, including benzene, ignitable wastes and tetrachloroethylene (PCE) on Site from at least 1982 through 1999 +/-. Dry cleaning operations typically use chlorinated solvents, particularly PCE, during the dry-cleaning process. These solvents, even when properly stored and disposed of, can be released from these facilities in small, frequent releases through floor drains, cracked concrete and sewer systems. Chlorinated solvents are highly mobile chemicals that can easily accumulate in the soil and migrate to the groundwater beneath a facility. Based on the confirmed use of chlorinated solvents, including PCE, at the Site for approximately 30 years, the historical use of the subject property is considered a REC.

- Partner observed a suspected vent pipe along the eastern façade of the subject property building along Cornell Street. Its location does not correspond with the reported location of the heating oil UST formerly located in the parking lot. Given the absence of aboveground storage tanks (ASTs) in the basement, the suspect vent pipe is considered a REC.

The Phase I identified the following historical recognized environmental condition (HREC) associated with the subject property:

- The Subject Property was formerly equipped with one 5,000-gallon No. 2 fuel oil UST located to the south of the current building. The tank failed a tightness test due to small ullage leak and Spill Number 1000041 was reported to the New York State Department of Environmental Conservation (NYSDEC) in April 2010. Partner was provided with a Tank Removal & Closure Report prepared by Enviro Clean Services, LLC (ECS) in August 2010. According to the ECS report, the tank was re-tested and failed again on June 9, 2010. The tank was cut open, pumped out and cleaned. The tank was excavated and removed from the tank pit, with no significant pitting and/or "rush through" perforations observed by ECS. According to ECS, petroleum-contaminated soils (PCS) were not visually observed in the tank pit, and photoionization detector (PID) readings did not indicate the presence of PCS in the excavation. Four grab samples were collected from the pit walls and one two-point composite sample was collected from the bottom of the excavation. These samples were analyzed for VOCs and semi-VOCs (SVOCs). The soil samples from the north and south pit walls exhibited concentrations of the VOCs 1,2,4-trimethylbenzene and naphthalene [2.2 to 2.7 micrograms per kilogram (ug/kg) and 12.0 to 29.0 ug/kg, respectively]. No other VOCs were detected in the soil samples. The east pit wall exhibited low levels of five SVOCs, ranging from 0.30 to 1.10 parts per million (ppm). ECS stated that as the site

is served by municipal water and sewer and no sensitive receptors are located in the vicinity, no further excavation of the remaining impacted soils would be necessary. ECS requested a letter of No Further Action (NFA) from the NYSDEC for Spill Number 1000041, and the case was granted regulatory closure in October 2010. Based on the removal of the tank and regulatory closure, this former UST and associated spill case are considered an HREC for which no further action is necessary.

1. Phase II Subsurface Investigation Report, January 3, 2019.
   Partner Engineering & Science

The Partner subsurface investigation entailed performing a geophysical survey to pre-clear borings, scan for potential USTs, and collection of soil sub-slab soil gas samples from beneath the slab of the Site structure. Pertinent findings documented in the Partner's field study included the following:

- The results of the geophysical survey did not indicate the presence of USTs in the areas of the property that were scanned. Due to the presence of subsurface utilities in the location of the former 5,000-gallon fuel oil UST, exterior soil borings could not be advanced in this location.

- A total of three sub-slab soil gas samples were collected from beneath the building. Two samples were collected from the southern portion of the building and one sample was collected from the northern portion of the building. The soil gas samples were submitted for VOC analysis by EPA Method TO-15. Trichloroethylene (TCE) was detected in soil vapor sample SVP-3 (northern portion of the building) at 88.1 micrograms per cubic meter ($\mu g/m^3$). This concentration exceeds the New York State Department of Health (NYSDOH) Matrix A concentration of 60 $\mu g/m^3$, with the resulting recommendation of mitigation. TCE was detected in SVP-1 at a concentration of 15.2 $\mu g/m^3$, which corresponds to a NYSDOH recommendation of no further action, monitor and mitigate, depending on the indoor air concentration.

2. Vapor Sampling Results Report, January 18, 2019.
   PSG Engineering, D.P.C. (PSG)

Based on the findings of the Phase II Subsurface Investigation, Partner recommended further investigation to assess soil gas and indoor air. PSG completed the additional investigation work as summarized in a Vapor Sampling Results Summary Report dated January 18, 2019. Pertinent findings from the report include the following:

- One sub-slab soil vapor sample was collected from the central portion of the building. TCE was detected at a concentration of 115 $\mu g/m^3$ in the soil gas sample designated SSSG-MIDSTAIR, above the NYSDOH Matrix A concentration of 60 $\mu g/m^3$, with the resulting recommendation of mitigation.

- A total of four indoor air and one ambient air sample were collected from the Subject Property. Of note, TCE was detected in one of the five samples collected at a concentration of 2.57 $\mu g/m^3$. This sample, designated "Unit 109", was collected from the central portion of the building. The concentration is above the NYSDOH guideline which requires additional investigation or mitigation but is below the immediate action level of 20 $\mu g/m^3$. TCE was not detected in the remaining indoor and ambient air samples.

Based on the results of the investigation, PSG recommended that a mitigation system, such as a SSDS, be installed to address the vapor intrusion concerns at the Site.

3. Subsurface Investigation Report, January 5, 2021.
   DT Consulting Services, Inc. (DTCS)

DTCS submitted all environmental reporting generated on the Subject Property to Mr. Michael Kilmer of the NYSDEC for review and comment on November 6, 2020. Mr. Kilmer responded to the submittal, also on November 6, 2020, requesting that soil and groundwater data be collected on-Site prior to proceeding with regulatory review.

- A total of six soil borings were advanced throughout the property using a direct push drill rig. Three soil borings were converted into temporary monitoring wells for groundwater sampling. A total of six soil and three groundwater samples were collected from the Site for laboratory analysis of VOCs by EPA Method 8260.

- Upon review of analytical testing results, DTCS concluded that all soil boring locations were returned with either non-detectable concentrations of VOCs or with reported values which met unrestricted soil cleanup objectives (SCOs) as defined in NYSDEC 6 NYCRR Part 375 – Environmental Remediation Programs; Subpart 375-6.

- Analysis of groundwater collected from the temporary Site wells constructed in Soil Borings SB-3, SB-4 and SB-5 revealed detectable levels of Chloroform, PCE, and TCE which only slightly exceed NYSDEC TOGS 1.1.1., Class GA groundwater quality standards. The remaining VOCs were returned with either non-detectable sample concentrations or with reported concentrations below guidance.

This report summarizes the additional Site characterization field study conducted at the Site between April 5 and April 6, 2022. The purpose of the RI at the Site is to confirm groundwater quality within existing on-Site monitoring wells, confirm that there are no potential off-Site soil vapor impacts, and to collect sufficient data to design the appropriate SSDS to mitigate any vapor intrusion beneath the footprint of the Site structure.

A report titled, *Site Characterization Report*, dated October 6. 2022, includes a summary of the site characterization and SSDS pilot testing procedures. This SSDS Design Document has been

prepared for the proposed installation of a SSDS as a mitigation measure designed to be protective of public health.

2.0 SITE SETTING

2.1 SITE SOIL AND BEDROCK GEOLOGY

Site soils are composed of brown sands with trace urban fill material (Coal and coal ash) from approximately 0 to 10-feet below ground surface (bgs). The overburden fill soils are underlain by native brown fine sand and silt. Sub-slab soils encountered during installation of pilot testing extraction wells consisted of silty fine sand. According to the 1989 USGS Surficial Geologic Map of New York, Lower Hudson Sheet, the vicinity of the Site is underlain by Lacustrine sands, consisting of sand deposits associated with large bodies of water, generally a new-shore deposit or near a sand source, well sorted, stratified, generally quartz sand. Bedrock has not been encountered in prior investigations to a maximum exploration depth of 25-feet below bgs.

2.2 SITE HYDROGEOLOGICAL CONDITIONS

Shallow groundwater has been measured across the Site at depths ranging from 13.48 to 16.07 feet bgs during the most recent April 2022 sampling event.

3.0 SSDS PILOT TEST SUMMARY

The purpose of the pilot test was to evaluate the effectiveness of a SSDS as a potential mitigation measure for cVOCs in soil vapor identified beneath the building. Field activities were conducted in October 2020. **Tables 1, 2 and 3** include the tabulated data collected during the pilot test. **Figure 3** depicts the locations of the extraction wells and soil gas/vacuum monitoring points utilized during the pilot test program. **Figure 4** shows the estimated radius of influence generated during each of the four tests conducted at the Site. A complete description of the SSDS extraction well installation, vacuum monitoring point installation and other pilot/diagnostic test work is presented in the *Site Characterization/ Interim Remedial Measure Work Plan*, dated March 11, 2022.

SSDS pilot testing indicates the southwestern/ central portions of building are underlain by low permeability soils which require high vacuum, low air flow blowers to extend the radius of influence from each extraction well. Conversely, pilot testing indicates the northeastern portion of the building is underlain by high permeability soil/ aggregate which require low vacuum, high air flow blowers. Average vacuum readings greater than -0.004 in-H_2O were recorded in six of the nine vacuum monitoring points. Based on an analysis of the pilot study data and site characterization data (April 2022), three (3) new extraction wells, in addition to the four existing extraction wells, will be required to mitigate vapor intrusion beneath the space. It should be noted that site characterization data collected does not indicate a vapor intrusion concern within the basement of the building. Accordingly, this SSDS Design Document includes mitigation of the slab-on grade portion of the building.

A vapor sample was collected from the extracted vapors during Test #2 (EX-4). The sample data was used to model projected air emissions from the SSDS. Including installation of a new extraction well (EX-5), the results of the mass removal calculations using the laboratory analytical data indicated a total of 0.000158 (1.58-4) pounds of total mass (PCE and TCE) for five extraction wells. The anticipated average removal rate for PCE and TCE was calculated as 0.00227 ($2.527x10^{-3}$) pounds per day.

The predicted effluent concentrations, as generated using the AERSCREEN dispersion modeling (PCE and TCE), did not exceed the concentration values for contaminants of concern listed within the SGC and AGC values. Accordingly, effluent concentrations that will be generated by the SSDS do not require treatment prior to atmospheric discharge.

4.0 SSDS DESIGN

The SSD system design presented herein is proposed to depressurize the entire footprint of Site building, with the exception of the basement space which does not warrant mitigation based on sub-slab soil gas and indoor air data collected from the Site. Gaps in the ROI demonstrated during pilot testing are present and must be addressed through installation of three additional extraction wells. Low level vacuum at TVP-1 in the southwestern portion of the building will be addressed through installation of a new extraction well in that portion of the building (herein EX-5). Similarly, the absence of vacuum at V-6 the northern portion of the building will be addressed through installation of an extraction well in that portion of the building (herein EX-7). Last, the absence of vacuum at VP-7 while pumping EX-1 will be addressed through installation of a new extraction well in the eastern/ central portion of the building (herein EX-6).

Prior to installation of the SSDS, a Commercial Building Permit will be obtained through the City of Kingston Building Department.

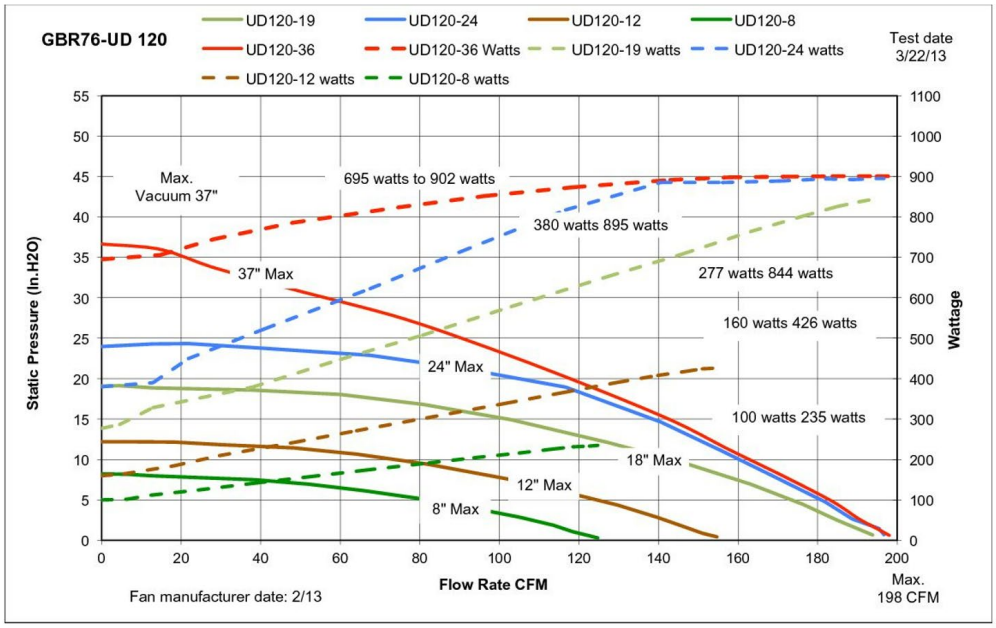
4.1 SSDS DESIGN PARAMETERS

The SSDS design for the will utilizes the four existing extraction wells (EX-1 through EX-4), along with three new proposed extraction wells (EX-5 through EX-7). The proposed well locations are depicted on **Figure 5**, *SSDS Installation Plan View*. The proposed extraction well details are depicted in **Figure 8**, *Detail 1*. Conditions of high air flow and low vacuum were observed at wells EX-1 and EX-4 during pilot testing. Low air flow and high vacuum was observed at EX-2 and EX-3 located in the southern portion of the building during pilot testing. Based on pilot testing data, a total of three SSDS fans will be required to mitigate the building, as described in Sections 4.1.1 through 4.1.3 below.

4.1.1 Southwestern/ Central Portion of Building

EX-2 and EX-3 and EX-5 will be connected to one (1) GBR 76UD high vacuum fan (cumulative system air flow estimated at 115 CFM). Operating at the maximum projected applied vacuum 16 in-H_2O, the cumulative air flow falls under the fan curve for an Obar® GBR 76UD fan.

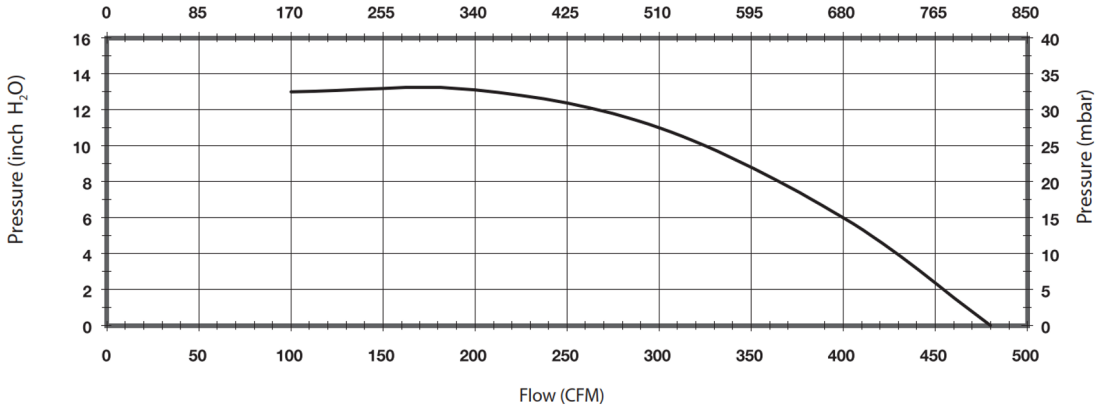
Figure 4.1.1 - GBR 76UD



4.1.2 Central/ Northern Portion of Building

EX-1 proposed wells EX-6 located in the central/ eastern portion of the building will be connected to one (1) GBR 89HA high air flow fan (cumulative system air flow 200 CFM assuming the proposed extraction well is similar to EX-1). EX-4 proposed wells EX-7 located in the central/ northern portion of the building will be connected to one (1) GBR 89HA high air flow fan (cumulative system air flow 200 CFM assuming the proposed extraction well is similar to EX-4). Operating at the maximum projected applied vacuum 7 in-H_2O, the cumulative air flow falls under the fan curve for an Obar® GBR 89HA fan.

Figure 4.1.2 - GBR89



4.2 PIPING AND SYSTEM COMPONENTS

The existing and proposed well locations are depicted in **Figure 5**. **Figures 6A, 6B** and **6C** are process flow diagrams depicting the proposed equipment and generalized piping layout within the

building. All piping/ fan locations are subject to change based on site conditions observed during installation and will be made in consultation with the engineer of record.

All wells connected to the GBR 76UD fan will consist of 3-inch schedule 40 PVC. The wells connected to the GBR 89HA fans will consist of 4-inch schedule 40 PVC. The proposed well in the southwestern (EX-5) portion of the space will include an approximate 3 & ½ -inch slab core and will follow the design specifications in **Figure 8**, *Detail 1*. The proposed wells in the eastern/central northern (EX-6 and EX-7) portions of the space will include an approximate 4 & ½-inch slab core and will follow the design specifications in **Figure 8**, *Detail 1*. All PVC risers will be connected to each extraction well and extended vertically above the drop ceiling. All interior PVC may be foam or solid core schedule 40. All exterior PVC must be solid core schedule 40.

A nylon ball valve will be installed at a height of approximately 4-5-feet above the slab on each riser pipe. The purpose of the valve is to allow for collection of system operational data, including air flow, temperature, vacuum, PID readings and effluent laboratory samples. See **Figure 8**, *Detail 3* for the sample ball valve installation specifications.

A SSDS label will be placed on each riser pipe at a height of approximately 5-feet above the slab. The label will read, "THIS IS A COMPONENT OF A SUB-SLAB VENTING SYSTEM. DO NOT TAMPER WITH OR DISCONNECT."

An Obar® GBR 25 vacuum gauge and visual / audible alarm will be installed on a wall proximal to select wells (See **Figures 6A, 6B** and **6C**). Note, the location of the alarm may be changed to a different extraction well within the units based on building occupant and ownership consultation. A total of three alarms (one per fan) s will be connected to dedicated outlets to be installed by the electrician. The outlets will be outfitted with a protective cover and tamper proof lock to prevent tenant from mistakenly disconnecting the alarm. Tubing will connect the alarm to the sample port installed on the extraction well. The visual/ audible alarm will be preset to trigger if the vacuum within the riser pipes falls below 1-in H_2O. The screen of the gauge will provide a real-time digital output of system vacuum. All remaining wells will be outfitted with wall mounted Dwyer® Minihelic vacuum gauges for real-time vacuum monitoring. The vacuum gauges for EX-2, EX-3 and the proposed well EX-5 will have a threshold of 0 to 40 in H_2O. The vacuum gauges for EX-1, EX-4 and the proposed wells EX-6 and EX-7 will have a threshold of 0 to 20 in H_2O. Specifications for the Obar® GBR 25 vacuum gauge and visual / audible alarm and Dwyer® Minihelic vacuum gauge are included in **Appendix A.**

Inline PVC ball valves will be installed on the vertical pipe prior to the drop ceiling for system balancing purposes. The ball valves should be located at a height such that it cannot be easily tampered with by the tenants/ occupants of the space (7-8 feet above slab grade).

Each of the extraction wells will be connected above the drop ceiling using smooth T junctions. The PVC pipe will be secured with steel clevis hangars or approved equivalents, spaced every 8 to 10-feet. The hangars will be secured to the roof decking/ supports with either wood anchors or C-clamps. All horizontal piping will be installed with an approximate 1% pitch towards each extraction well to promote condensate drainage. All coupler and elbow connections will be made with medium duty PVC primer and glue.

4.3 SIDEWALL PENETRATIONS & SEALING

The combined pipe runs will be directed to an exterior location on the first floor and penetrate the existing brick faced (See **Figure 8**, *Detail 4*). An approximate 3 ½ or 4 ½-inch core will be made in the exterior wall and the pipe(s) will be routed through the wall to the exterior. A fire rated foam will be applied inside the structure and the exterior wall will be sealed with a cement/ mortar.

4.4 FAN MOUNTING & EXTERIOR PIPING

The piping will be routed vertically up the exterior wall and into the intake of the fans. The fans will be secured to the wall using an aluminum Obar GBR® Wall Mounts, and the piping will be routed vertically up the wall from the exhaust port of the blower/ fan. Struts will be secured using Tapcon® (or equivalent) concrete anchors approximately every 10-feet and strut clamps will be used to secure the pipes to each strut (See **Figures 7A**, **7B** & **7C**. See **Figure 8**, *Detail 6*).

The effluent discharge will be terminated a minimum of 3-feet above the roofline, 6-inches above the parapet and a minimum of 10-feet or more from any HVAC intake, window or other building openings. A copy of the Obar GBR® wall mount technical specifications is included in **Appendix A**.

4.5 ELECTRICAL

The fans will be wired (120 or 220V) to dedicated breakers in the house panel by a City of Kingston licensed electrician and in accordance with local, county and state electrical codes. A dedicated outlet will also be installed in proximity to each Obar® GBR 25 vacuum gauge and visual / audible alarm.

4.6 AERSCREEN EVALUATION

An effluent sample collected during pilot testing from the well located closest to the former dry cleaner (EX-4) was analyzed for VOCs to evaluate the toxicity and impacts on the receptors downwind using a dispersion model (AERSCREEN). AERSCREEN is a screening model based on the U.S. EPA AERMOD air quality dispersion model to predict ambient air concentrations attributed to a single source. The input parameters including total VOC concentrations, effluent loading rates, stack height, flow rates, temperature, velocity and the distance to the receptor (Estimated at 10 feet) were compared to the NYSDEC DAR Air Guidance (DAR-1) Guidelines for the Control of Toxic Ambient Air Contaminants, AERSCREEN computer program (**Table 4**). The average flow for each extraction well during pilot testing was used in the AERSCREEN model. The generated concentrations were compared with Short-term Guideline Concentrations (SGCs) and Average-Annual Guidance Criteria (AGCs). A scenario was run for combined effluent assuming use of each of the five pilot test extraction wells. The model's predicted results for PCE and TCE did not exceed the concentration values for contaminants of concern listed within the SGC and AGC values. The pilot testing laboratory analytical data utilized in the AERSCREEN Model is included in **Appendix D.** The raw data inputs for the AERSCREEN model are included in **Appendix E.**

Accordingly, the results of pilot testing and the AERCREEN model indicate that the levels to be discharged from the Site are acceptable for direct discharge to the atmosphere without vapor

control during the full-scale SSD system operation. It should be noted that the pilot testing data used for the model are considered conservative as the sample was collected only 20 minutes after the pump test occurred. Effluent concentrations typically decrease significantly after the first month of operation in the absence of a significant groundwater plume or soil source areas. Effluent concentrations are expected to decrease with time based on the following factors:

- Cessation of on-Site dry-cleaning operations;
- The absence of a significant soil or groundwater source of cVOCs;

If additional testing indicates exceedance of ACGs/ SCGs, emissions controls will be considered for the Site.

4.7 SEALING OF CRACKS AND JOINTS

Any visible expansion joints or slab cracks in the Site building will be sealed. Generally, extensive cracking has not been observed throughout the building slab. However, large portions of the slab are covered with wood and tile flooring. Accordingly, a thorough observation of the concrete slab cannot be made. Cracks will be sealed with a low-VOC caulk sealant. Any openings into the slab, such as those that may occur around conduit pipe penetrations through the slab, will be cleaned and sealed with low-VOC caulk.

5.0 TESTING, OPERATION & MAINTENANCE

The system will be monitored for a period of 1-year after startup as described in this section. Only the testing, operation and maintenance proposed within the first year of system operation are included in this design document. Long term testing, operation and maintenance of the SSDS beyond the first year will be outlined in a Site Management Plan (SMP) which will be prepared following completion of addition remedial actions proposed for the Site. If the SMP has not been completed within 1 year of the SSDS installation, a standalone SSDS Operation & Maintenance Plan will be prepared. During each of the inspections described in the section, any deficiency observed will be corrected as needed by the field team. These will be noted in monthly status reports prepared for the Site.

5.1 SYSTEM STARTUP TESTING

Immediately following the SSDS installation and system startup, Bellucci Engineering will collect system data including:

- Extraction well vacuum (in-H_2O)
- Extraction well temperature (˚F)
- Extraction well velocity (FPM) – to be converted for CFM
- Sub-slab vacuum (in-H_2O)

System balancing will be performed during initial testing and the collected data will be evaluated against pilot testing data.

5.2 POST SYSTEM STARTUP TESTING – 1 WEEK

Approximately one week after system startup, Bellucci Engineering will revisit the site for a 1-week post-system inspection. During this inspection, Bellucci Engineering will collect system data including:

- Extraction well vacuum (in-H_2O)
- Extraction well temperature (˚F)
- Extraction well velocity (FPM) – to be converted for CFM
- Sub-slab vacuum (in-H_2O)

A sample will be collected from each of the seven (7) proposed extraction wells. The samples will be collected using batch clean SUMMA canisters. The extracted vapor samples will be sent to an NYSDOH-approved laboratory and analyzed for VOCs by EPA method TO-15. The extracted vapor sample results will be compared with the respective AGC and SGC values and the AERSCREEN model will be updated to determine if a vapor control system is required.

5.3 POST SYSTEM STARTUP TESTING – 1 MONTH

Approximately one month after system startup, Bellucci Engineering will revisit the site for a post system testing. During this inspection Bellucci Engineering will collect system data including:

- Extraction well vacuum (in-H_2O)
- Extraction well temperature (˚F)
- Extraction well velocity (FPM) – to be converted for CFM
- Sub-slab vacuum (in-H_2O)

It is anticipated that concentrations of cVOCs in indoor air detected within the tenant spaces will begin to decrease immediately following system startup. Indoor air testing at each occupied first floor tenant space (9-10 total locations) and the unoccupied basement space will be conducted approximately 1-month after system startup. Up to eleven (11) indoor and one (1) outdoor ambient air samples will be collected from the Site. The outdoor ambient air sample will be collected from an upwind location on the property. Each sample will be collected at a height of 3-5 feet from the ground within the approximate breathing zone. Parameters including indoor and outdoor air temperature, wind direction and relative humidity will be noted during the sampling event.

The air samples will be collected for analysis in batch clean SUMMA canisters equipped with a laboratory calibrated flow control device to facilitate the collection of the samples for a 24-hour sample duration time. Following sampling, the pressure of the SUMMA canisters will be recorded. A sample log sheet will be maintained summarizing sample identification, date and time of sample collection, sampling depth, identity of samplers, sampling methods and devices, vacuum of canisters before and after the samples are collected, and chain of custody protocols.

The air samples will be submitted to a NYSDOH-approved laboratory for analysis of VOCs by EPA Method TO-15.

5.4 QUARTERLY OPERATION & MAINTENANCE

Following the first month of operation, the SSDS will be monitored on a quarterly basis for the first year, unless startup testing indicates more frequent monitoring is required. During each quarterly monitoring event, Bellucci Engineering will collect system data including:

- Extraction well vacuum (in-H_2O)
- Extraction well temperature (˚F)
- Extraction well velocity (FPM) – to be converted for CFM
- Sub-slab vacuum (in-H_2O)

Indoor air samples will be collected from each tenant space as described in Section 5.3 during each quarterly monitoring event for the first year of operation. The monitoring frequency may be adjusted pending the results of initial testing. Long term testing, operation and maintenance will be determined based on the evaluation of the first year of operational data and will be made in consultation with NYSDEC and NYSDOH. This will be documented in the SMP or as a standalone SSDS Operation & Maintenance Plan if the SMP/ Final Engineering Report is not completed within 1 year of the system installation.

6.0 SSDS INSTALLATION SUPPORT ACTIVITIES

6.1 COMMUNITY AIR MONITORING PLAN

A site-specific Community Air Monitoring Plan (CAMP) has been prepared for the Site and has been placed in **Appendix B**. This document will be employed during all ground intrusive indoor Site activities. It should be noted that the proposed design includes minimal sub-grade excavation. All concrete disturbance activities will include the use of wet concrete cutting methods.

6.2 HEALTH & SAFETY PLAN

A Site and contaminant specific Health and Safety Plan (HASP) has been prepared for the Site and is included as **Appendix C**. Field personnel will be outfitted in the appropriate health and safety equipment (i.e., nitrile gloves, level D personal protective equipment) and be educated on Site-specific hazards.

6.3 TENANT COMMUNICATION

Prior to system installation, each of the ground floor tenants will be notified. After installation of the SSD system, an information package will be prepared and provided to the tenants. The information package will provide a description of the SSDS, a summary of the proposed testing, operation and maintenance of the SSDS, how the tenant can confirm the system is operating properly and contact information in case of system failure or other questions. A copy of the tenant information package will be submitted to NYSDEC and NYSDOH and will be memorialized in the Construction Completion Report (CCR).

6.4 WASTE HANDLING

All investigation/installation-derived waste (IDW) will be contained on-Site in a secure area for appropriate characterization and disposal. Soil, personal protective equipment, and spent disposable sampling materials will be segregated by waste type and placed in DOT-approved 55-gallon steel drums. Waste construction materials such as scrap PVC pipe will be discarded in appropriate containers as general construction waste. All decontamination water will be stored in 55-gallon drums as necessary. Field staff will maintain an inventory of all waste storage vessels. All storage vessels will be appropriately labeled with the contents, generator, location, and date.

7.0 REPORTING & SCHEDULE

The SSDS will be installed within 60-days of receipt of the Department's approval of this Design Document, pending approval of local permitting requirements.

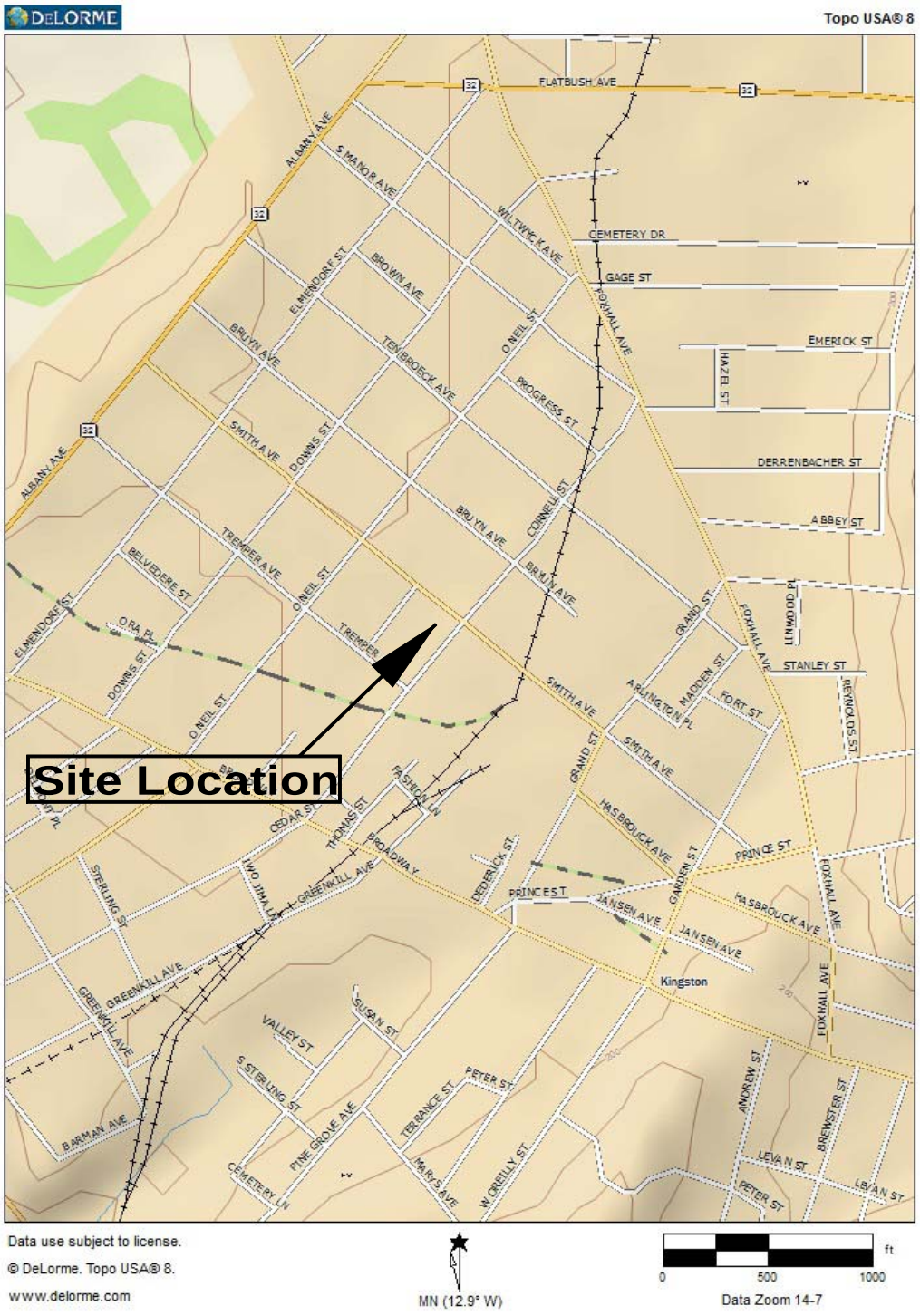
A CCR will be prepared and submitted to NYSDEC and NYSDOH following installation and startup of the SSDS. The report will include a summary of the first month of testing, operation and maintenance. The CCR will include a description of the SSDS as constructed, modifications to the system design, the data collected, and record drawings. The CCR will be stamped, certified and signed by a New York State licensed professional engineer.

It is anticipated that the CCR will be completed within 5 months of system startup. A Site Management Plan or a standalone SSDS Operation & Maintenance Plan (if the Final Engineering Report is not complete) will be prepared and submitted approximately 1 year after system installation.

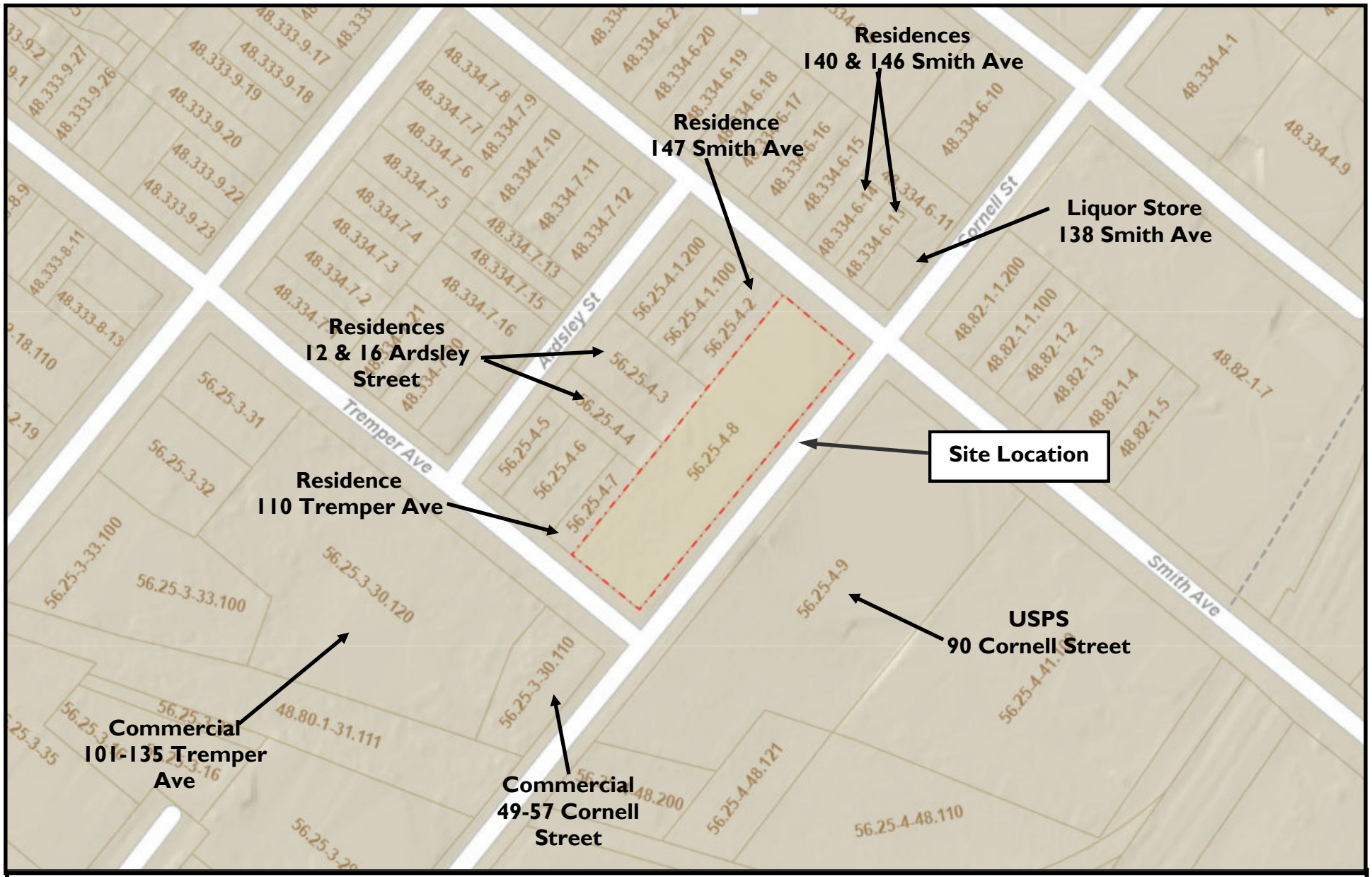
The following table summarizes the anticipated schedule for the Site:

Milestone	Anticipated Date
NYSDEC and NYSDOH approved of SSDS Design Document	April 2023
Installation of SSDS/ System Startup and Testing	May/ June 2023
1-Week Post System Startup Testing	May/ June 2023
1-Month Post System Startup Testing	June/ July 2023
Construction Completion Report	October 2023
Quarterly O&M	September, December 2023, March, June 2024
SSDS Operation & Maintenance Plan or SMP/ Final Engineering Report	Fall 2024

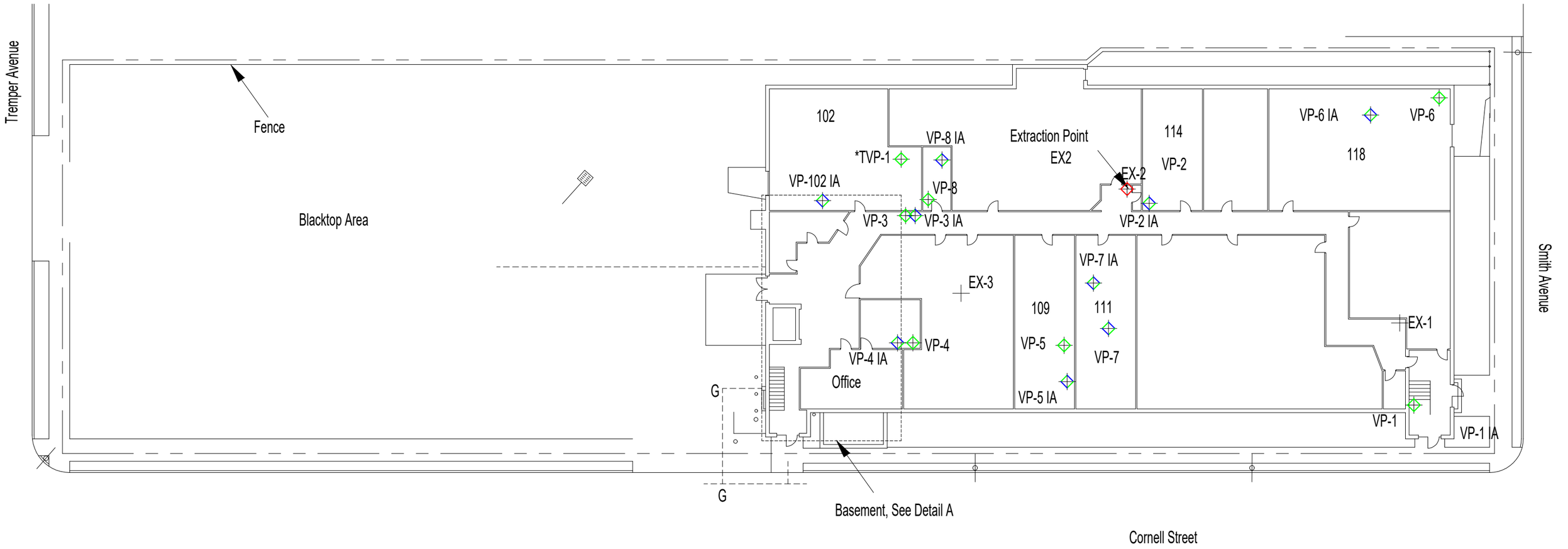
FIGURES

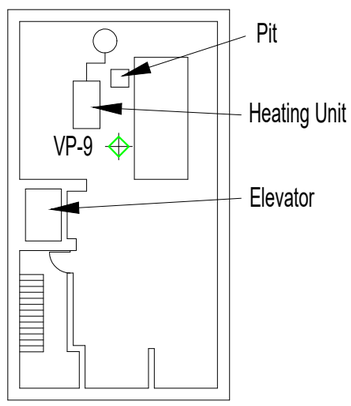


Client: Kingston Lofts LLC		**Site Location Plan**
Site: 77 Cornell Street, Kingston, New York		
	Drawn by: DJT / **Scale:** Graphic	**Figure No:** 1



DT Consulting Serivces, Inc. 1291 Old Post Road Ulster Park, New York 12487	*77 Cornell Street* *Kingston, New York*	**Figure 2 - Surrounding Land Use Map** Site # 356061



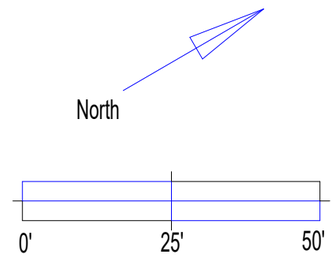


Detail A

Key

- Underground Utilities
- Approx. Property Line
- VP-XX Vapor Point Interior
- VP-XXIA Vapor Point Indoor Ambient Air
- EX-XX SSDS Extraction Well
- Utility Pole
- Storm Drain

*TVP-1 - Installed during pilot testing for ROI testing purposes only



P.E. Certification/ Seal

STATE OF NEW YORK · DANIEL A. BELLUCCI · 099470 · LICENSED PROFESSIONAL ENGINEER

Daniel A. Bellucci License #099470

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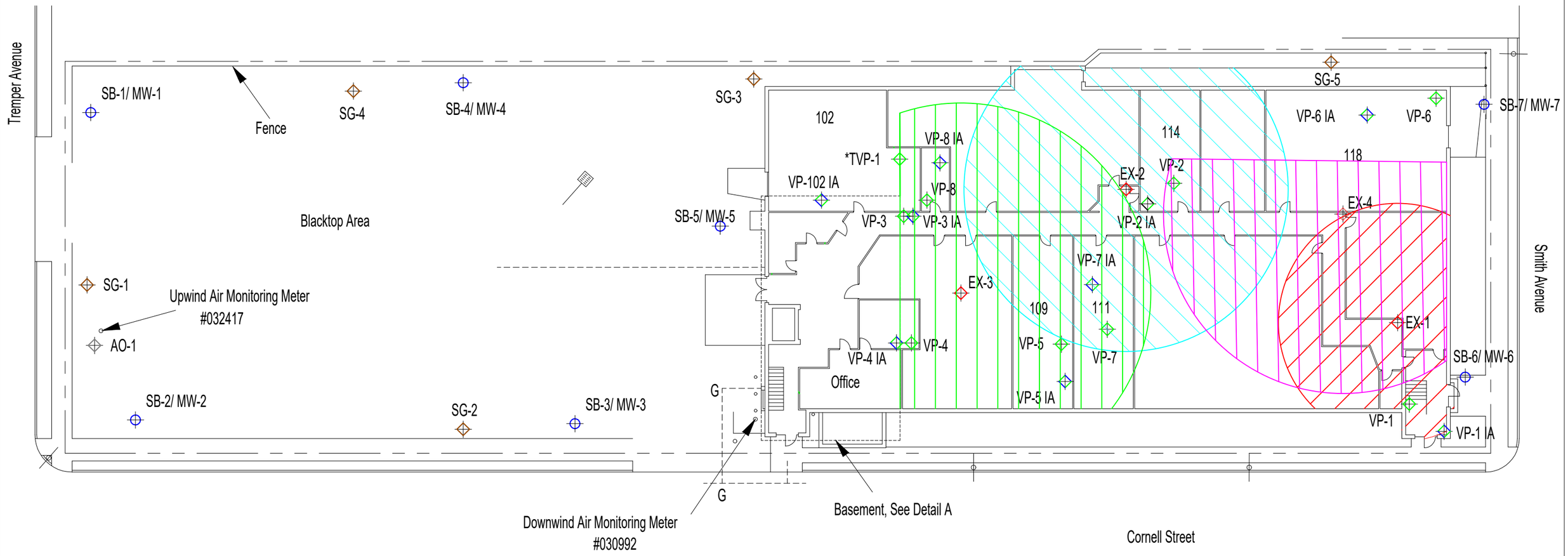
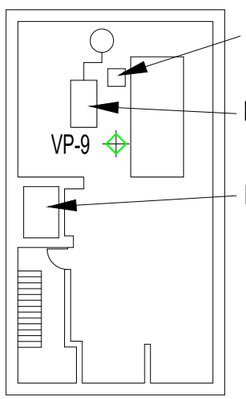
DT Consulting Services, Inc.
1291 Old Post Road
Ulster Park, New York 12487
(845) 658-3484

Client: 77 Cornell Street LLC			
Location: 77 Cornell Street, Kingston, Ulster County, New York			
Title: IRM Sample/ Testing Location Map			
Scale: Graphic	Drawn By: O.T.	Site No: 356061	Fig.#: 3





Detail A

Key

- Underground Utilities
- Approx. Property Line
- SB-XX Soil Boring/ Permanent Monitoring Well
- SV-XX Soil Vapor Exterior
- VP-XX Vapor Point Interior
- VP-XXIA Vapor Point Indoor Ambient Air
- EX-XX SSDS Extraction Well
- AO-XX Ambient Air Outdoor
- Utility Pole
- Storm Drain

EX-1 Radius of Influence

EX-2 Radius of Influence

EX-3 Radius of Influence

EX-4 Radius of Influence

*TVP-1 - Installed during pilot testing for ROI testing purposes only

North

0' 25' 50'

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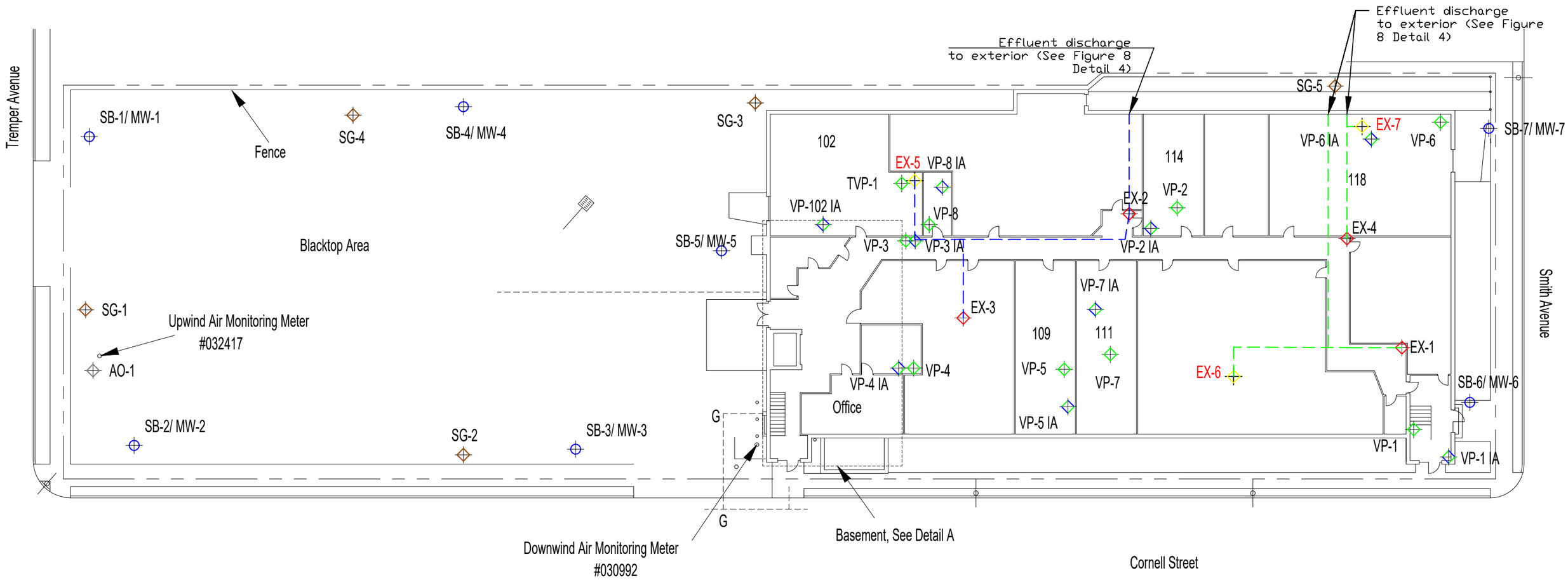
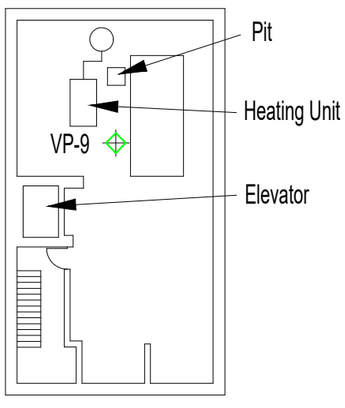
Daniel A. Bellucci License #099470

DT Consulting Services, Inc.
&
Bellucci Engineering, PLLC

Client: 77 Cornell Street LLC			
Location: 77 Cornell Street, Kingston, Ulster County, New York			
Title: Radius of Influence Map			
Scale: Graphic	Drawn By: O.T. & D.B.	Site No: 356061	Fig.#: 4



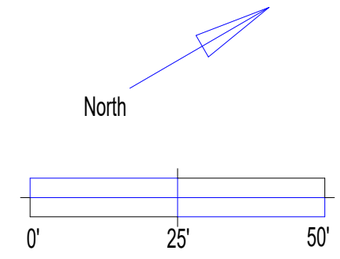


Detail A

Key

- Underground Utilities
- Approx. Property Line
- SB-XX Soil Boring/ Permanent Monitoring Well
- SV-XX Soil Vapor Exterior
- VP-XX Vapor Point Interior
- VP-XXIA Vapor Point Indoor Ambient Air
- EX-XX SSDS Extraction Well
- AO-XX Ambient Air Outdoor
- Utility Pole
- Storm Drain

- Proposed SSDS Extraction Well
- Pipe Run (3" Sch. 40) EX-2, EX-3 & EX-5
- Pipe Run (4" Sch. 40) EX-1, EX-4, EX-6 & EX-7



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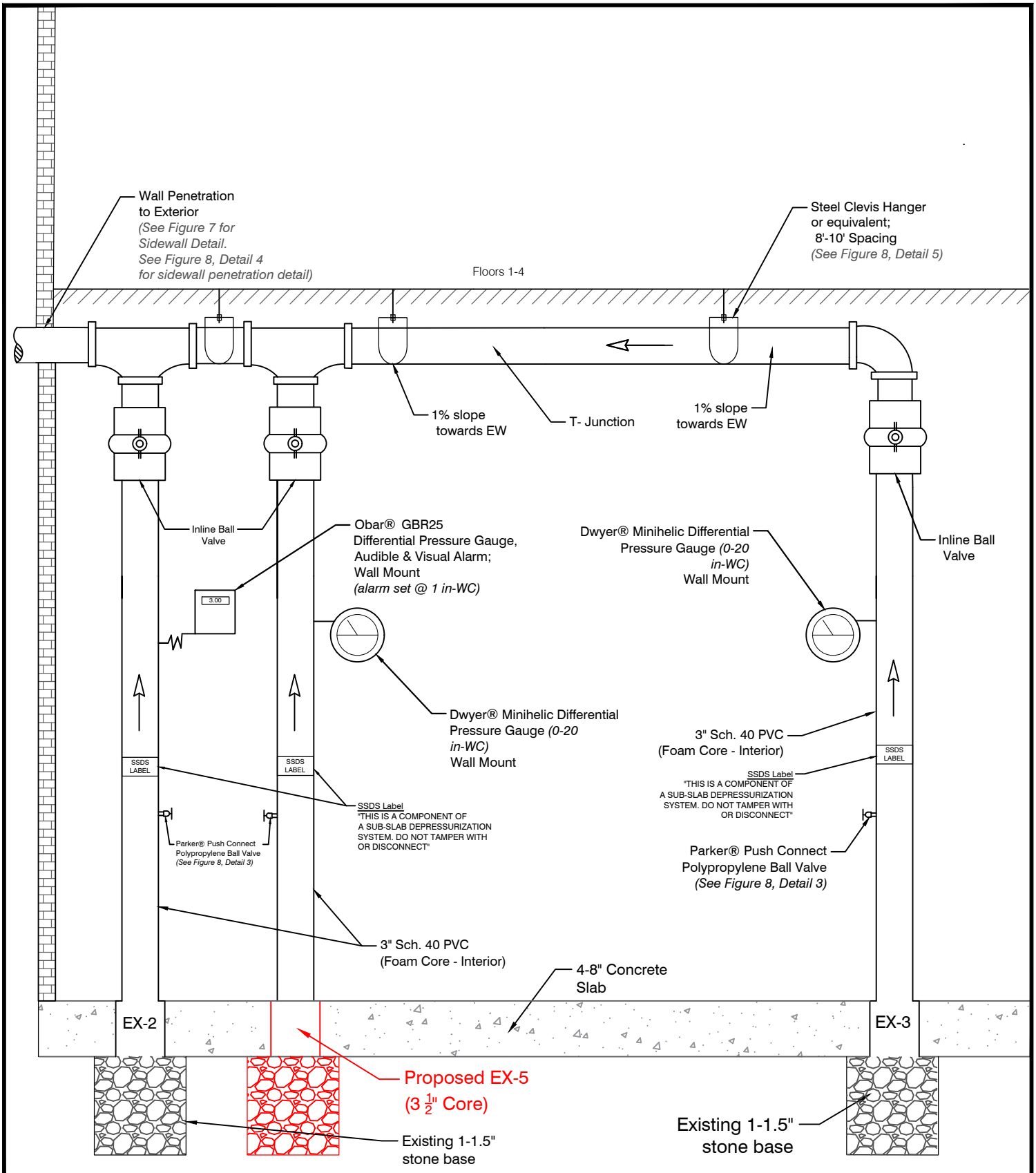
DT Consulting Services, Inc.
&
Bellucci Engineering, PLLC

Client: 77 Cornell Street LLC			
Location: 77 Cornell Street, Kingston, Ulster County, New York			
Title: SSDS Installation - Plan View			
Scale: Graphic	Drawn By: O.T. & D.B.	Site No: 356061	Fig.#: 5



Prepared by:

Bellucci Engineering PLLC

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Location:

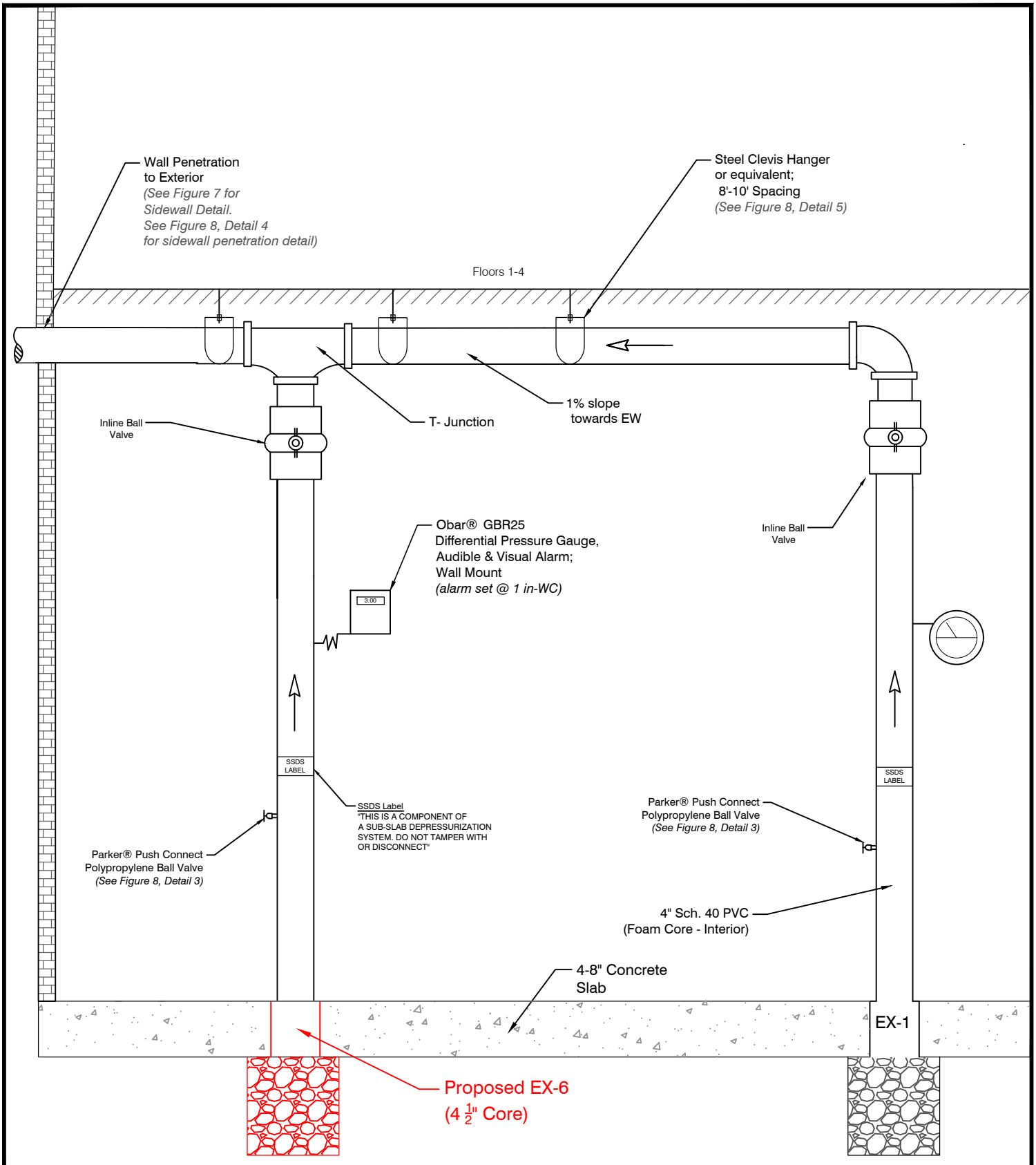
77 Cornell Street
Kingston, New York

Client:

77 Cornell Street LLC

PROCESS FLOW DIAGRAM-EX-2, EX-3 & PROPOSED EX-5

PE/PG	Site Number	Figure
DB	356061	6A
Project Manager: DT	Drafter: DB	



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Location:

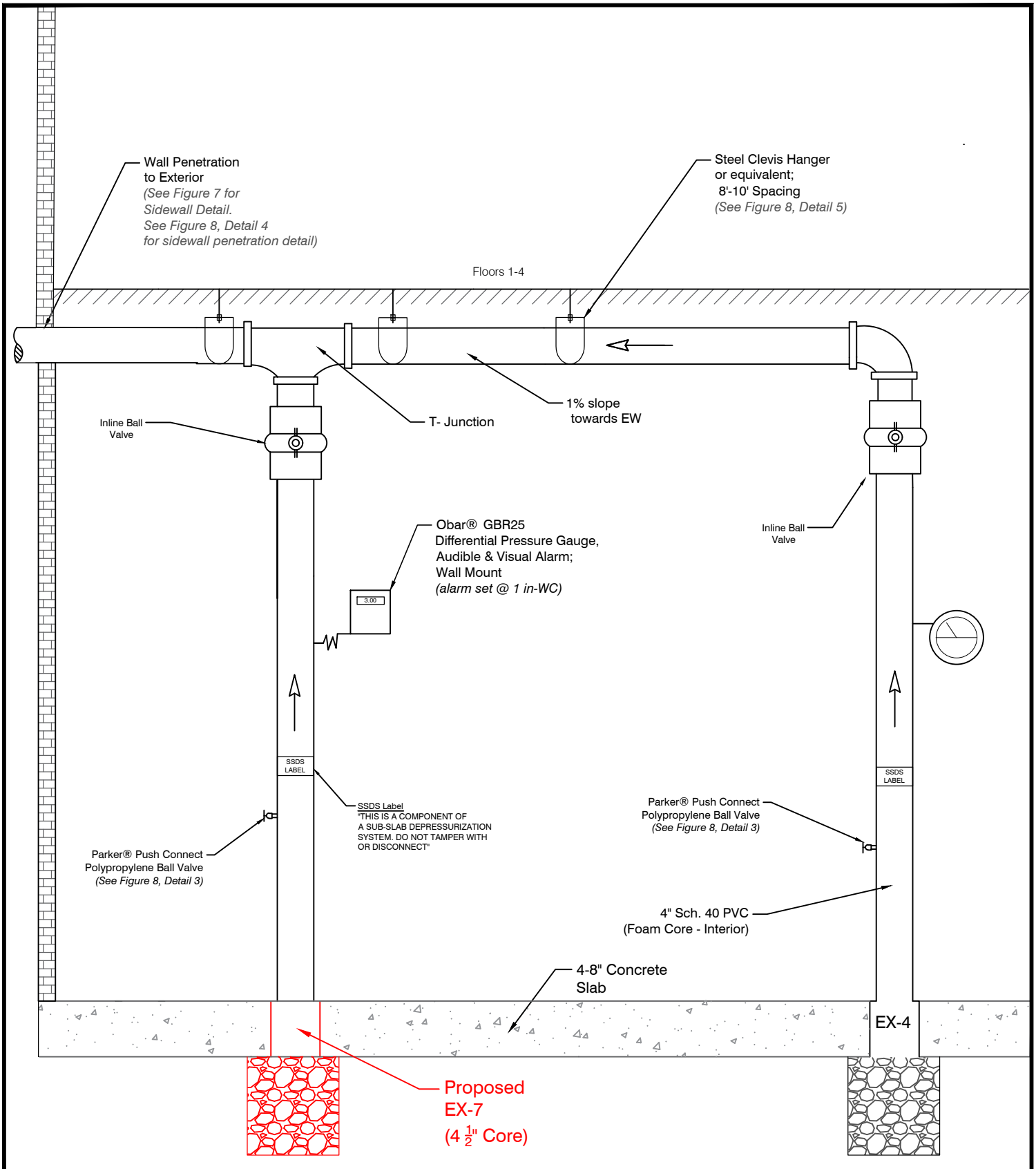
77 Cornell Street
Kingston, New York

Client:

77 Cornell Street LLC

PROCESS FLOW DIAGRAM-EX-1 & PROPOSED EX-6

PE/PG	Site Number	Figure
DB	356061	6B
Project Manager: DT	Drafter: DB	



Prepared by:

Bellucci Engineering PLLC

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Location:

77 Cornell Street
Kingston, New York

Client:

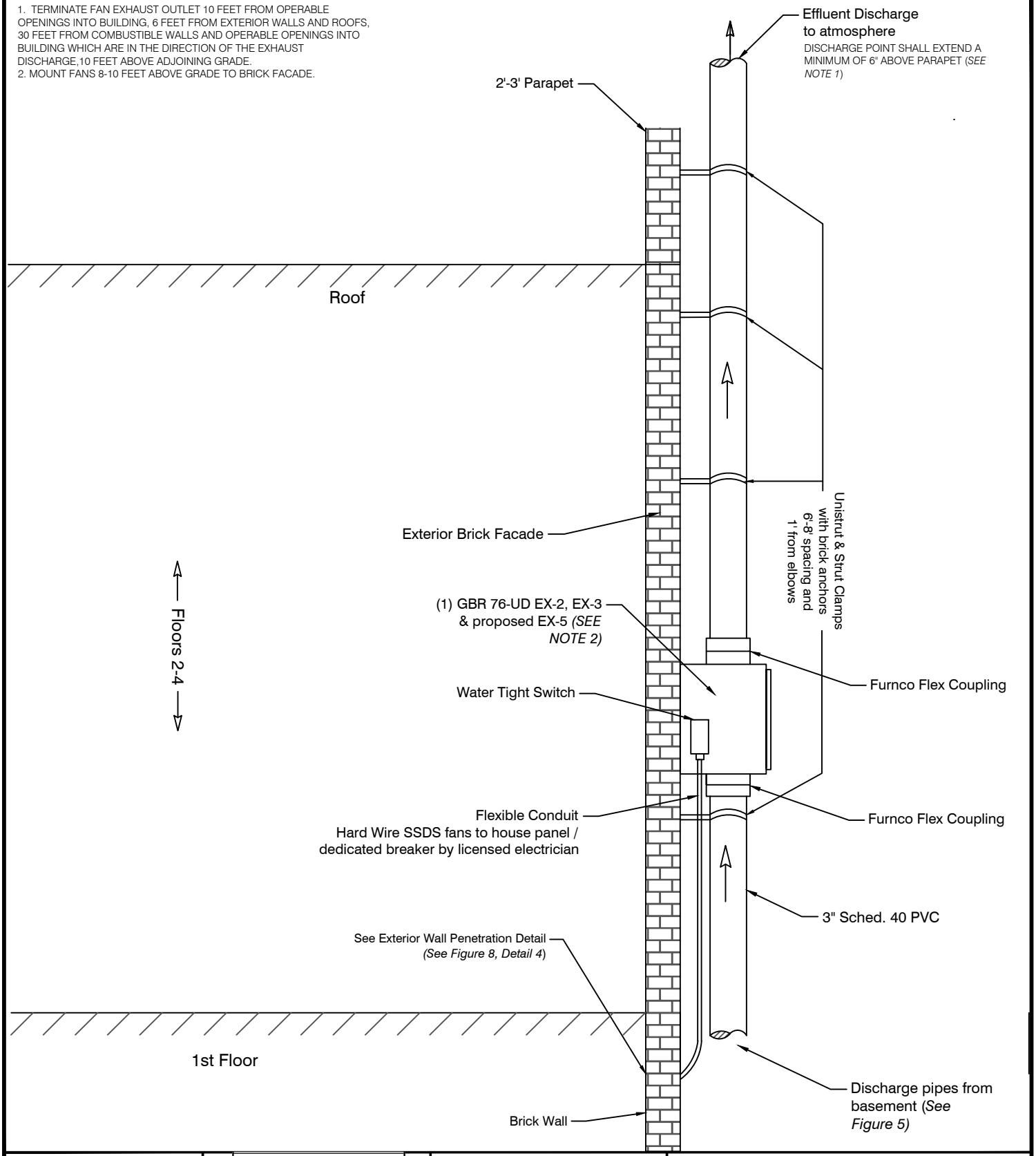
77 Cornell Street LLC

PROCESS FLOW DIAGRAM-EX-4 & PROPOSED EX-7

PE/PG	Site Number	Figure
DB	356061	6C
Project Manager: DT	Drafter: DB	

NOTES:

1. TERMINATE FAN EXHAUST OUTLET 10 FEET FROM OPERABLE OPENINGS INTO BUILDING, 6 FEET FROM EXTERIOR WALLS AND ROOFS, 30 FEET FROM COMBUSTIBLE WALLS AND OPERABLE OPENINGS INTO BUILDING WHICH ARE IN THE DIRECTION OF THE EXHAUST DISCHARGE,10 FEET ABOVE ADJOINING GRADE.
2. MOUNT FANS 8-10 FEET ABOVE GRADE TO BRICK FACADE.



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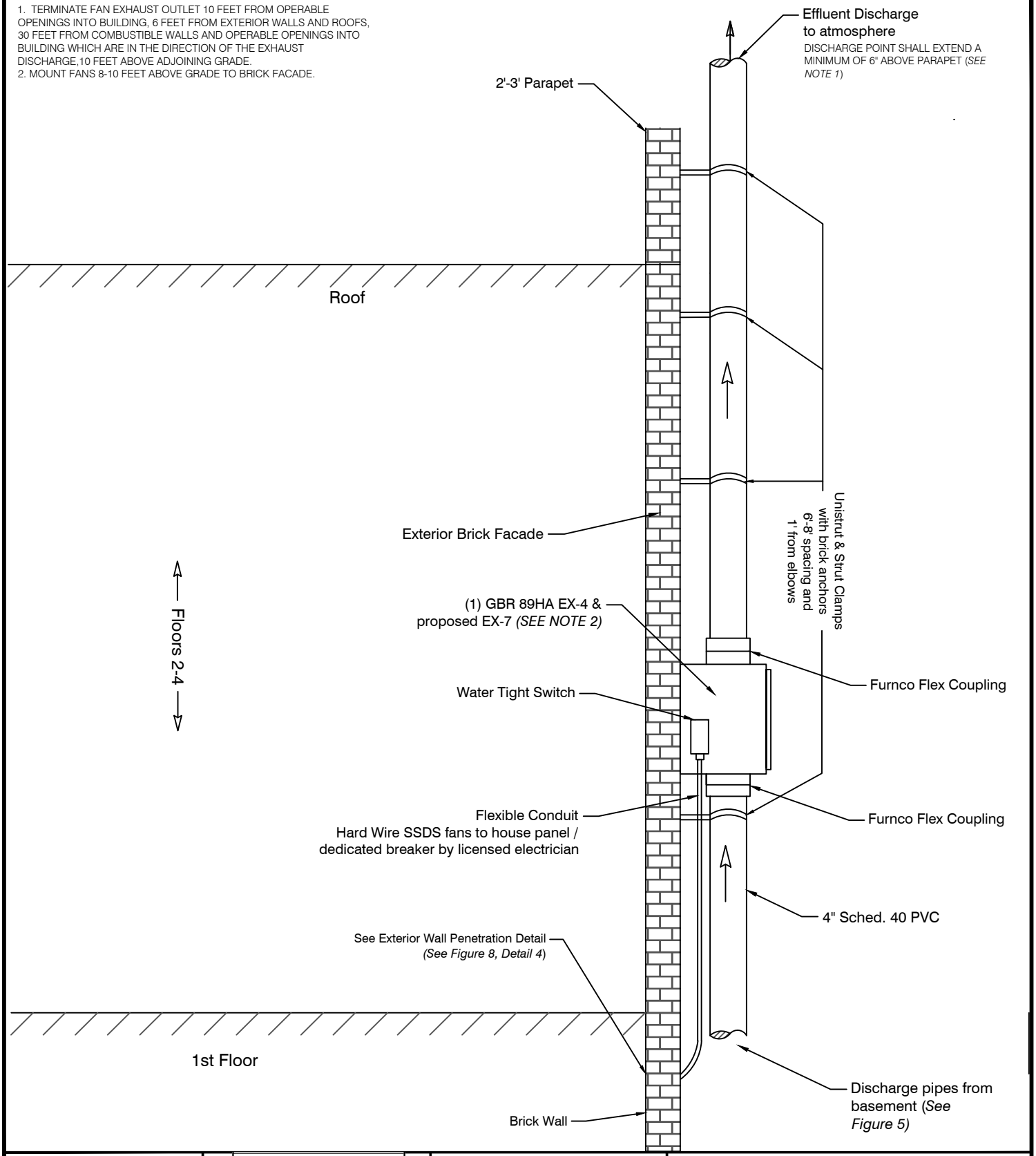
PROCESS FLOW DIAGRAM - SIDEWALL VIEW - EX-2, EX-3 & Proposed EX-5

77 Cornell Street LLC
77 Cornell Street, Kingston, NY

PE/PG	Site Number	Figure
DB	356061	7A
Project Manager	Drafter / Date	
	DB	

NOTES:

1. TERMINATE FAN EXHAUST OUTLET 10 FEET FROM OPERABLE OPENINGS INTO BUILDING, 6 FEET FROM EXTERIOR WALLS AND ROOFS, 30 FEET FROM COMBUSTIBLE WALLS AND OPERABLE OPENINGS INTO BUILDING WHICH ARE IN THE DIRECTION OF THE EXHAUST DISCHARGE,10 FEET ABOVE ADJOINING GRADE.
2. MOUNT FANS 8-10 FEET ABOVE GRADE TO BRICK FACADE.



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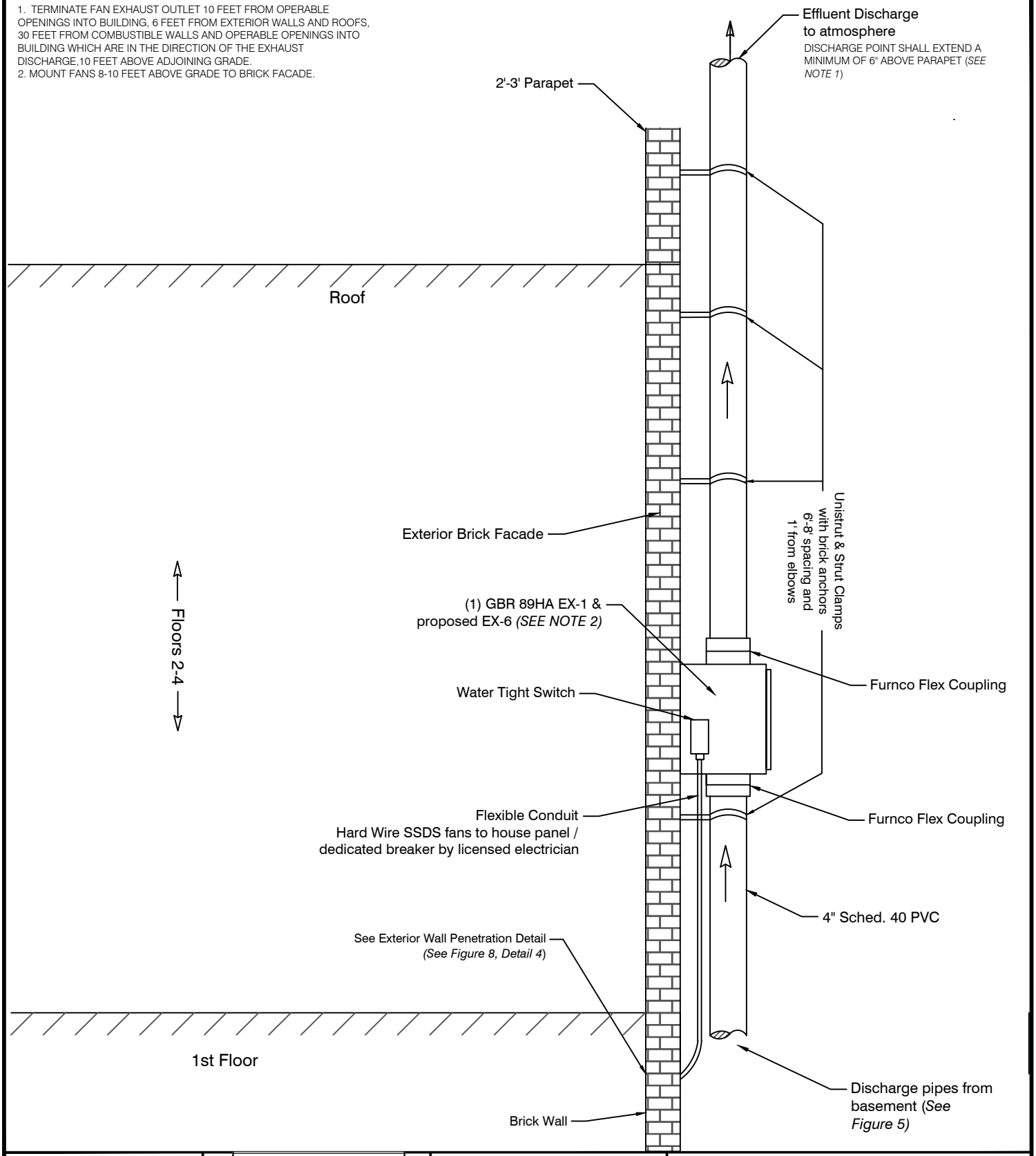
PROCESS FLOW DIAGRAM - SIDEWALL VIEW - EX-4 & Proposed EX-7

77 Cornell Street LLC
77 Cornell Street, Kingston, NY

PE/PG	Site Number	Figure
DB	356061	7B
Project Manager	Drafter	Date
	DB	

NOTES:

1. TERMINATE FAN EXHAUST OUTLET 10 FEET FROM OPERABLE OPENINGS INTO BUILDING, 6 FEET FROM EXTERIOR WALLS AND ROOFS, 30 FEET FROM COMBUSTIBLE WALLS AND OPERABLE OPENINGS INTO BUILDING WHICH ARE IN THE DIRECTION OF THE EXHAUST DISCHARGE,10 FEET ABOVE ADJOINING GRADE.
2. MOUNT FANS 8-10 FEET ABOVE GRADE TO BRICK FACADE.



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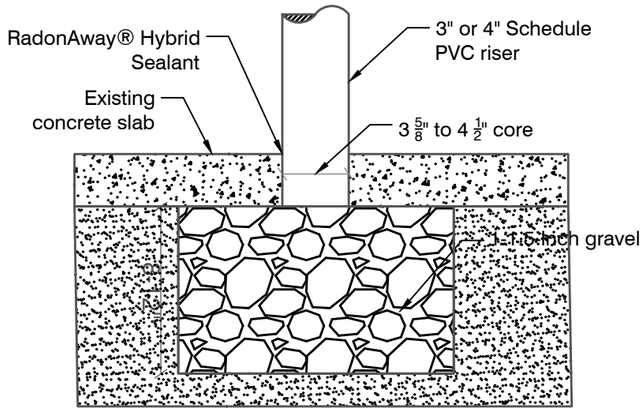
PROCESS FLOW DIAGRAM - SIDEWALL VIEW - EX-1 & Proposed EX-6

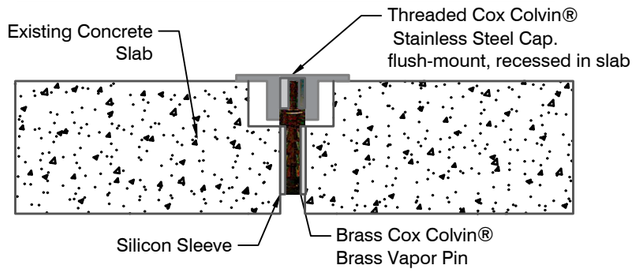
77 Cornell Street LLC
77 Cornell Street, Kingston, NY

PE/PG	Site Number	Figure
DB	356061	7C
Project Manager	Drafter	Date
	DB	

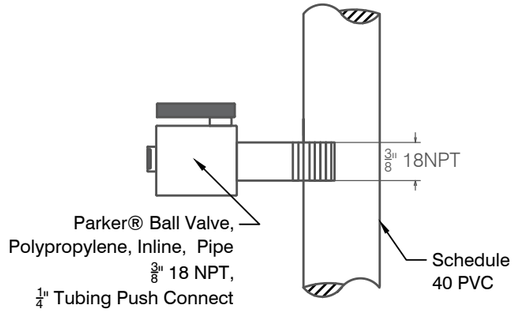
DETAIL 1 - SSDS EXTRACTION WELL DESIGN



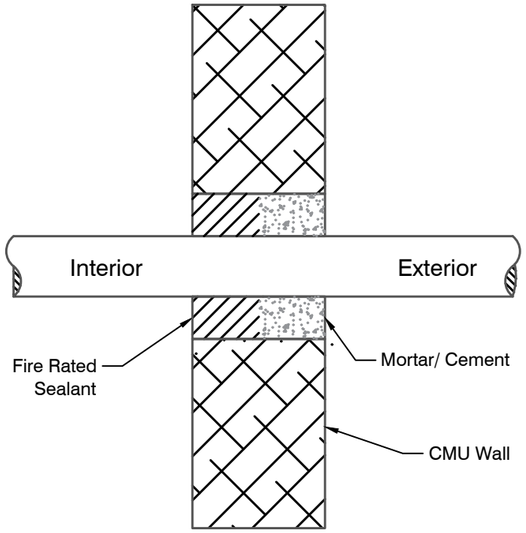
DETAIL 2 - VACUUM MONITORING POINT DESIGN



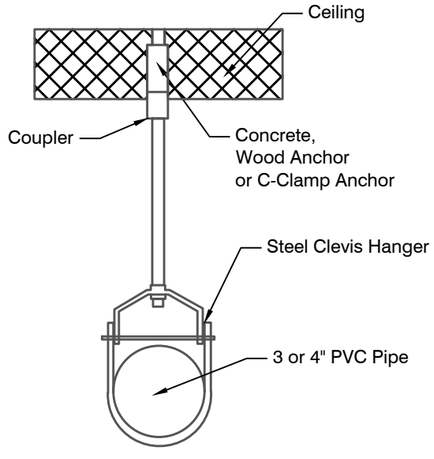
DETAIL 3 - SAMPLE PORT INSTALLATION



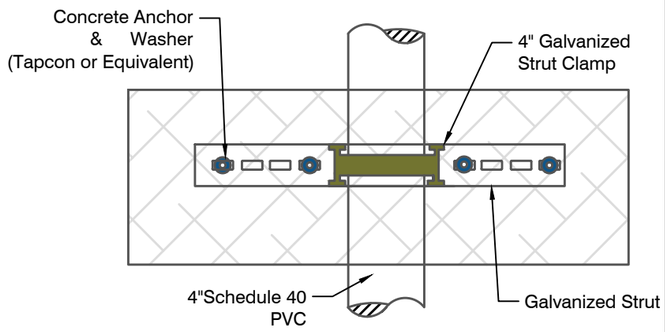
DETAIL 4 - EXTERIOR WALL PIPE PENETRATION



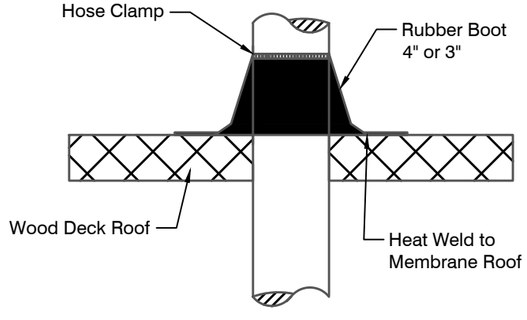
DETAIL 5 - TYPICAL HANGER



DETAIL 6 - EXTERIOR WALL PIPE MOUNTING



DETAIL 7 - ROOF PENETRATION DETAIL



GENERAL INSTALLATION NOTES

1. ALL PVC JOINTS SHALL BE SEALED WITH PLUMBERS CEMENT (OR SIMILAR PRODUCT) TO BE APPLIED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.

2. HORIZONTAL PIPING SHALL BE PITCHED DOWN FROM THE RISER PIPE TOWARDS EXTRACTION WELL AT ~ 1 /8 PER FOOT (1 % SLOPE) TO FACILITATE CONDENSATION DRAINAGE.

3.FANS HARD WIRED BY A CITY OF KINGSTON LICENSED ELECTRICAL CONTRACTOR IN ACCORDANCE WITH CITY OF KINGSTON CONSTRUCTION CODE AND ANY OTHER APPLICABLE CODE AND REGULATIONS UTILIZING A HARDWIRED ELECTRICAL CONNECTION WITH A DEDICATED AND BREAKER FROM HOUSE PANEL. DEDICATED OUTLET FOR AUDIBLE/ VISUAL ALARM TO BE COORDINATED BY ENGINEER W/ ELECTRICIAN.

4. THE ROOFING CONTRACTOR IS RESPONSIBLE FOR WEATHER-TIGHT PROTECTION OF ROOFING AT ALL TIMES DURING THE WORK.

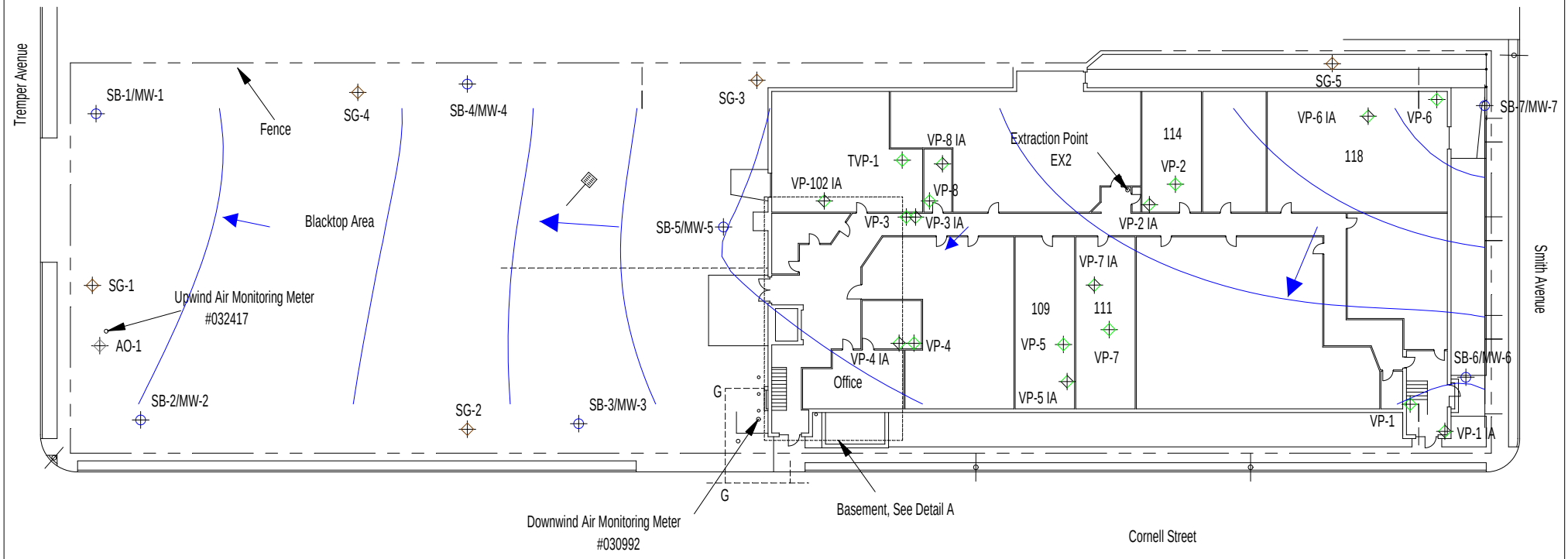
P.E. Certification/ Seal

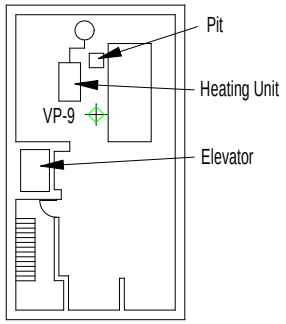
DT Consulting Services, Inc.
&
Bellucci Engineering, PLLC

Installation Details & Notes

Project
77 Cornell Street
Kingston, New York

Site Number			Figure
356061			8
PE/PG	PM	Drafter	
DB	DT	DB	

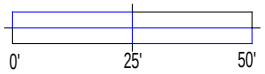


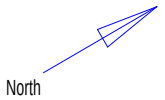


Detail A

Key

- Underground Utilities
- Approx. Property Line
- SB-XX Soil Boring
- SV-XX Soil Vapor Exterior
- VP-XX Vapor Point Interior
- VP-XXIA Vapor Point Indoor Ambient Air
- TVP-XX Future Test Point
- AO-XX Ambient Air Outdoor
- Utility Pole
- Storm Drain





DT Consulting Services, Inc.
1291 Old Post Road
Ulster Park, New York 12487
(845) 658-3484

Client: 77 Cornell Street LLC			
Location: 77 Cornell Street, Kingston, Ulster County, New York			
Title: Groundwater Contour Map for April 6, 2022			
Scale: Graphic	Drawn By: O.T.	Site No: 356061	Fig.#: 9

TABLES

TABLE 1 - EXTRACTION WELL SYSTEM DATA

77 Cornell Street

Kingston, NY

Test #	Pump Well Number	Flow Rate (CFM)	Vacuum (in-Hg)	Vacuum (in-H_2O)	Temp (°F)
Test # 1	**EX-1**	116.6	0.477	6.5	67.4
		107.9	0.477	6.5	67.3
	EX-1[1]	76.8	0.294	4.0	62.0
Test # 3	**EX-2**	34.9	1.175	16.0	67.8
		36.3	1.175	16.0	67.4
	EX-2[1]	19.4	1.178	16.0	64.1
Test # 4	**EX-3**	35.4	1.175	16.0	69.3
		46.3	1.175	16.0	70.4
	EX-3[1]	52.5	1.178	16.0	67.9
Test # 2	**EX-4**	96.0	0.551	7.5	67.7
		100.2	0.514	7.0	67.6
	EX-4[1]	112.7	0.442	6.0	61.8

Notes:

in-Hg = inches of mercury

in-H_2O = Inches of water

CFM = cubic feet per minute

ppmv = parts per million volume

[1] = Vacuum testing data collected 01/13/2023

TABLE 2 -
VACUUM MONITORING POINT DATA
77 Cornell Street
Kingston, NY

Test #	Vacuum Monitoring Points (in-H_2O)								
	VP-1	VP-2	VP-3	VP-4	VP-5	VP-6[1]	VP-7[1]	VP-8[1]	TVP-1[1]
Test #1 (EX-1)	-0.163	0.000	0.000	0.000	0.000	0.000	0.000	NT	NT
	-0.170	0.000	0.000	0.000	0.000	~	~	~	~
Test #3 (EX-2)	0.000	-0.039	0.000	0.000	-0.005	0.000	-0.009	0.000	0.000
	-0.007	-0.037	0.000	0.000	-0.003	~	~	~	~
Test #4 (EX-3)	0.000	0.000	0.000	-0.043	-0.027	NT	-0.018	-0.011	-0.005
	0.000	0.000	0.000	-0.040	-0.034	~	~	~	~
Test #2 (EX-4)	-0.002	-0.015	0.000	0.000	0.000	0.000	0.000	NT	NT
	-0.001	-0.015	0.000	0.000	0.000	~	~	~	~
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	-0.170	-0.039	0.000	-0.043	-0.034	0.000	-0.018	-0.011	-0.005
Average	-0.057	-0.013	0.000	-0.014	-0.012	0.000	-0.009	-0.006	-0.003

Notes:
in-H_2O = Inches of water
Vacuum monitoring point measurements taken with Infiltec DMI Micro Manometer with a detection limit of 0.001 inches of water
[1] = Vacuum testing data collected 01/13/2023
Average vacuum greater than target value of -0.004 in-H_2O
Average vacuum less than target value of -0.004 in-H_2O

TABLE 3
MASS REMOVAL CALCULATIONS -LABORATORY ANALYTICAL DATA
77 Cornell Street
Kingston, NY

Sample Location	Sample Starting Period	Sample Ending Period	Sample Duration (minutes)	Average Flow Rate (CFM)	Temp. (°F)	Temp. (R)	In-Hg	Atm. (Relative)	Atm. (Corrected)	V=nRT/p	lb mole	Volume of Removed Soil Vapor (CF)	PCE (ppmv)	TCE (ppmv)	PCE Mass Removed (lbs)	TCE Mass Removed (lbs)	Total Mass Removed (lbs)
EX-1	10/7/20 12:20 PM	10/7/20 12:40 PM	20	96.7	64.7	524.7	0.386	0.013	0.987	388.1	0.00258	1934	0.00400	0.06800	3.30E-06	4.45E-05	4.78E-05
EX-2	10/7/20 13:50 PM	10/7/20 14:10 PM	20	35.6	67.6	527.6	1.175	0.039	0.961	401.0	0.00249	712	0.00400	0.06800	1.18E-06	1.59E-05	1.70E-05
EX-3	10/7/20 14:20 PM	10/7/20 14:40 PM	20	40.9	69.9	529.9	1.175	0.039	0.961	402.7	0.00248	817	0.00400	0.06800	1.35E-06	1.81E-05	1.95E-05
EX-4	10/7/20 12:40 PM	10/7/20 13:00 PM	20	104.4	64.8	524.8	0.496	0.017	0.983	389.6	0.00257	2087.465	0.00400	0.06800	3.55E-06	4.79E-05	5.14E-05
EX-5 [1]	*10/7/20 12:40 PM*	*10/7/20 13:00 PM*	*20*	*38.2*	*68.7*	*528.7*	*1.175*	*0.039*	*0.961*	*401.9*	*0.00249*	*764.5*	*0.00400*	*0.06800*	*1.26E-06*	*1.70E-05*	*1.83E-05*
EX-6 [1]	*10/7/20 12:40 PM*	*10/7/20 13:00 PM*	*20*	*100.5*	*64.7*	*524.7*	*0.441*	*0.015*	*0.985*	*388.9*	*0.00257*	*2010.63*	*0.00400*	*0.06800*	*3.43E-06*	*4.62E-05*	*4.96E-05*
EX-7 [1]	*10/7/20 12:40 PM*	*10/7/20 13:00 PM*	*20*	*100.5*	*64.7*	*524.7*	*0.441*	*0.015*	*0.985*	*388.9*	*0.00257*	*2010.63*	*0.00400*	*0.06800*	*3.43E-06*	*4.62E-05*	*4.96E-05*
Total			140									10,336			**1.75E-05**	**2.36E-04**	**2.53E-04**
												Mass Removal Rate (lbs/day)					**2.60E-03**

Notes:

V=nRT/p *Where: V = volume of the gas; P = pressure of the gas; n = 1 lb-mole; R = Ideal Gas Constant (0.7302); T = Absolute Temperature (°F+460)*

Mass Removed = [(1 / Volume of gas) x (time elapsed) x (Flow) x (Concentration CVOC) x (molecular weight CVOC)] / $1x10^6$

Molecular weights (g/mole): PCE 165.83, TCE 131.39

CFM = cubic foot per minute

ppmv = parts per million by volume

lbs = pounds

1-in-Hg = 0.033421 atm

EX-5 [1] EX-5 will be installed during system installation. Flow and temp values used are an average of EX-2 & EX-3, located closest to proposed EX-5

EX-6 [1] EX-6 will be installed during system installation. Flow and temp values used are an average of EX-1 & EX-4, located closest to proposed EX-6

EX-7 [1] EX-7 will be installed during system installation. Flow and temp values used are an average of EX-1 & EX-4, located closest to proposed EX-7

TABLE 4
AERSCREEN MODEL INPUT AND OUTPUT DATA
77 Cornell Street
Kingston, NY

Compound	Projected System Flow (CFM)	Average Temp. (°F)	Pilot Test Mass Removed (lbs/Hr)	Maximum 1-Hour Concentration (AERSCREEN Model Output)	ACG	SCG	Exceeds ACG/SCG?
PCE	517	67.1	5.25E-05	0.005346	3.8	300	No
TCE	517	67.1	7.07E-04	0.072004	0.21	20	No

Notes

Projected flow rates based on pilot testing data.

Temperature readings are an average of pilot testing extracted vapor temperatures

Mass removed is based on laboratory analytical data.

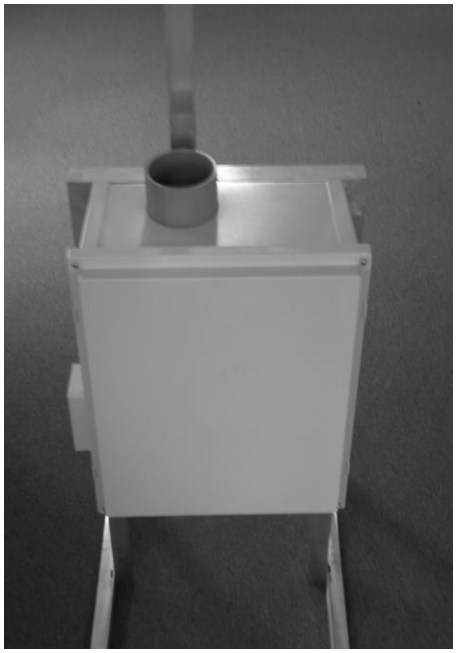
Each pilot test was run for an approximate 20 minute duration. Table 3 includes the projected mass removal during each 20 minute pilot test. Those values were multiplied by 3 for AERSCREEN modeling in lbs/hour.

APPENDIX A
EQUIPMENT & MATERIALS SPECIFICATIONS SHEETS

THE OBAR GBR76

COMPACT RADIAL BLOWER

Based on 25 years of experience and 2 years of research and development, the patent pending GBR series of compact radial blowers provide the perfect combination of performance and design.



GBR76 WITH ROOF MOUNT

PERFORMANCE

- GBR76 SOE 16" WC @ 0 Max flow 155 CFM.
- GBR76 UD 40" WC @ 0 Max flow 195 CFM.
- Built in speed control to customize performance.
- Condensate bypass built in.
- 12 month warranty - 40,000 hr sealed bearings.

DESIGN

- Our modular design means the blower and manifold assembly can be removed and replaced as a unit. This makes repairs cost effective and easy and allows contractors to upgrade systems simply by swapping assemblies.
- The GBR series is based on a bypass blower designed to handle combustible materials.
- The housing is not required to be air tight, so you can add gauges and alarms without compromising the system.
- Built in condensate bypass.
- Built in speed control.
- Quick disconnect electrical harness.
- All UL listed components including UL listed enclosure for outside use.
- Wall fastening lugs included.
- GBR series roof and wall mounts available to quickly configure the blowers for your installation while providing a custom built look.
- Compact design 16"x 14"x 8" weighing only 18 lbs.
- 3" schedule 40 inlet and exhaust.
- Universal Drive model accepts voltage from 120-240V without alteration

COST	GBR76 SOE	GBR76 UD
COMPLETE UNIT	**$1289.00**	**$1489.00**
3 YEAR WARRANTY	**$450.00**	**$550.00**

OBAR SYSTEMS INC 2969 ROUTE 23 SOUTH NEWFOUNDLAND NJ 07435 800 949 6227

GBR76 SOE	0”	2”	4”	6”	8”	10”	12”	16”	Wattage
SOE 16	150	140	129	118	105	90	75	35	150-320
SOE 12	125	115	100	83	62	39	0		110-200
SOE 8	105	90	70	42	0				60-120
SOE 4	75	50	0						37-50

GBR SOE performance using built in potentiometer set at sealed vacuums of 16, 12, 8, and 4” WC

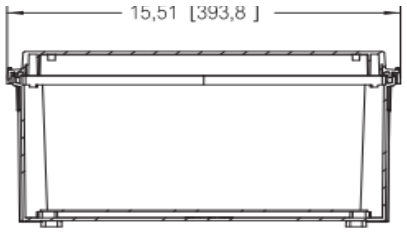
GBR76 UD	0”	10”	20”	30”	37”	Wattage
110V	195	158	118	63	20	700-870
220V	197	162	130	89	50	800-1100

Blower Specifications

Notes:

- **Input Voltage Range:** 108-132 Volts AC RMS, 50/60 Hz, single phase.
- **Input Current:** 6 amps AC RMS
- **Operating Temperature (Ambient Air and Working Air):** 0°C to 50°C
- **Storage Temperature:** -40°C to 85°C
- **Dielectric Testing:** 1500 Volts AC RMS 60 Hz applied for one second between input pins and ground, 3mA leakage maximum.
- **Speed Control Methods:** PWM (Pulse Width Modulation) (1 kHz to 10 kHz)
  0 to 10 VDC speed control.
  Mechanical: A potentiometer is available for speed control of the blower. The potentiometer can be preset for a specific speed. Access for speed adjustment located in motor housing.
- **Approximate Weight:** 4.8 Lbs. / 2.2 Kg
- **Regulatory Agency Certification:** Underwriters Laboratories Inc. UL507 Recognized under File E94403 and compliant under the CE Low Voltage Directive 2006/95/EC.
- **Design Features:** Designed to provide variable airflow for low NOx & CO emission in high efficiency gas fired combustion systems. Built with non-sparking materials. Blower housing assembly constructed of die cast aluminum. Impeller constructed from hardened aluminum. Rubber isolation mounts built into blower construction to dampen vibration within the motor. Two piece blower housing assembly sealed with O-ring gasket for combustion applications. Customer is responsible to check for any leakage once the blower is installed into the final application.
- **Miscellaneous:** Blower inlet, discharge, and all motor cooling inlet and discharge vents must not be obstructed. Motor ventilation air to be free of oils and other foreign particles, (i.e. breathing quality air). Blower is to be mounted so ventilation air cannot be re-circulated.
  POWER CONNECTION: Blower connector, AMP Universal MATE-N-LOK, part no. 1-350943-0.
  SPEED CONNECTION: Blower connector, Molex Mini-Fit Jr., part no. 39-30-3056.
  Mating harnesses available upon request.

Enclosure Specifications



Screw cover

Ratings:

Ingress Protection (EN 60529): 66/67

Electrical insulation: Totally insulated

Halogen free (DIN/VDE 0472, Part 815): yes

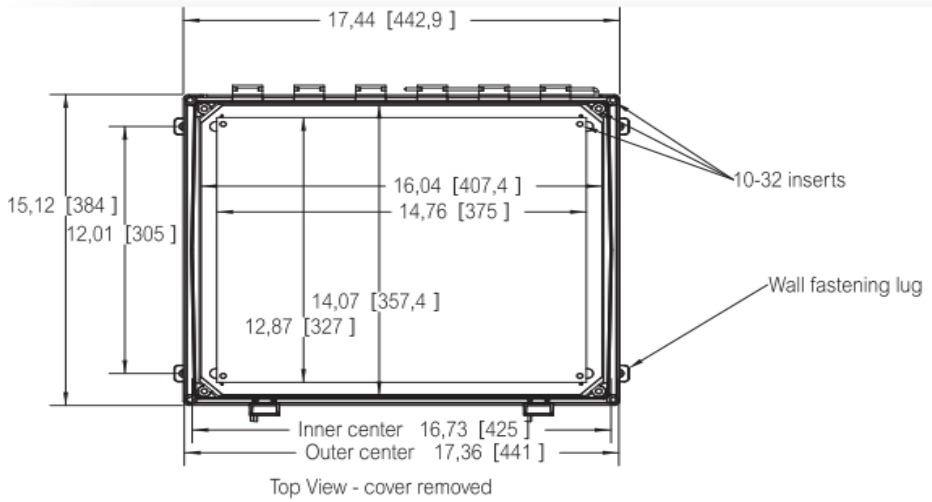
UV resistance: UL 508

Flammability Rating (UL 746 C 5): complies with UL 508

Glow Wire Test (IEC 695-2-1) °C: 960

NEMA Class: UL Type 4, 4X, 6, 6P, 12 and 13

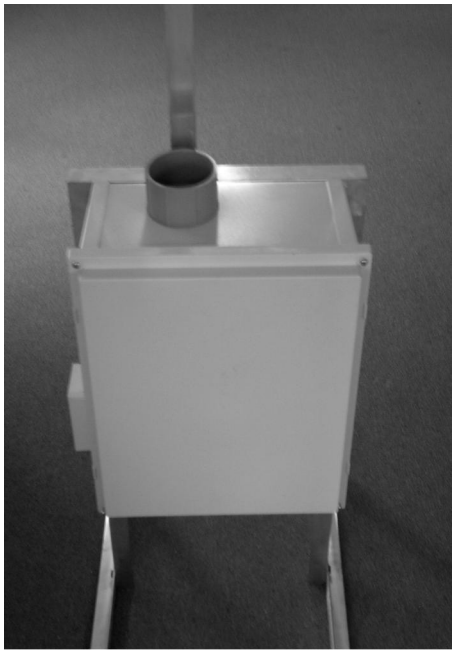
Certificates: Underwriters Laboratories



Top View - cover removed

THE OBAR GBR89
COMPACT RADIAL BLOWER

Based on 25 years of experience and 2 years of research and development, the patent pending GBR series of compact radial blowers provide the perfect combination of performance and design.



GBR89 WITH ROOF MOUNT

PERFORMANCE

- GBR89 HA 14" WC at 100CFM max flow 500 CFM.
- Built in speed control to customize performance.
- Condensate bypass built in.
- 12 month warranty 40,000 hr sealed bearings.

DESIGN

- Our modular design means the blower and manifold assembly can be removed and replaced as a unit. This makes repairs cost effective and easy and allows contractors to upgrade systems simply by swapping assemblies.
- The GBR series is based on a bypass blower designed to handle combustible materials.
- The housing is not required to be air tight so you can add gauges and alarms without compromising the system.
- Built in condensate bypass.
- Built in speed control.
- Quick disconnect electrical harness.
- All UL listed components including UL listed enclosure for outside use.
- Wall fastening lugs included.
- GBR series roof and wall mounts available to quickly configure the blowers for your installation while providing a custom built look.
- Compact design 18"x 16"x 10" weighing only 18 lbs.
- 4" schedule 40 inlet and 6" schedule 40 exhaust.

1. COST	**GBR89 HA**
COMPLETE UNIT	**$1,789.00**
3 YEAR WARRANTY	**$650.00**

Enclosure Specifications

Rating:

Ingress Protection (EN 60529): 66/67

Electrical insulation: Totally insulated

Halogen free (DIN/VDE 0472, Part 815): yes

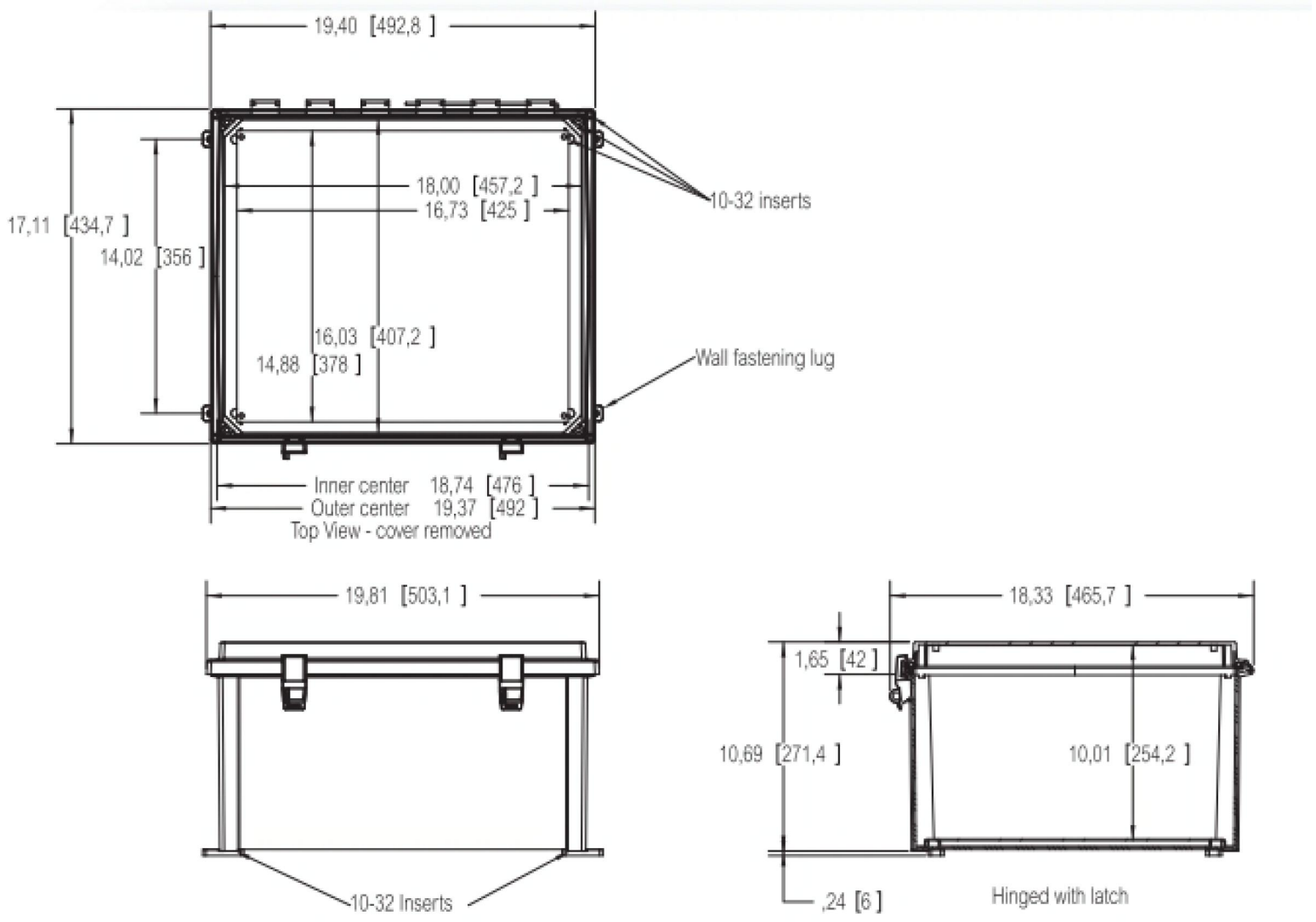
UV resistance: UL 508

Flammability Rating (UL 746 C 5): complies with UL 508

Glow Wire Test (IEC 695-2-1) °C: 960

NEMA Class: UL Type 4, 4X, 6, 6P, 12 and 13

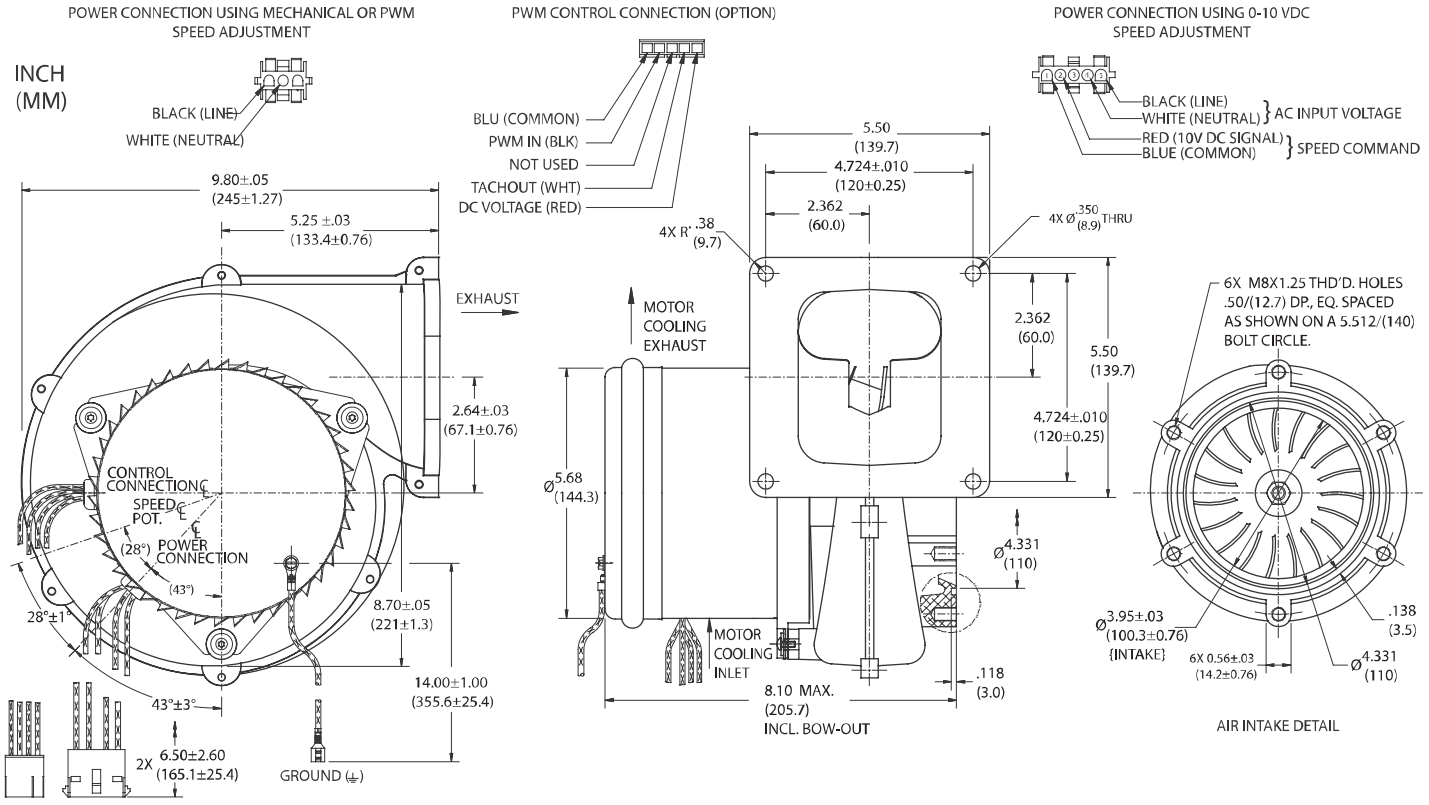
Certificates: Underwriters Laboratories



High Voltage Brushless DC Blowers

Nautilair (TM) 8.9" (226mm) Variable Speed Blower

240 Volt AC Input, Single Phase, High Output



		Part/ Model Number		
Specification	Units	150240	150241	150242
Speed Control	-	Mechanical	0-10 VDC	PWM

Notes:

- **Input Voltage Range:** 216 - 264 Volts AC RMS, 50/60 Hz, single phase.
- **Input Current:** 10 amps AC RMS
- **Operating Temperature (Ambient Air and Working Air):** 0°C to 50°C
- **Storage Temperature:** -40°C to 85°C
- **Dielectric Testing:** 1800 Volts AC RMS 60 Hz applied for one second between input pins and ground, 3mA leakage maximum.
- **Speed Control Methods:** PWM (Pulse Width Modulation). Speed control input signal of 15 - 45 VDC @ 500 Hz - 10 kHz, and tachometer output (2 Pulses / Revolution).
  Optional tachometer output (3 Pulses / Revolution).
  0 to 10 VDC with a speed control input current of 5 mA to 20 mA at 10 VDC Input with multi-turn potentiometer set to minimum resistance (fully clockwise).
  Mechanical: A potentiometer is available for speed control of the blower. The potentiometer can be preset for a specific speed. Access for speed adjustment located in motor housing.
  4-20mA speed control available.
- **Approximate Weight:** 9.3 Lbs. / 4.2 Kg.
- **Option Card available for Customization**
- **Regulatory Agency Certification:** Underwriters Laboratories Inc. UL507 Recognized under File E94403 and CSA C22.2#133 under File LR43448
- **Design Features:** Designed to provide variable airflow for low NOx & CO emission in high efficiency gas fired combustion systems. Built with non-sparking materials. Blower housing assembly constructed of die cast aluminum. Impeller constructed from hardened aluminum. Rubber isolation mounts built into blower construction to dampen vibration within the motor. Two piece blower housing assembly sealed with O-ring gasket for combustion applications. Customer is responsible to check for any leakage once the blower is installed into the final application.
- **Miscellaneous:** Blower inlet, discharge, and all motor cooling inlet and discharge vents must not be obstructed. Motor ventilation air to be free of oils and other foreign particles, (i.e. breathing quality air). Blower is to be mounted so ventilation air cannot be re-circulated.
  POWER CONNECTION (3 CAVITY): Blower connector, AMP Universal MATE-N-LOK, part no. 1-480701-0.
  POWER CONNECTION (5 CAVITY): Blower connector, AMP Universal MATE-N-LOK, part no. 350810-1.
  SPEED CONNECTION (5 CAVITY): Blower connector, Molex Mini-Fit Jr., part no. 39-01-4057.
  Mating harnesses available upon request.

AMETEK TECHNICAL & INDUSTRIAL PRODUCTS
627 Lake Street, Kent OH 44240
USA: +1 215-256-6601 - Europe: +44 (0) 845 366 9664 - Asia: +86 21 5763 1258
www.ametektip.com

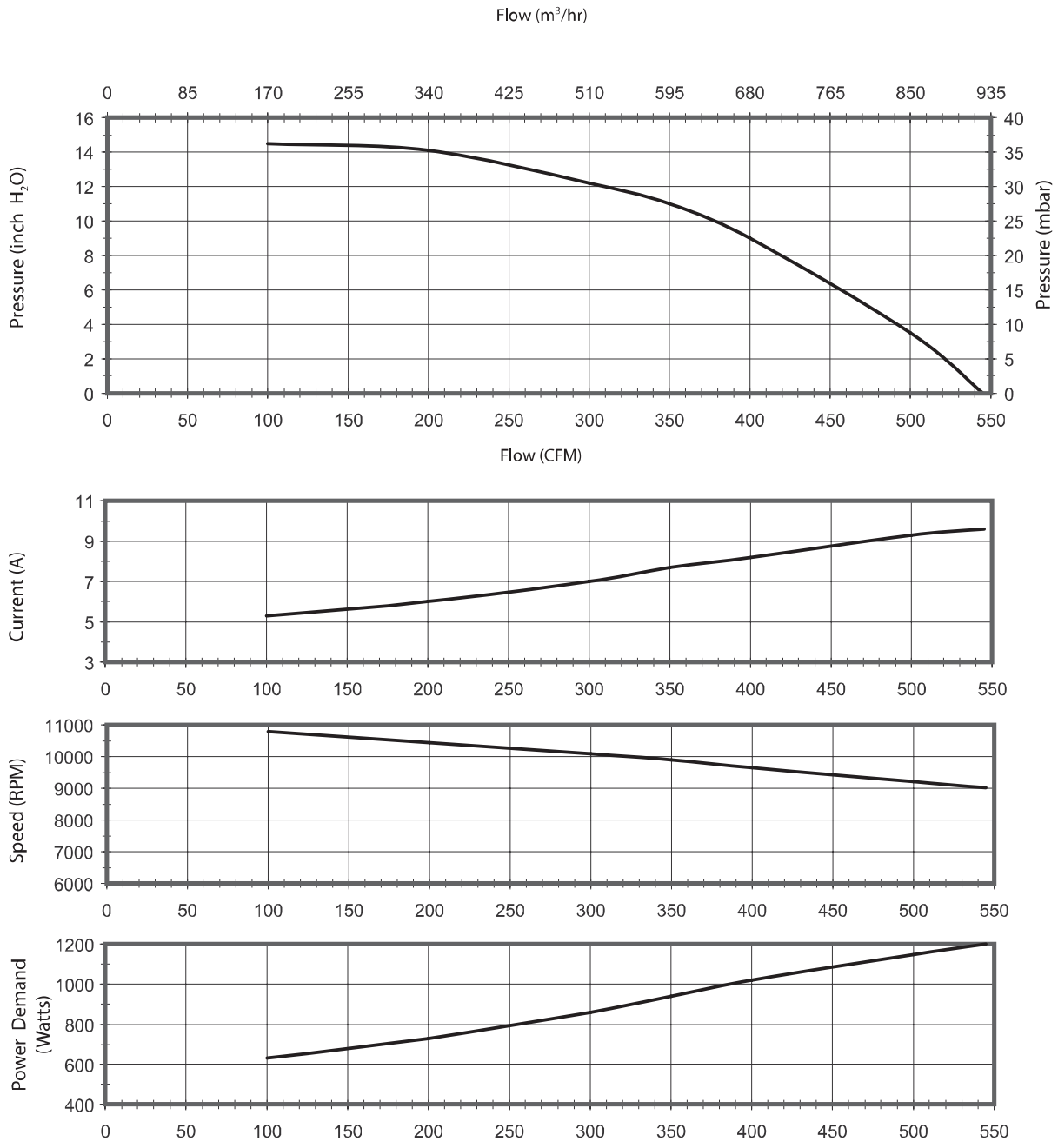
AMETEK
PRECISION MOTION CONTROL

Nautilair (TM) 8.9" (226mm) Variable Speed Blower

Nautilair

240 Volt AC Input, Single Phase, High Output

Typical Performance



Data presented represents blower performance at STANDARD AIR DENSITY, .075 lb/ft³ (29.92" Hg, Sea Level, 68° F)
Vacuum performance available upon request.

AMETEK TECHNICAL & INDUSTRIAL PRODUCTS
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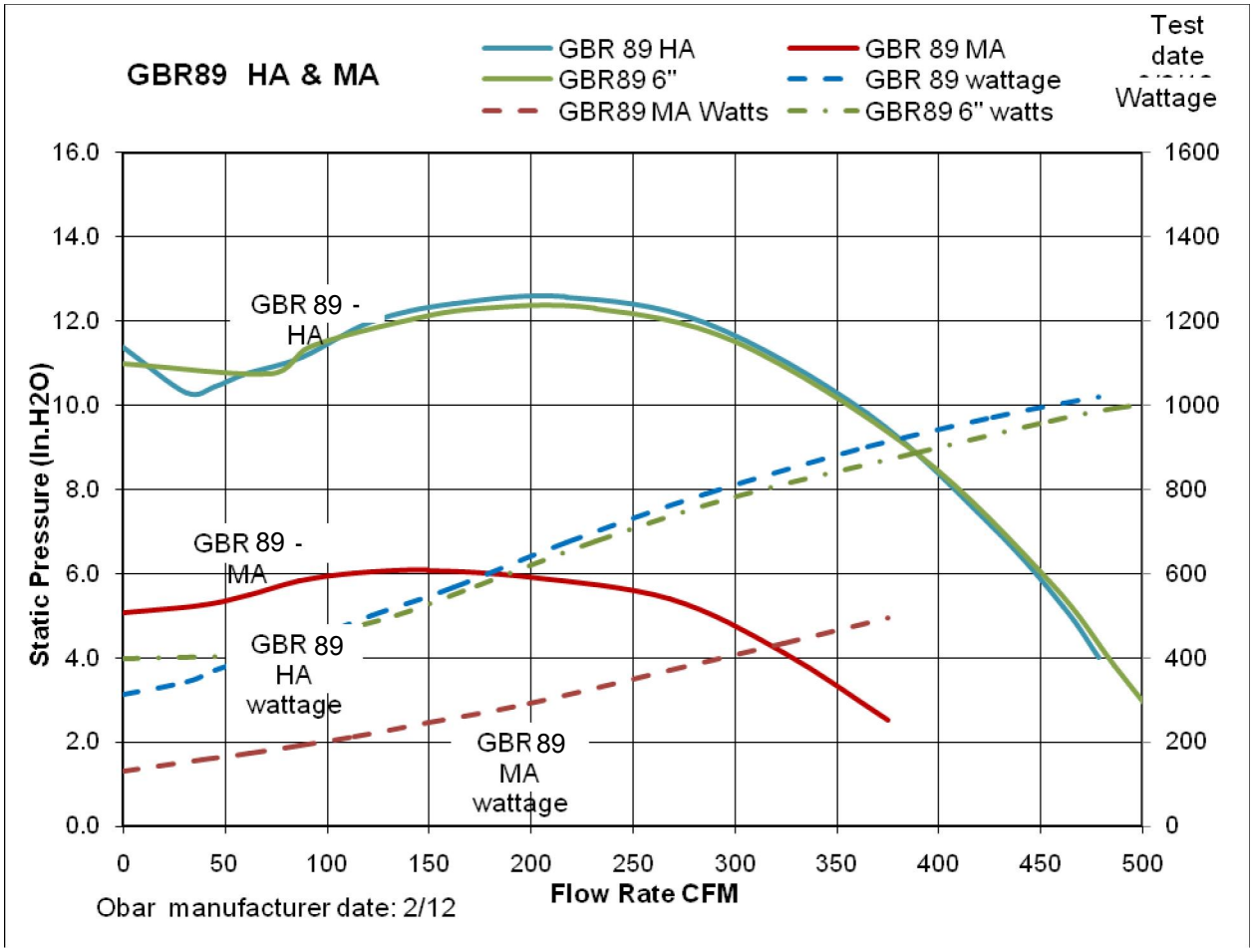
www.ametektip.com

AMETEK
PRECISION MOTION CONTROL

GBR89 HA tested at full voltage with 8 feet of 4" inlet (Blue Lines) and 6" Inlet (Green lines)

Maximum airflow with no exhaust piping and 8' of 6" piping is 529 CFM

GBR89 MA tested with speed control set to half the wattage consumption (Red Line)



GBR 25 Mini Digital Differential Pressure Gauge With Alarm

System alarms and monitoring made simple and affordable.

Finally a product that has what you need and can be easily installed.
The GBR 25 is a compact stand alone system gauge with an audible and visual alarm that works for VOC and Radon systems operating at system pressures greater than 2" wc. Included is a second relay that can be used to trigger additional alarms.
Includes Power supply
Optional 4-20 MA or 0-10 outputs can be used to monitor system pressure.

Contact OBAR for a quote to build custom alarm panels for your needs.

Applications and features

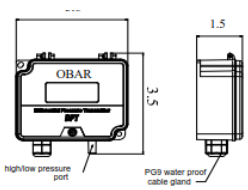
- Scale 0-40 inches WC eliminates need for multiple gauges.
- Visual and audible alarm included and factory set at 1" WC The alarm set point can be changed in the field.
- Second adjustable relay for triggering additional alarms.
- Optional 4-20 MA or 0-10 output for data.
- Accuracy is up to ±1% FS, with large LCD display.
- Function keys: zero reset, units select, display update time, automatic sleep time, alarm, etc.

Specifications

Medium: Non-combustible, non-corrosive air, insensitive to moisture, dust, condensation and oil
Working Temp.: 20~70°C
Medium Temp.: 0~60°C
Temp. Compensation: 0~50°C
Working Pressure: overload 10xFS, burst 15xFS
Display: 5 bits LCD, with engineering unit & backlight
Output: 0-10V / 4-20mA (3 wires)
Output load: ≤500Ω (current), ≥2KΩ (voltage)
Relay Output: 2×SPST, 3A/30VDC, 3A/250VAC or 1xBuzzer
Accuracy: up to ±1.0%FS(±2.0%FS@25Pa range)
Long term stability: ±0.5%FS /Year
Thermal effect: <0.05%FS/°C (zero), <0.08%FS/°C(FS)
Power type 16~28VDC/AC
24V Power Supply included
Process Connection: 5mm ID tubing, two pairs (left/back)
Keys: 3 touch buttons
Protection: IP54
Approval: CE
Display update time: selectable for 0.5/1/5/10s (default 1s)

Other OBAR products you may be interested in.

DPT(DPT-F Flush Mount) Differential Pressure Transmitter



Pricing: $125 per unit

Add $20 for 4-20 mA / 0-10V version

Custom options and bulk order pricing available. Call or email for details.

OBAR Systems, Inc. **800-949-OBAR** **wholesale@obarsystems.com**

Cutlist:

1 1/2"-3/16" Angle

2 pcs. - 16" long sq. ends
2 pcs. - 12" sq. ends
1 pc. - 10 1/2" sq. ends

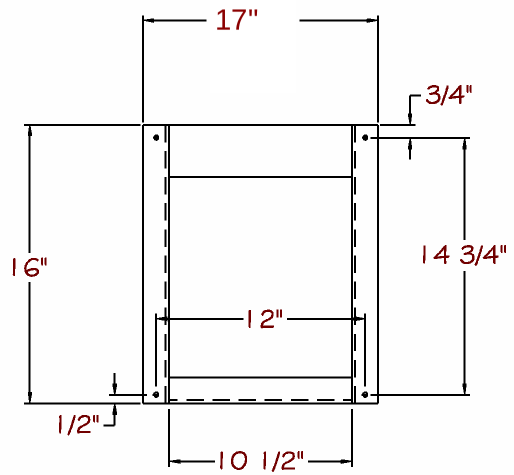
1/4" x 2" FS

4 pcs. - 7 1/4" long

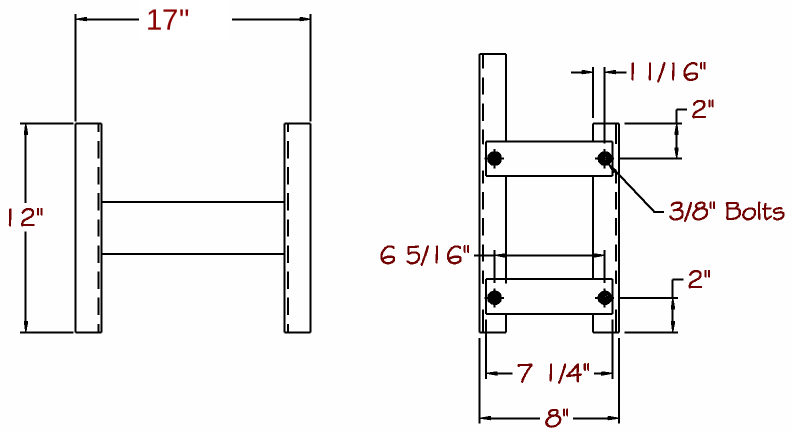
3/16" x 3" FS

2 pcs. - 10 1/2" long

Front Box Mtg. Frame



Rear Wall Mtg. Frame



NOTES:

11/27/11
Revision 1

MATERIALS:
6061 Aluminum

FINISH:
Painted Finish

APPROVAL:

APPROV. FOR PRINTS:	REV.	DATE:	REQ'D:	BY:	DESCRIPTION:

Detail of:
Alum. Frame - Fan Box
Free Standing Unit

Project Name & Location:

Contractor:
OBAR Systems

Architect:

Architect's Drawing Reference:

AWS D1.1 Certified

File Name: Obar_Systems_2011.dwg
DRAWN by: Jim Stanlick
CHECKED:
UNLESS OTHERWISE SPECIFIED:
LINEAR TOLERANCES +/- 1/16"
ANGULAR TOLERANCES +/- 1 °

PRECISION WELDING
"Quality Metal Fabricators"
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Wharton, NJ 07885
(973) 214-1065
(973) 695-1308 eFax
www.precweld.com

Roll over image to zoom.

Product Image Feedback

PARKER

Ball Valve, Polypropylene, Inline, 2-Piece, Pipe Size 3/8 in, Tube Size 1/4 in

Item # **5UMX8**
Mfr. Model # **LFPP4VMC6**
UNSPSC # **40142613**
Catalog Page # **N/A**

Country of Origin USA. Country of Origin is subject to change.

This ball valve features polypropylene construction. Polypropylene is a durable and flexible thermoplastic polymer. Polypropylene valves are often lightweight and easy to install, and are also resistant to corrosion.

Compare this product

Technical Specs

Item	Ball Valve
Body Material	Polypropylene
Body Style	Inline
General Connection Type	Male NPT
Valve Structure	2-Piece
Pipe Size	3/8 in
Tube Size	1/4 in
Connection Type	MNPT x Push
Port	Full
Max. Pressure	150 psi CWP
Temp. Range	35 Degrees to 200 Degrees F
Ball Material	Polysulfone

Seat Material	EPDM
Stem Type	1-Piece Stem
Handle Type	Lever
Handle Material	Nylon
Stem Material	Polysulfone
Body Seal Material	EPDM
Features	Self-Cleaning
Ball Valve Product Group	Manual
Valve Basic Body Material	Plastic
Standards	FDA and RoHS Compliant, NSF-51 and 61 Certified
Overall Length	2.4 in

Roll over image to zoom.

Product Image Feedback

DWYER

Differential Pressure Gauge: 15 to 0 to 15 in wc, Dual Single-Side or Back, 1/8 in NPT Female

Item # 1W465
UNSPSC # 41112403
Mfr. Model # 2330
Catalog Page # 575

Country of Origin USA. Country of Origin is subject to change.

Compare this product

Technical Specs

Item	Differential Pressure Gauge
Process Connection Gender	Female
Process Connection Location	Dual Side or Back
Process Connection Size	1/8 in
Process Connection Type	NPT
Hazardous Location Rating	Not Rated
Nominal Dial Size	4 in
Accuracy	+/-2.0%
Maximum Working Static Pressure	80 psig
Pressure Range	15 to 0 to 15 in wc
Series	2000 Magnehelic, Magnehelic
Sensor Material	Silicone Rubber
Pressure Gauge Type	Differential Pressure Gauge
Gauge Case Material	Aluminum
IP/NEMA Rating	IP67
Compatible Process Media	Cleanroom
Rated Total Pressure	-20 in Hg to 15 psi
Application	Clean Rooms, Fan Pressure Indication, Filtration Monitoring, Flow Measurement, HVAC/R, Vacuum Applications
Accuracy Details	+/-2% (-HA model +/-1) of FS, +/-3% (-HA +/-1.5%) on -0, -100PA, -125PA, -10MM, +/-4% (-HA +/-2%) on -00, -60PA, -6MM ranges throughout range at 70 Degrees F (21.1 Degrees C).
Adjustable Set Points	No
Ambient Operating Temperature Range	20 Degrees to 140 Degrees F
Bezel Material	Die Cast Aluminum
Bezel Mounting Type	Flush
Blowout Safety Back	Yes
Bolt Circle Diameter	4.125 in

Case Color	Gray
Case Construction	Corrosion Resistant
Case Depth	1.687 in
Case Diameter	4.75 in
Case Finish	Die Cast
Case Shape	Round
Dial Color	White
Dial Face Material	Plastic
Housing Material	Die Cast Aluminum
Includes	Instructions, Three Mounting Adapters with Screws, Two 1/8 in NPT Plugs, Two 1/8 in NPT to 3/16 in ID Rubber Tubing Adapters
Includes Calibration Certificate	No
Includes Mounting Hardware	Yes
Includes Vent Plug	Yes
Manufacturer Warranty Length	5 yr
Mounting Hardware Included	Flange
Mounting Orientation	Upright Only
Mounting Type	Flush-Mount
Non-Sparking	No
Over-Pressure Limit	1.72 bar
Panel Mount Characteristics	3 L Dia Holes on E Dia Bolt Circle
Panel-Mountable	Yes
Pointer Characteristics	Red Tipped Pointer of Heat Treated Aluminum Tubing is easy to see
Pointer Material	Aluminum
Removable Bezel	No
Sensor Type	Diaphragm
Standards	EU Directive 2011/65/EU (RoHS II)

Technical Specs Feedback

APPENDIX B
COMMUNITY AIR MONITORING PLAN

Community Air Monitoring Plan

Job Name/Site Number: 77 Cornell Street, Kingston NY /356061

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared by Bellucci Engineering to support the implementation of the Interim Remedial Measure (IRM) activity associated with the Sub-Slab Depressurization System or SSDS installation at the Subject Property located at 77 Cornell Street in Kingston, Ulster County, New York. A Site Plan is provided as Figure 1. Details related to this IRM activity is presented in the SSDS Design Document, Bellucci Engineering, PLLC dated January 2023, to which this CAMP is included as an attachment and as a supporting plan. This CAMP fulfills the routine monitoring requirements provided in the New York State Department of Environmental Conservation (NYSDEC) document entitled Division of Environmental Remediation *Technical Guidance for Site Investigation and Remediation* (DER-10) issued on May 3, 2010. Appendix 1A of DER-10 provides general guidance and protocols for the preparation and implementation of a CAMP. Appendix 1B of DER-10 supplements the contents of Appendix 1A of DER-10 and provides additional requirements for fugitive dust/particulate monitoring. Special requirements have also been deemed necessary by the NYSDEC and New York State Department of Health (NYSDOH) as work will be conducted within 20 feet of potentially exposed individuals or structures. A copy of these CAMP requirements (as outlined in DER-10) has been placed in Attachment A for reference. This CAMP identifies the required air monitoring to protect on-Site workers and the community during the implementation of proposed investigative activities. Note that all IRM remedial activities will be performed inside the Site structure during times when the tenanted spaces are unoccupied.

1.1 CAMP Objectives

The overall objective of the CAMP is to establish requirements for protection measures from potential airborne releases of constituents of concern during intrusive and/or potential dust generating Site activities. As summarized in the SSDS Design Document, laboratory analysis indicates that constituents of concern at the Site include volatile organic compounds (VOCs). This CAMP identifies potential air emissions, and describes air monitoring procedures, the monitoring schedule, data collection, and reporting requirements for the mitigation actions to be completed by the environmental team. Bellucci Engineering and DT Consulting Services, Inc. will implement this CAMP and will provide all labor, materials, and equipment necessary to implement the monitoring program specified in this CAMP, as well as any required contractor worker documentation and monitoring described in the Environmental Health and Safety Plan prepared for the implementation of the

project.

1.2 Revisions to the CAMP

Any changes to the scope or procedures in this CAMP will be formally documented as a revision to this document. A revision number will be indicated on the front page of any revised document and will serve as a historical record of any and all revisions made to the document. For changes requiring immediate resolution during the implementation of this CAMP, approval will be secured from the NYSDEC and, if applicable, the Responsible Party.

1.3 Potential Air Emissions Related to Remedial Activities

Intrusive Sub-Slab Depressurization (SSDS) remedial activities have the potential to generate localized impacts to air quality. Remedial construction components that are considered intrusive for the purposes of this CAMP and that have the potential to generate air emissions are anticipated to include, but may not be limited to the following:

- ✓ Installation of SSDS;
- ✓ Installation and pilot testing of additional extraction wells, vacuum monitoring points ;
- ✓ Soil vapor/soil gas sampling.

2.0 AIR QUALITY MONITORING AND ACTION LEVELS

Air monitoring will be conducted in accordance with a CAMP and is designed to protect the community and the onsite workers.

2.1 Monitoring During Site Operations

Prior to commencement of planned remedial activities the following will be conducted:

- Background readings will be obtained with a photoionization detector (PID) for VOCs in parts per million (ppm). Any unusual background readings will be discussed with NYSDEC/NYSDOH prior to commencement of work;

As deemed necessary, the use of engineering controls including but not limited to special ventilation, the employment of granular activated carbon (GAC) to polish soil vapor extracted during pilot testing procedures prior to external atmospheric discharge, and vapor/dust barriers will be utilized during the performance of the SSDS installation(s).

During Site work involving disturbance of fill and/or native soil, real time air monitoring will be conducted for VOCs. A PID will be used to monitor concentrations of VOCs at personnel breathing-zone height. Dust/particulate monitoring will be accomplished with an aerosol monitor. Air monitoring will be the responsibility of the HSO or designee. Air monitoring will be conducted continuously during ground intrusive activities in the work zone on the project Site. All manufacturers' instructions for instrumentation and calibration will be available on-Site.

2.1.1 Volatile Organic Compounds

Monitoring with a PID, such as a MiniRAE 2000 (10.6v) or equivalent will occur continuously during the execution of the IRM work plan. Colormetric Indicator Tubes for tetrachloroethylene (i.e Draeger® tubes) may be used as backup for the PID, if measurements remain above background monitor every 2 hours. Instrumentation action levels to be utilized are as follows:

Action Levels for Organic Vapors

Instrument	**Action Level**	**Action Required**
Outdoor Action Levels		
PID	Background to 5 ppm	No further action required.
	> 5 ppm for > 5 minutes	1. Temporarily discontinue all activities and evaluate potential causes of the excessive readings. If these levels persist and cannot be mitigated (i.e., by slowing drilling or excavation activities), contact HSO to review conditions and determine source and appropriate response action. 2. If PID readings remain above 5 ppm, temporarily discontinue work. 3. If sustained PID readings fall below 1 ppm, no

		further action required.
	> 5 ppm but < 150 ppm for > 5 minutes	1. Discontinue all work; all workers shall move outside of the work zone. 2. Evaluate potential causes of the excessive readings and allow work area to vent until VOC concentrations fall below 5 ppm.
	> 30 ppm (steady state condition) within work zone	Stop Work / Suppress Emissions / Evacuate and re-evaluate.
	> 150 ppm	Evacuate the work zone
Special Requirements for Work Within 20 Feet of Potentially Exposure Individuals or Structures		
	> 1 ppm above background. Opposite the walls of occupied structures or next to intake vents. Collect background readings within adjacent occupied spaces prior to commencement of planned work.	Monitoring will be performed within the occupied (tenanted) space, the nearest potentially exposed individuals and in the location of ventilation intakes for nearby structures. Response actions may include but are not limited to: 1. Cessation of onsite work until source of VOCs is determined; 2. Use of engineering control (i.e. exhaust fan(s), vapor barriers) within exclusion zone; 3. Deployment of Air Purifying Units

In accordance with the Special Requirements for Work Withing 20-feet of Potentially Exposed Individuals or Structures, all ground intrusive and piping work conducted within will be during off business hour when the tenants are not present. Non-intrusive work such as system diagnostic testing and sampling may be conducted during business hours while the spaces are occupied. These activities do not result in fugitive dust of VOC emissions to indoor air.

Notes:

1. 1 ppm level based on OSHA Permissible Exposure Limit (PEL) for benzene.
2. 5 ppm level based on OSHA Short Term Exposure Limit (STEL) maximum exposure for vinyl chloride for any 15 minute period.
3. 150 ppm level based on NIOSH Immediately Dangerous to Life and Health (IDLH) for tetrachloroethylene.

2.1.2 Fugitive Dust and Particulate Monitoring

During invasive procedures which have the potential for creating airborne dust,

such as excavation of dry soils, a real time airborne dust monitor such as a Mini-Ram must be used to monitor for air particulates. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities. The HSO will continuously monitor for particulates during all ground intrusive activities. Instrument action levels to be utilized for dust monitoring are as follows:

Action Levels for Particulates

Instrument	**Action Level**	**Level of Protection/Action Required**
Outdoor Action Levels		
Total Dust Aerosol Monitor	> 0.100 mg/m^3 above BKD (steady state condition) at work zone for 15-minutes or visible dust.	Stop Work/Implement dust control. Continue dust monitoring if dust levels are less than 150 mg/m^3.
	< 0.150 mg/m^3 above BKD (following dust suppression measures).	Stop Work/implement dust control, continue work once levels are <150 mg/m^3.
Special Requirements for Work Within 20 Feet of Potentially Exposure Individuals or Structures		
	> 0.150 mg/m^3 Opposite the walls of occupied structures or next to intake vents.	Work activities will be suspended until controls are implemented and are successful in reducing the total particulate concentration to 0.150 mg/m^3 or less at the monitoring point.

2.2 Periodic Monitoring for Odors

During work hours, hourly or more frequent walks around the perimeter of the work area will be performed to qualitatively monitor for the presence and intensity of Site-related odors. Perimeter checks will be performed more

frequently, as necessary, depending on the nature and location of work being performed. If odors are noted at the perimeter of the work area, work will continue and odor, vapor, and dust controls will be employed to abate emissions. Additionally, construction techniques will be evaluated and modified, if necessary and appropriate, and more frequent checks of the perimeter of the work area will be performed. If odors persist at the perimeter of the work area at an unacceptable intensity, work will be stopped while activities are re-evaluated. The source or cause of the odors will be identified and additional odor, vapor, and dust controls will be employed. Work will resume provided that the controls are successful in mitigating the intensity of odors at the perimeter of the work area.

2.3 Instrument Calibration

Calibration of the VOC and PM-10, instrumentation will be conducted in accordance with each of the equipment manufacturer's calibration and quality assurance requirements. The VOC and PM-10 monitoring equipment will be calibrated or zeroed, respectively, daily (at a minimum), and such calibrations will be recorded in the field logbook.

3.0 MONITORING SCHEDULE/DATA COLLECTION/REPORTING

The following identifies the monitoring schedule and data collection/reporting requirements.

3.1 Monitoring Schedule

Air monitoring will be conducted prior to initiating remedial Site activities to establish adequate baseline data and until such time that intrusive and/or potential dust generating activities are complete. The frequency of construction air monitoring will be relative to the level of Site work activities being conducted and may be adjusted as the work proceeds and in consideration of the monitoring results. VOC and particulate monitoring will be conducted continuously during all ground-intrusive work.

3.2 Data Collection and Reporting

Results of the air monitoring for total organic vapors and particulates (both instantaneous readings and 15-minute average concentrations) will be

recorded by the on-Site HSO or designee. Upon executing the approved IRM, a CAMP report will be generated to include, but not be limited to, the following:

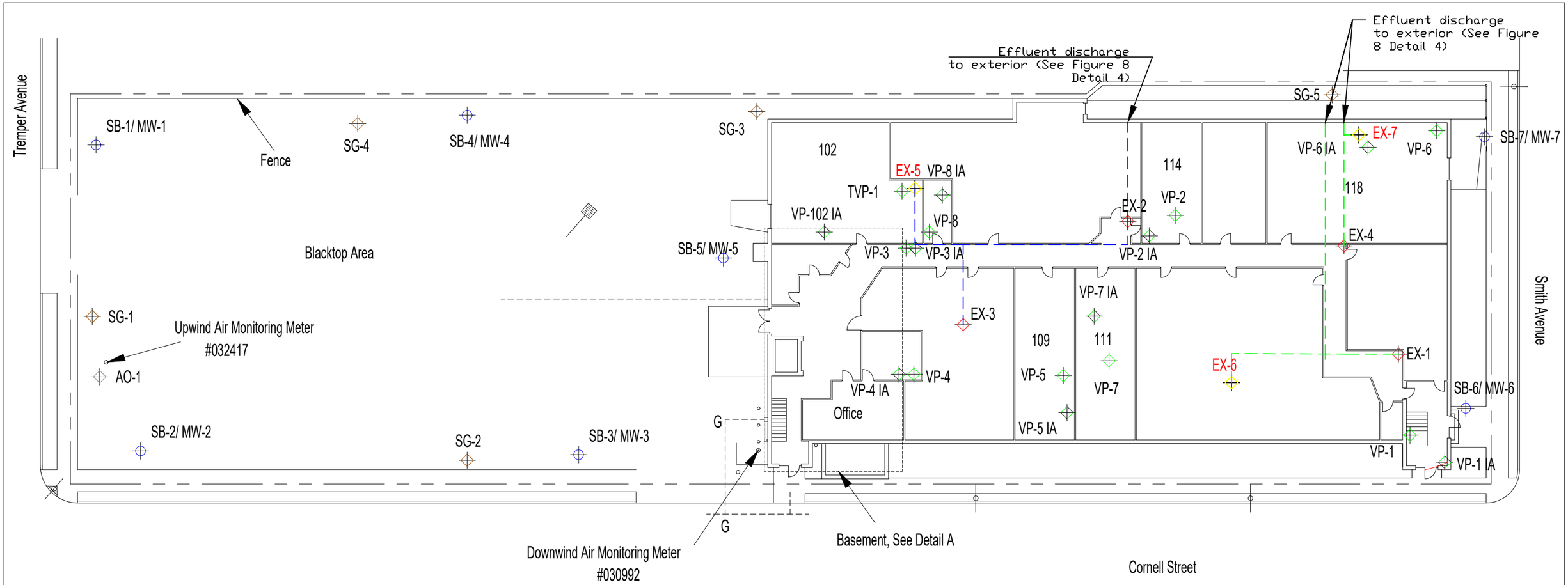
- A brief memorandum summarizing the air monitoring work activities and results for the monitoring period. A summary of the qualitative monitoring for the presence and intensity of Site-related odors will also be included.

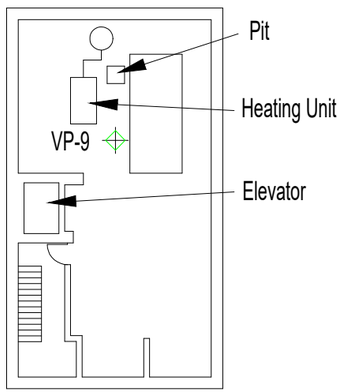
In the event that an exceedance of an air monitoring action level (for either VOCs or PM-10), the HSO or designee will notify DEC (via telephone) as soon as possible (i.e., real time). Within 24 hours of the observed exceedance, the HSO or designee will send a follow-up e-mail to DEC's representative, and the Responsible Party summarizing the data, the cause of the exceedance, and any corrective measures implemented (or to be implemented) as a result of the exceedance. The information will also be documented in the CAMP report. Odor complaints received from the public will be evaluated and verified based on the following:

- Date and time of complaint;
- Location and nature of work activities being performed at the Site;
- Location and nature of non-project-related work activities being performed in the surrounding community; and
- Prevailing wind direction and other local meteorological conditions.

Regardless of the outcome of this evaluation, all associated parties will be notified of odor complaints within 24 hours. In response to a verified odor complaint, perimeter monitoring will continue and additional odor, vapor, and dust controls will be employed to mitigate Site-related odor emissions. Construction techniques will also be evaluated and modified, if necessary and appropriate.

FIGURES





Detail A

Key

- Underground Utilities
- Approx. Property Line
- SB-XX Soil Boring/ Permanent Monitoring Well
- SV-XX Soil Vapor Exterior
- VP-XX Vapor Point Interior
- VP-XXIA Vapor Point Indoor Ambient Air
- TVP-XX Future Test Point
- AO-XX Ambient Air Outdoor
- Utility Pole
- Storm Drain
- EX-XX SSDS Extraction Well
- Proposed SSDS Extraction Well
- Pipe Run (3" Sch. 40) EX-2, EX-3 & EX-5
- Pipe Run (4" Sch. 40) EX-1, EX-4, EX-6 & EX-7

0' 25' 50'

North

DT Consulting Services, Inc.
&
Bellucci Engineering, PLLC

Client:	77 Cornell Street LLC		
Location:	77 Cornell Street, Kingston, Ulster County, New York		
Title:	SSDS Installation - Plan View		
Scale: Graphic	Drawn By: O.T. & D.B.	Site No: 356061	Fig.#: 5

ATTACHMENTS

DT CONSULTING SERVICES, INC.

ATTACHMENT A

NYSDEC DER-10 TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION (DER-10) MAY 3, 2010.

APPENDIX 1A OF DER-10

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

APPENDIX 1B OF DER-10

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

<u>Special Requirements for Indoor Work With Co-Located Residences or Facilities</u>

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under “Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures” except that in this instance “nearby/occupied structures” would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

APPENDIX C
HEALTH & SAFETY PLAN

Environmental Services Health & Safety Plan

Job Name: 77 Cornell Street, Kingston, New York
Site #: 356061

1.0 INTRODUCTION

DT Consulting Services, Inc. (DTCS) has designed a safety and health program to provide its employees and subcontractors with the guidelines necessary to ensure their own safety and health as well as that of the surrounding community. The goal of this plan is to minimize the risk of injury during the installation of the proposed Sub-slab Depressurization Systems (SSDSs) on-Site.

2.0 ORGANIZATIONAL STRUCTURE

2.1 SAFETY AND HEALTH MANAGER

It is the responsibility of the safety and health manager to develop the comprehensive safety and health plan. The safety and health manager will be appraised of any changes in the comprehensive safety and health plan as well as all Site-specific procedural determinations. The safety and health manager for this project will be Ms. Deborah Thompson.

2.1.1 RESPONSIBILITIES

a) Initial Site evaluation
b) Hazard identification
c) Determination of appropriate protection levels
d) Conduct daily safety and health meetings
e) Supervision of Site sampling and monitoring
f) Supervision of decontamination procedures
g) Designate work zones to maintain Site integrity

3.0 PERSONAL PROTECTIVE EQUIPMENT

The proper personal protective equipment is chosen by the Site safety and health officer in consultation with the safety and health manager. The level of protection is dependent on the hazards that are likely to be encountered on-Site.

3.1 PROTECTION LEVELS

DTCS utilizes four levels of protection as set forth in the OSHA guidelines, Appendix B of 1910.120.

3.1.1 Level A

Level A provides the greatest level of skin, respiratory, and eye protection with the following minimum equipment:

- Full face, self-contained breathing apparatus (SCBA) or supplied air with escape SCBA
- Fully encapsulated chemical resistant suit
- Chemical resistant boots
- Chemical resistant inner and outer gloves

3.1.2 Level B

Level B provides the greatest level of respiratory protection, but a lower level of skin protection than Level A with the following minimum equipment:

- Full face SCBA or supplied air with escape SCBA
- Chemical resistant clothing
- Chemical resistant inner and out gloves
- Chemical resistant boots

3.1.3 Level C

Level C provides the same level of skin protection as Level B, but a lower level of respiratory protection with the following minimum equipment:

- Full face piece air purifying respirator with appropriate cartridge. Cartridges are chosen based on knowledge of hazardous material
- Chemical resistant clothing
- Chemical resistant inner and outer gloves
- Chemical resistant boots

3.1.4 Level D

Level D provides the lowest level of skin protection and no respiratory protection with the following minimum equipment:

- Coveralls
- Safety boots
- Gloves
- Safety glasses or splash goggles

4.0 WORK ZONES

DTCS utilizes the standard three-zone approach to Site control. These zones are the exclusion zone, the contamination reduction zone and the support zone. Movement of personnel and equipment through these zones shall be strictly regulated in order to prevent contamination of clean environments and to protect workers in the support zone from possible exposure.

4.1 EXCLUSION ZONE

The exclusion zone is the area of highest contamination. All personnel entering this zone must wear the appropriate level of protection as prescribed in the Site specific safety plan. The outer boundary of the exclusion zone, referred to as the Hotline, shall be determined based upon such considerations as; extent of surface contamination, safe distance in the case of fire or explosion, physical area necessary for workers to conduct operations in a safe manner and safe distance in the event of vapor or gas emissions. Upon determination, the Hotline shall be visibly marked and secured to prevent accidental entry by unauthorized personnel.

4.2 CONTAMINATION REDUCTION ZONE

The Contamination Reduction Zone is the area between the exclusion zone and the support zone. Its purpose it to protect the clean environment from contamination as workers enter and exit the exclusion zone. The outer boundary of this zone is referred to as the Coldline and shall be clearly marked. Decontamination stations shall be set up in this zone in a line known as the contamination reduction corridor. All personnel exiting the exclusion zone must follow the steps as prescribed in the decontamination procedures prior to re-entering the support zone.

4.3 SUPPORT ZONE

The support zone is the area furthest away from the exclusion zone. It is considered a clean, non-contaminated area where workers need not wear any protective equipment. The command post, equipment trailer, first aid station and lavatory facilities are all located in this area. This area is not, however, open to traffic. Only authorized personnel may enter.

5.0 AIR MONITORING

As the initial Site evaluation work plan entails minimal Site intrusive activities, specific air monitoring procedures would include only the periodic recording of total volatile organic compound or VOC concentrations with a Photoionization Detector (PID) or equivalent during Site activities.

6.0 SITE COMMUNICATIONS

Various methods of communication will be employed based upon Site conditions and work zones. Regardless of method of communication, personnel working in the exclusion zone will remain within constant view of support crews.

DTCS has a network of devices to aid in communications. All or some of the following devices may be used depending upon job Site requirements; hand held radios, headset transistor walkie-talkies and cellular telephones.

The following hand signals shall be standardized for use in emergencies and in event of radio communication breakdown.

Hand gripping throat - out of air, can't breathe
Grip partner's wrist - leave area immediately
Hands on top of head - need assistance
Thumbs up - I am all right, okay
Thumbs down - no, negative

Horn blasts may be used to gain the immediate attention of crews to indicate that dangerous conditions exist.

7.0 EMERGENCY PROCEDURES

The following procedures shall be followed by all Site personnel in the event of an emergency. Any changes to this procedure shall be noted in the Site-specific plan. In all situations where there has been an evacuation of exclusion zone, reentry shall not be permitted until the following conditions have been met; the cause of the emergency has been determined and corrected, the Site hazards have been reassessed, the safety plan has been reviewed and all personnel have been apprised of any changes.

7.1 INJURY IN THE EXCLUSION ZONE

In the event of an injury in the exclusion zone, the emergency signal shall be sounded. All personnel in the exclusion zone will assemble at the contamination reduction corridor. First aid procedures will begin on-Site and if necessary, an ambulance will be called. No personnel will be allowed to re-enter the exclusion zone until the exact nature and cause of the injury has been determined.

7.2 INJURY IN THE SUPPORT ZONE

In the event of an injury in the support zone, on-Site first aid procedures will begin immediately and an ambulance called if necessary. The Site safety and health officer shall determine if the nature and cause of the injury or loss of the injured person will jeopardize the smooth running of the operations. If so, the emergency signal will be sounded and all personnel will follow the same procedure as outline above.

7.3 FIRE OR EXPLOSION

In the event of fire or explosion, the emergency signal shall be sounded and all personnel will assemble at the contamination reduction corridor. The fire department will be called and all personnel will be evacuated to a safe distance.

7.4 PROTECTIVE EQUIPMENT FAILURE

In the event of protective equipment failure, the affected worker and his/her buddy will leave the exclusion zone immediately. In the event of any other equipment failure, the Site safety and health officer will determine if this failure affects the operation. If so, the emergency signal will be sounded and all personnel will leave the exclusion zone until such time as it is deemed safe.

8.0 STANDARD SAFETY PRACTICES

The following guidelines will be followed by all personnel at all times; any changes must be approved by the safety and health manager.

- All employees will attend the daily safety meetings prior to Site entry.

- The buddy system will be utilized at all times.

- There will be no eating, drinking, smoking, or use of smoking material (i.e. matches) within the work area(s).

- Only authorized personnel will be allowed in designated work zones and will wear the proper personal protective clothing and equipment as prescribed in the Site safety plan.

- The Site safety and health officer will be appraised of any unusual circumstances immediately.

Such circumstances include but are not limited to the following; unusual odors, emissions, signs of chemical reaction, and discovery of conditions or substances not mentioned in the Site safety plan. The Site safety officer will then determine if these conditions warrant a shut down of operations.

9.0 DAILY SAFETY MEETINGS

Daily safety meetings will be conducted by the Site safety and health officer prior to commencement of work. All personnel, regardless of job classification are required to attend.

9.1 DISCUSSIONS

1. Overview of safety and health plan.

2. Detailed discussion of substances of concern with emphasis on exposure limits, exposure symptoms and exposure hazards.

3. Review of standard safety precautions and work practices.

4. Review of work plan.

5. Review of hand signals and emergency signals.

Personnel will sign a daily attendance sheet, which shall include an overview of the topics discussed.

10.0 SITE SPECIFIC PLAN

10.1 DETAILED SITE INFORMATION

- **Plan Date** TBA
- **Job Name** 77 Cornell Street
- **Client** 77 Cornell Street LLC
- **Client Contact** Hagai Barlev
- **Site Address** 77 Cornell Street
  Kingston, New York 12401
- **Cross Street** Smith Street
- **Site Access** Direct

10.2 CONTAMINANTS ON SITE/ACTION LEVELS

The following substances are known or suspected to be on Site, primarily in Site wastes. The primary hazards of each are identified, associated primarily with direct skin contact and inhalation.

SUBSTANCE	PRIMARY HAZARDS
Volatile Organics	
Trichloroethene (TCE) Tetrachloroethene (PCE)	Eye, skin and respiratory irritation. Nausea, vomiting, headache
Cis-1,2-Dichloroethylene	Skin irritation, gastrointestinal or respiratory tract irritation.
Methylene chloride	Acute affects - central nervous system, or neurotoxicity

Action Levels

Action levels shall be determined by monitoring of work zone breathing space with a portable Photoionization detector (PID) or comparable instrument. Measurement of a sustained concentration above ambient (background) conditions shall initiate action. The following criteria shall be used to determine appropriate action:

VOCs in Breathing Zone (sustained and above	Level of Respiratory Protection

background)	
0 – 5 ppm	Level D
5 – 200 ppm	Level C
200 – 1000 ppm	Level B - air line
1000+ ppm	Level B - SCBA

If the above criteria indicate the need to increase from Level D to a higher level of personal protection, all work in that particular Site area will be immediately suspended until the required protective equipment is make available, or until Level D conditions return.

10.3 EMERGENCY INFORMATION

10.3.1 EMERGENCY RESPONDERS

10.3.1.1 HOSPITAL

Name: Kingston Hospital

Address & Telephone Number:
396 Broadway, Kingston, NY 12401
(845) 331-3131

Distance from Site: 0.5 Miles

10.3.1.2 EMERGENCY TELEPHONE NUMBERS

Police 911 on Cellular Phone
Fire 911 on Cellular Phone
Ambulance 911 on Cellular Phone

10.3.1.3 REGULATORY AGENCIES

EPA Telephone Number 1-800-424-8802

NYSDEC Spills Hotline 1-800-457-7362

10.4 FIRST AID

First Aid available at the following stations:

First Aid Kit TRUCK
Emergency Eye Wash TRUCK & ON SITE

10.5 WORK ZONES

10.5.1 COMMAND POST

Command post will be mobile.

10.6 SITE COMMUNICATIONS

10.6.1 TELEPHONE

Command Post Telephone - Cellular Phone
Number (845)943-0159

10.6.2 HAND SIGNALS

See Section 6.0

10.7 ENVIRONMENTAL MONITORING

10.7.1 MONITORING EQUIPMENT

Refer to RI Work Plan

10.8 PERSONAL PROTECTIVE EQUIPMENT

10.8.1 EXCLUSION ZONE, PROTECTION LEVEL

PROTECTIVE EQUIPMENT:	Level D
RESPIRATORY	None
HANDS	Nitrile or Leather
FEET	Steel Toed Boots
SUIT	None

10.8.2 CONTAMINATION REDUCTION CORRIDOR (DECON LINE)

PROTECTIVE EQUIPMENT:	Level D
RESPIRATORY	None
HANDS	Nitrile or Leather
FEET	Steel Toed
SUIT	None

10.9 DECONTAMINATION

10.9.1 DECONTAMINATION PROCEDURE

STATION 1 SOAPY WATER

STATION 2 WATER

11.0 KEY PERSONNEL

SAFETY AND HEALTH MANAGER / ON-SITE SUPERVISOR
Deborah J. Thompson

FOREMEN
TBA

FIELD PERSONNEL
Will Vary

12.0 WORK PLAN

12.1 JOB OBJECTIVE

The objective is to execute the SSDS Design Document prepared for the Site by Bellucci Engineering, PLLC dated January 2023. Upon completion of field work, a Construction Completion Report or CCR will be prepared and submitted to NYSDEC and NYSDOH following installation and startup of the SSDS. The report will include a summary of the first month of testing, operation and maintenance. The CCR will include a description of the SSDS as constructed, modifications to the system design, the data collected, and record drawings.

APPENDIX D
PILOT TEST LABORATORY ANALYTICAL REPORTS

Technical Report

prepared for:

Core Down Drilling, LLC
53 Bridle Ridge Road
Patterson NY, 12563
Attention: Daniel Bellucci

Report Date: 10/15/2020
Client Project ID: 77 Cornell Street Kingston, NY
York Project (SDG) No.: 20J0419

Report Date: 10/15/2020
Client Project ID: 77 Cornell Street Kingston, NY
York Project (SDG) No.: 20J0419

Core Down Drilling, LLC
53 Bridle Ridge Road
Patterson NY, 12563
Attention: Daniel Bellucci

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on October 08, 2020 and listed below. The project was identified as your project: **77 Cornell Street Kingston, NY**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
20J0419-01	UP-5	Soil Vapor	10/07/2020	10/08/2020
20J0419-02	UP-3	Soil Vapor	10/07/2020	10/08/2020
20J0419-03	UP-2	Soil Vapor	10/07/2020	10/08/2020
20J0419-04	EX-4 EFF	Soil Vapor	10/07/2020	10/08/2020

General Notes for York Project (SDG) No.: 20J0419

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 10/15/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: **UP-5** **York Sample ID:** **20J0419-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 9:52 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	**1,1,1-Trichloroethane**	**12.0**		ug/m³	1.76	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	2.21	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	2.47	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	1.76	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	1,1-Dichloroethane	ND		ug/m³	1.30	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	1,1-Dichloroethylene	ND		ug/m³	1.28	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	2.39	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	1.94	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	1.30	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	1.49	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	2.25	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	1.94	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	1.94	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-05-1	3-Chloropropene	ND		ug/m³	5.04	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	1.67	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-27-4	Bromodichloromethane	ND		ug/m³	2.16	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	**Carbon tetrachloride**	**0.608**		ug/m³	0.507	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	1.48	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND		ug/m³	0.850	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**2.67**		ug/m³	1.57	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	Chloromethane	ND		ug/m³	0.665	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/m³	1.28	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: UP-5 **York Sample ID:** 20J0419-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 9:52 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	1.46	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	**Dichlorodifluoromethane**	**3.82**		ug/m³	1.59	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
87-68-3	Hexachlorobutadiene	ND		ug/m³	3.44	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	**Methylene chloride**	**16.6**		ug/m³	2.24	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**154**		ug/m³	2.19	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	1.28	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	1.46	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**455**		ug/m³	0.433	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	**Trichlorofluoromethane (Freon 11)**	**2.17**		ug/m³	1.81	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	0.824	3.222	EPA TO-15	10/11/2020 12:00	10/12/2020 03:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*89.9 %*	*70-130*

Sample Information

Client Sample ID: UP-3 **York Sample ID:** 20J0419-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 10:04 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	**1,1,1-Trichloroethane**	**1.58**		ug/m³	1.13	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	1.42	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	1.58	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	1.13	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: **UP-3** **York Sample ID:** **20J0419-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 10:04 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-34-3	1,1-Dichloroethane	ND		ug/m³	0.836	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	1,1-Dichloroethylene	ND		ug/m³	0.819	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	1.53	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	1.24	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	0.836	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	0.954	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	1.44	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	1.24	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	1.24	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-05-1	3-Chloropropene	ND		ug/m³	3.23	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	1.07	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-27-4	Bromodichloromethane	ND		ug/m³	1.38	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	**Carbon tetrachloride**	**0.520**		ug/m³	0.325	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	0.951	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND		ug/m³	0.545	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**6.15**		ug/m³	1.01	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	Chloromethane	ND		ug/m³	0.426	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	**cis-1,2-Dichloroethylene**	**1.64**		ug/m³	0.819	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	0.937	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	**Dichlorodifluoromethane**	**2.45**		ug/m³	1.02	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
87-68-3	Hexachlorobutadiene	ND		ug/m³	2.20	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND		ug/m³	1.43	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**47.3**		ug/m³	1.40	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: **UP-3** **York Sample ID:** **20J0419-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 10:04 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	0.819	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	0.937	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**176**		ug/m³	0.277	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	**Trichlorofluoromethane (Freon 11)**	**1.74**		ug/m³	1.16	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	0.528	2.065	EPA TO-15	10/11/2020 12:00	10/12/2020 04:03	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*85.3 %*	*70-130*

Sample Information

Client Sample ID: **UP-2** **York Sample ID:** **20J0419-03**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 11:30 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes: **TO-VAC**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	**1,1,1-Trichloroethane**	**6.09**		ug/m³	1.69	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	2.13	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	2.38	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	1.69	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	1,1-Dichloroethane	ND		ug/m³	1.25	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	1,1-Dichloroethylene	ND		ug/m³	1.23	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	2.30	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	1.86	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	1.25	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: UP-2 **York Sample ID:** 20J0419-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 11:30 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
78-87-5	1,2-Dichloropropane	ND		ug/m³	1.43	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	2.17	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	1.86	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	1.86	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-05-1	3-Chloropropene	ND		ug/m³	4.85	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	1.60	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-27-4	Bromodichloromethane	ND		ug/m³	2.08	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	**Carbon tetrachloride**	**0.585**		ug/m³	0.488	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	1.43	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND		ug/m³	0.818	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**3.78**		ug/m³	1.51	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	Chloromethane	ND		ug/m³	0.640	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	**cis-1,2-Dichloroethylene**	**8.23**		ug/m³	1.23	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	1.41	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	**Dichlorodifluoromethane**	**3.22**		ug/m³	1.53	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
87-68-3	Hexachlorobutadiene	ND		ug/m³	3.31	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND		ug/m³	2.15	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**21.7**		ug/m³	2.10	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	1.23	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	1.41	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**378**		ug/m³	0.416	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	1.74	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	0.792	3.1	EPA TO-15	10/11/2020 12:00	10/12/2020 05:01	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: UP-2 **York Sample ID:** 20J0419-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 11:30 am	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate Recoveries	**Result**		**Acceptance Range**						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*84.7 %*		*70-130*						

Sample Information

Client Sample ID: EX-4 EFF **York Sample ID:** 20J0419-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 12:48 pm	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	**1,1,1-Trichloroethane**	**4.28**		ug/m³	1.71	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	2.15	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	2.40	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	1.71	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	1,1-Dichloroethane	ND		ug/m³	1.27	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	1,1-Dichloroethylene	ND		ug/m³	1.24	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	2.33	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	1.89	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	1.27	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	1.45	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	2.19	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	1.89	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	1.89	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-05-1	3-Chloropropene	ND		ug/m³	4.91	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	1.62	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: **EX-4 EFF** **York Sample ID:** **20J0419-04**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20J0419	77 Cornell Street Kingston, NY	Soil Vapor	October 7, 2020 12:48 pm	10/08/2020

Volatile Organics, TO15 Chlorinated Targets

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-27-4	Bromodichloromethane	ND		ug/m³	2.10	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	**Carbon tetrachloride**	**0.592**		ug/m³	0.494	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	1.44	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND		ug/m³	0.828	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**3.83**		ug/m³	1.53	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	**Chloromethane**	**1.75**		ug/m³	0.648	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	**cis-1,2-Dichloroethylene**	**2.86**		ug/m³	1.24	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	1.42	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	**Dichlorodifluoromethane**	**2.79**		ug/m³	1.55	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
87-68-3	Hexachlorobutadiene	ND		ug/m³	3.35	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND		ug/m³	2.18	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**26.4**		ug/m³	2.13	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m³	1.24	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	1.42	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**366**		ug/m³	0.422	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	1.76	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	0.802	3.138	EPA TO-15	10/11/2020 12:00	10/12/2020 05:59	LLJ
							Certifications:	NELAC-NY12058,NJDEP-Queens		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*85.7 %*	*70-130*

Analytical Batch Summary

Batch ID: BJ00632 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
20J0419-01	UP-5	10/11/20
20J0419-02	UP-3	10/11/20
20J0419-03	UP-2	10/11/20
20J0419-04	EX-4 EFF	10/11/20
BJ00632-BLK1	Blank	10/11/20
BJ00632-BS1	LCS	10/11/20
BJ00632-DUP1	Duplicate	10/11/20

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ00632 - EPA TO15 PREP											
Blank (BJ00632-BLK1)									Prepared: 10/11/2020 Analyzed: 10/12/2020		
1,1,1-Trichloroethane	ND	0.546	ug/m³								
1,1,2,2-Tetrachloroethane	ND	0.687	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.766	"								
1,1,2-Trichloroethane	ND	0.546	"								
1,1-Dichloroethane	ND	0.405	"								
1,1-Dichloroethylene	ND	0.396	"								
1,2,4-Trichlorobenzene	ND	0.742	"								
1,2-Dichlorobenzene	ND	0.601	"								
1,2-Dichloroethane	ND	0.405	"								
1,2-Dichloropropane	ND	0.462	"								
1,2-Dichlorotetrafluoroethane	ND	0.699	"								
1,3-Dichlorobenzene	ND	0.601	"								
1,4-Dichlorobenzene	ND	0.601	"								
3-Chloropropene	ND	1.57	"								
Benzyl chloride	ND	0.518	"								
Bromodichloromethane	ND	0.670	"								
Carbon tetrachloride	ND	0.157	"								
Chlorobenzene	ND	0.460	"								
Chloroethane	ND	0.264	"								
Chloroform	ND	0.488	"								
Chloromethane	ND	0.207	"								
cis-1,2-Dichloroethylene	ND	0.396	"								
cis-1,3-Dichloropropylene	ND	0.454	"								
Dichlorodifluoromethane	ND	0.495	"								
Hexachlorobutadiene	ND	1.07	"								
Methylene chloride	ND	0.695	"								
Tetrachloroethylene	ND	0.170	"								
trans-1,2-Dichloroethylene	ND	0.396	"								
trans-1,3-Dichloropropylene	ND	0.454	"								
Trichloroethylene	ND	0.134	"								
Trichlorofluoromethane (Freon 11)	ND	0.562	"								
Vinyl Chloride	ND	0.256	"								
Surrogate: SURR: p-Bromofluorobenzene	*7.60*		*ppbv*	*10.0*		*76.0*	*72-118*				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ00632 - EPA TO15 PREP											
LCS (BJ00632-BS1)								Prepared & Analyzed: 10/11/2020			
1,1,1-Trichloroethane	10.2		ppbv	10.0		102	70-130				
1,1,2,2-Tetrachloroethane	9.99		"	10.0		99.9	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.29		"	10.0		92.9	70-130				
1,1,2-Trichloroethane	9.37		"	10.0		93.7	70-130				
1,1-Dichloroethane	9.33		"	10.0		93.3	70-130				
1,1-Dichloroethylene	8.93		"	10.0		89.3	70-130				
1,2,4-Trichlorobenzene	8.15		"	10.0		81.5	70-130				
1,2-Dichlorobenzene	11.6		"	10.0		116	70-130				
1,2-Dichloroethane	9.21		"	10.0		92.1	70-130				
1,2-Dichloropropane	9.57		"	10.0		95.7	70-130				
1,2-Dichlorotetrafluoroethane	10.5		"	10.0		105	70-130				
1,3-Dichlorobenzene	8.68		"	10.0		86.8	70-130				
1,4-Dichlorobenzene	8.28		"	10.0		82.8	70-130				
3-Chloropropene	9.87		"	10.0		98.7	70-130				
Benzyl chloride	8.60		"	10.0		86.0	70-130				
Bromodichloromethane	9.81		"	10.0		98.1	70-130				
Carbon tetrachloride	9.75		"	10.0		97.5	70-130				
Chlorobenzene	10.3		"	10.0		103	70-130				
Chloroethane	10.1		"	10.0		101	70-130				
Chloroform	9.63		"	10.0		96.3	70-130				
Chloromethane	11.2		"	10.0		112	70-130				
cis-1,2-Dichloroethylene	8.71		"	10.0		87.1	70-130				
cis-1,3-Dichloropropylene	10.2		"	10.0		102	70-130				
Dichlorodifluoromethane	10.7		"	10.0		107	70-130				
Hexachlorobutadiene	10.1		"	10.0		101	70-130				
Methylene chloride	11.1		"	10.0		111	70-130				
Tetrachloroethylene	8.67		"	10.0		86.7	70-130				
trans-1,2-Dichloroethylene	9.36		"	10.0		93.6	70-130				
trans-1,3-Dichloropropylene	9.98		"	10.0		99.8	70-130				
Trichloroethylene	9.49		"	10.0		94.9	70-130				
Trichlorofluoromethane (Freon 11)	9.56		"	10.0		95.6	70-130				
Vinyl Chloride	10.6		"	10.0		106	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*12.5*		*"*	*10.0*		*125*	*72-118*				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ00632 - EPA TO15 PREP											
Duplicate (BJ00632-DUP1)	*Source sample: 20J0419-04 (EX-4 EFF)								Prepared: 10/11/2020 Analyzed: 10/12/2020		
1,1,1-Trichloroethane	4.28	1.71	ug/m³		4.28				0.00	25	
1,1,2,2-Tetrachloroethane	ND	2.15	"		ND					25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	2.40	"		ND					25	
1,1,2-Trichloroethane	ND	1.71	"		ND					25	
1,1-Dichloroethane	ND	1.27	"		ND					25	
1,1-Dichloroethylene	ND	1.24	"		ND					25	
1,2,4-Trichlorobenzene	ND	2.33	"		ND					25	
1,2-Dichlorobenzene	ND	1.89	"		ND					25	
1,2-Dichloroethane	ND	1.27	"		ND					25	
1,2-Dichloropropane	ND	1.45	"		ND					25	
1,2-Dichlorotetrafluoroethane	ND	2.19	"		ND					25	
1,3-Dichlorobenzene	ND	1.89	"		ND					25	
1,4-Dichlorobenzene	ND	1.89	"		ND					25	
3-Chloropropene	ND	4.91	"		ND					25	
Benzyl chloride	ND	1.62	"		ND					25	
Bromodichloromethane	ND	2.10	"		ND					25	
Carbon tetrachloride	0.592	0.494	"		0.592				0.00	25	
Chlorobenzene	ND	1.44	"		ND					25	
Chloroethane	ND	0.828	"		ND					25	
Chloroform	3.98	1.53	"		3.83				3.92	25	
Chloromethane	1.75	0.648	"		1.75				0.00	25	
cis-1,2-Dichloroethylene	2.86	1.24	"		2.86				0.00	25	
cis-1,3-Dichloropropylene	ND	1.42	"		ND					25	
Dichlorodifluoromethane	2.79	1.55	"		2.79				0.00	25	
Hexachlorobutadiene	ND	3.35	"		ND					25	
Methylene chloride	ND	2.18	"		ND					25	
Tetrachloroethylene	26.6	0.532	"		26.4				0.803	25	
trans-1,2-Dichloroethylene	ND	1.24	"		ND					25	
trans-1,3-Dichloropropylene	ND	1.42	"		ND					25	
Trichloroethylene	368	0.422	"		366				0.505	25	
Trichlorofluoromethane (Freon 11)	1.41	1.76	"		1.59				11.8	25	
Vinyl Chloride	ND	0.802	"		ND					25	
Surrogate: SURR: p-Bromofluorobenzene	*8.56*		*ppbv*	*10.0*		*85.6*	*72-118*				

Sample and Data Qualifiers Relating to This Work Order

TO-VAC The final vacuum in the canister was less than -2 inches Hg vacuum. The time integrated sampling may be affected and not reflect proper sampling over the time period. The data user should take note.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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Field Chain-of-Custody Record - AIR

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 20J0419

Page 1 of 1

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: Bellucci Engineering	Company:	Company:		RUSH - Next Day
Address: 30 S. Main St. #204 Ipswich MA 01938	Address: SAME	Address: SAME	YOUR Project Name: 77 Cornell Street Kingston, NY	RUSH - Two Day
Phone: (845) 803-4347	Phone.:	Phone.:		RUSH - Three Day
Contact: Dan B	Contact:	Contact:		RUSH - Four Day
E-mail: bellucciengineering.pllc@gmail.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Daniel Bellucci

Samples Collected by: (print your name above and sign below)

Air Matrix Codes	Samples From	Report / EDD Type (circle selections)			YORK Reg. Comp.
AI - Indoor Ambient Air	New York X	Summary Report	CT RCP	Standard Excel EDD	Compared to the following Regulation(s): (please fill in)
AO - Outdoor Amb. Air	New Jersey	QA Report	CT RCP DQA/DUE	EQuIS (Standard)	
AE - Vapor Extraction Well/ Process Gas/Effluent	Connecticut	NY ASP A Package	NJDEP Reduced Deliv.	NYSDEC EQuIS	
AS - Soil Vapor/Sub-Slab	Pennsylvania	NY ASP B Package	NJDKQP	NJDEP SRP HazSite	
	Other	Other:			

Certified Canisters: Batch X Individual ___

Please enter the following REQUIRED Field Data

Reporting Units: ug/m³ X ppbv X ppmv X

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (In Hg)	Canister Vacuum After Sampling (In Hg)	Canister ID	Flow Cont. ID	Analysis Requested
VP-5	10/7/20 0952	AS	29	5	23197	6870	TO-15 (cVOC list)
VP-3	10:04	AS	25	5	23997	5606	↓
VP-2	11:30	AS	30	5	470	6874	
EX-4 EFF	1248	AE	30	5	18305	6875	

Comments:

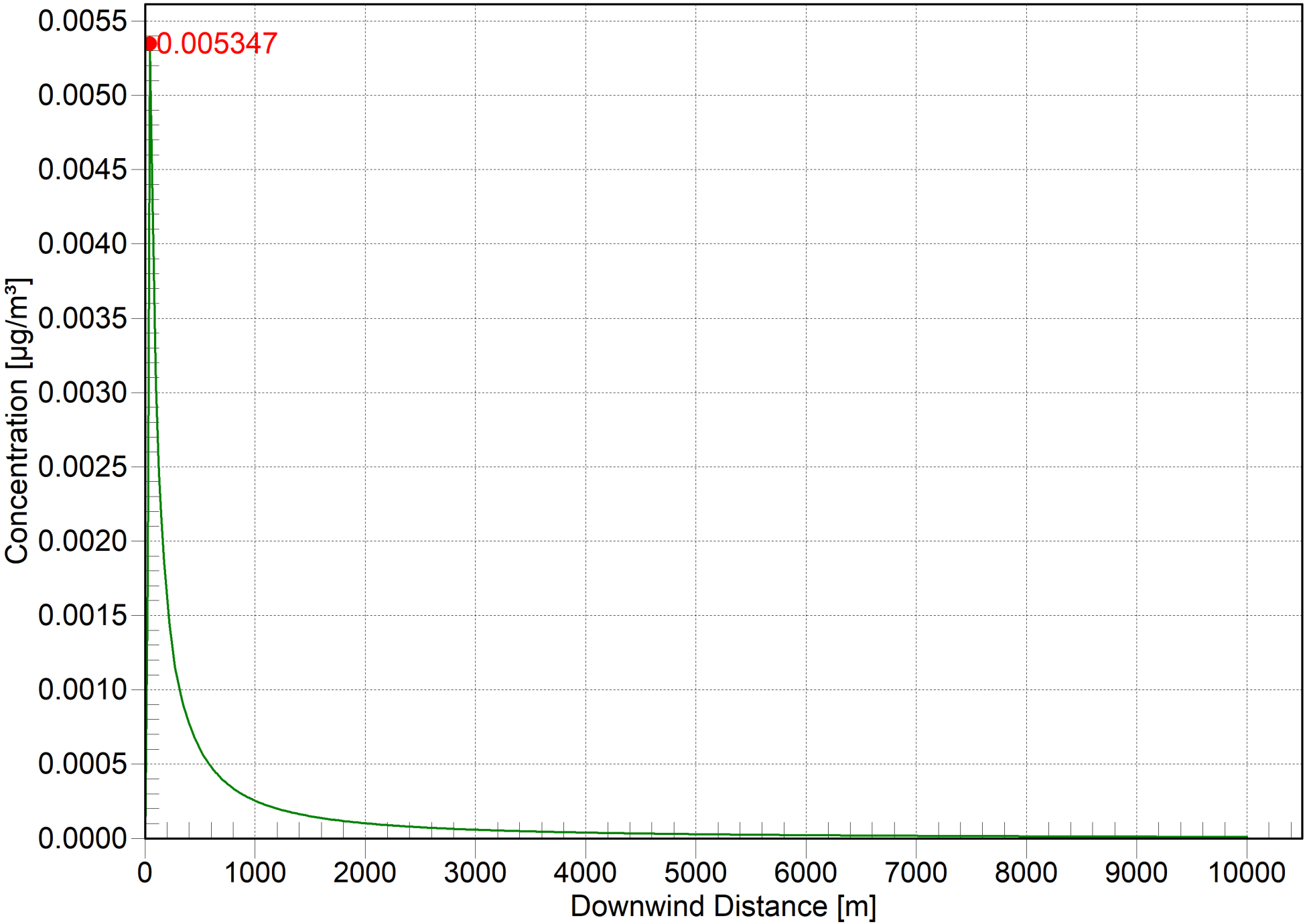
Detection Limits Required	Sampling Media
≤ 1 ug/m³ ___ NYSDEC V1 Limits ___	6 Liter Canister X
Routine Survey ___ Other ___	Tedlar Bag

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
	10/8/20 08:00		10-8-20 11:40		10-8-20 1455
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
TC Mahler/YORK	10/8/20 1455	TC Mahler/YORK	10/8/20 1945		10/8/20 1945
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
	10/8/20 2200				10/8/20 2327

APPENDIX E
AERSCREEN MODEL DATA OUTPUT

Max 1-Hour Concentration vs Downwind Distance

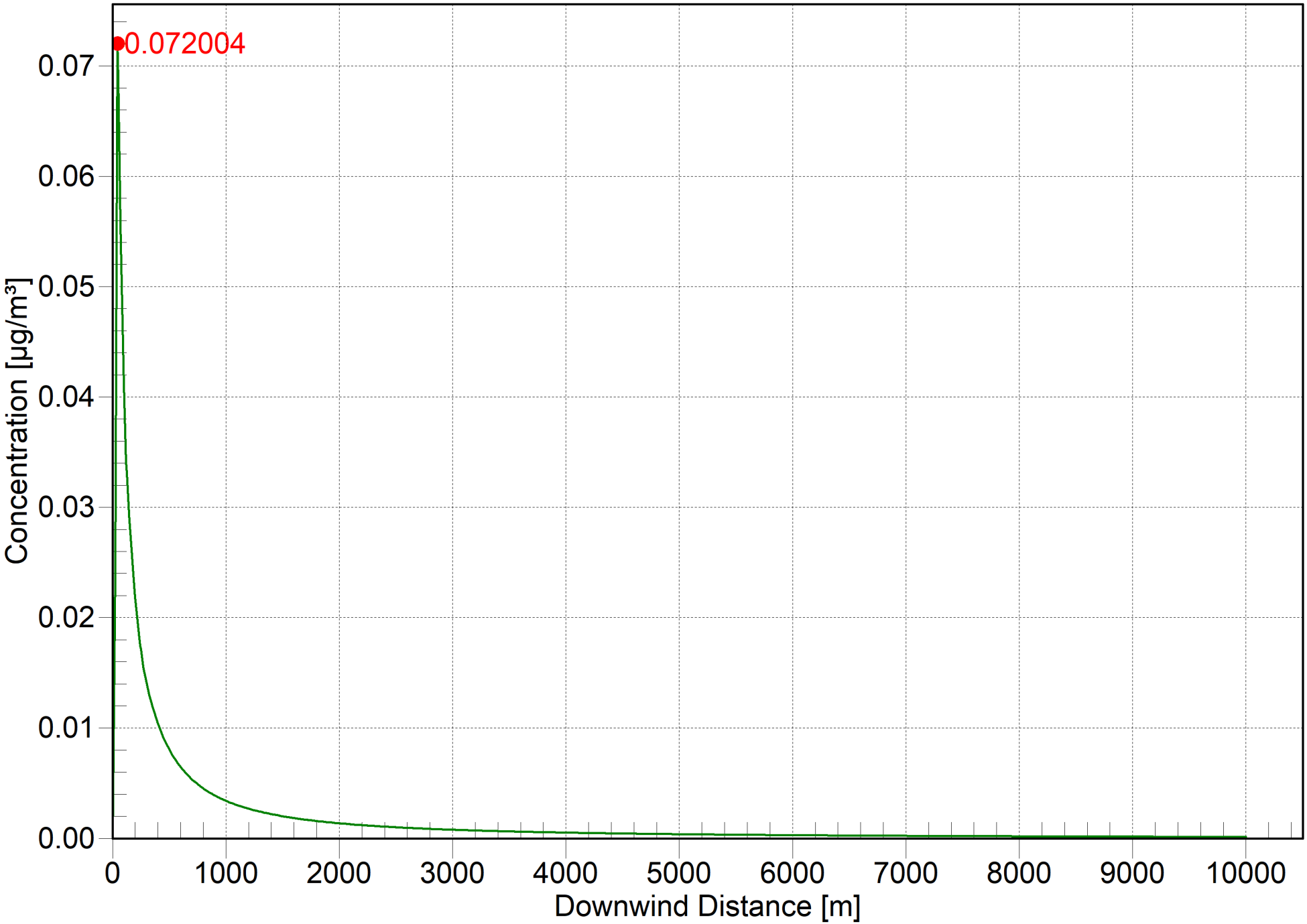
PCE 77 CORNELL - PCE



Max Conc: 0.005 µg/m³ - Distance: 46.0 m - Elevation: 0.00 m

Max 1-Hour Concentration vs Downwind Distance

TCE 77 CORNELL - TCE



Max Conc: 0.072 µg/m³ - Distance: 46.0 m - Elevation: 0.00 m