CORRECTIVE MEASURES DESIGN PLAN
FOR MITIGATION OF
POTENTIAL SOIL VAPOR INTRUSION

ORDER-ON-CONSENT R8-20151123-139

GENERAL CIRCUITS, INC.
NYSDEC SITE #828085
95 MT. READ BLVD.
ROCHESTER, NEW YORK

Prepared for:	95 Mt. Read Blvd., LLC 770 Rock Beach Road Rochester, New York
Prepared by:	Day Engineering, P.C. 1563 Lyell Avenue Rochester, New York
Project #:	3681R-05
Date:	November 2017

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
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January 16, 2018

Dennis P. Maguire
Maguire Family Properties, Inc.
770 Rock Beach Road
Rochester, NY 14617

Dear Mr. Maguire:

Re: Corrective Measures Design Plan For Mitigation of Potential Soil Vapor Intrusion November 2017
General Circuits, Inc. Site #828085
City of Rochester, Monroe County

The New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH), collectively referred to as the Departments, have completed their review of the document entitled *"Corrective Measures Design Plan For Mitigation of Potential Soil Vapor Intrusion"* (the Work Plan) dated November 2017 and prepared by Day Engineering, P.C. for the General Circuits, Inc. site in the City of Rochester, Monroe County. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan, with modifications, substantially addresses the requirements of the Order on Consent. The modifications are outlined as follows:

1. **Section 5.0:** The first paragraph is modified to indicate that the effectiveness monitoring will also include soil vapor intrusion samples (sub-slab soil vapor and indoor air) in AOC #1 upon the Departments' request. The soil vapor intrusion samples will be collected from areas outside the area of influence of the SSDS. The specific sample locations will be determined in consultation with the Departments after the extent of the pressure field has been adequately mapped.

2. **Section 5.0-Pressure Monitoring:** While the pressure monitoring holes may be filled and permanently sealed, periodic sub-slab pressure measurements at select locations will likely be required during site management.

3. **Section 5.0-Pressure Monitoring:** EPA's design document entitled "Radon Prevention in the Design and Construction of Schools and Other Large Buildings" states that a minimum sub-slab pressure of -0.002 inches of water column is required for an effective SSDS. This specification must be achieved at all times of the year. To ensure this specification is met, quarterly sub-slab pressure measurements at select locations will likely be required during at least the first year of operation. The specific measurement locations will be determined in consultation with the Departments after the initial extent of the pressure field has been adequately mapped.

4. **Section 5.0-Indoor Air Monitoring:** The Departments understand that sample locations in AOC #2 will be included in the indoor air monitoring program.

5. **Section 5.0-Indoor Air Monitoring:** ASP Category B format data deliverables and Data Usability Summary Reports will be provided for the post-mitigation soil vapor intrusion and indoor monitoring sample results.

6. **Section 6.0:** Preliminary indoor air and soil vapor intrusion samples will be collected in AOC #1 no later than 7 months after completion of the AOC #1 enhanced SSDS. This provision is meant to provide incremental effectiveness data in the event that completion of AOC #2 mitigation system is delayed.

7. **Figures:** Figure 3 is revised to show that the combined sub-slab soil vapor and indoor air concentrations at locations D-7, D-18, and D-19 also exceed the May 2017 NYSDOH Sub-Slab Soil Vapor/Indoor Air matrix values requiring mitigation.

With the understanding that the above noted modifications are agreed to, the Work Plan is hereby approved. If you choose not to accept these modifications, you are required to notify this office within 20 days after receipt of this letter and prior to the start of field activities. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

Prior to the start of field activities, please attach a copy of this letter to the Work Plan and distribute bound hardcopies of the approved Work Plan as follows:

- Frank Sowers (NYSDEC, Region 8) – 2 copies;
- Arnett Branch Library – 1 copy.

Please notify me at least 7 days in advance of the start of field activities.

Thank you for your cooperation in this matter and please contact me at (585) 226-5357 if you have any questions regarding these comments.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Professional Engineer 1

ec:

B. Schilling	D. Loew	S. Berninger
J. Deming	P. Sylvestri	B. Kline
W. Silkworth	S. Karpinski	M. Cruden

CERTIFICATION STATEMENT

I, Barton F Kline, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Corrective Measures Design Plan was prepared in accordance with 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.

______________________ P.E.

November 8, 2017 DATE

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APPENDICES

1.0 INTRODUCTION

This Corrective Measures Design Plan For Mitigation Of Potential Soil Vapor Intrusion (Design Plan) has been developed by Day Engineering, P.C. (DAY) on behalf of 95 Mt. Read Blvd., LLC (Owner), and identifies additional proposed site modifications to address the potential impacts of vapor intrusion upon indoor air quality within the building at 95 Mr. Read Boulevard, Rochester, New York (Site). Refer to Figure 1 for Site location.

Previous SVI mitigation activities completed at the Site are described in the *Construction Completion Report: Interim Remedial Measure Soil Vapor Intrusion Mitigation System* (February 2011), and include currently operational sub-slab depressurization, equipment and subsurface structure ventilation, and carbon filtration systems installed at select locations throughout the Site. Additional site and system modifications are now necessitated due to:

- Owner's withdrawal from the Brownfield Cleanup Program, and entering into Order on Consent Agreement R8-20151123-139 (February 2017), which altered the Site remedial plans/schedule (long-term operation of the interim SVI remedial measures is now anticipated); and

- Changes to applicable NYSDOH SVI guidance criteria (including indoor air concentration guidance values, matrix evaluation criteria, and remedial system installation recommendations) that have been made since preparation of the original *Interim Remedial Measures Design Plan: Indoor Vapor Intrusion System* (July 2004).

The intent of the proposed actions are to further reduce the potential exposure of building occupants to volatile organic compound (VOC) vapors migrating into indoor occupied spaces from contaminated groundwater and soils beneath the building, and to bring the Site into compliance with current applicable NYSDOH SVI guidance criteria.

2.0 PRIOR SVI MONITORING AND MITIGATION

1. Pre-Mitigation Site Characterization

   Sampling of sub-slab soil gas and indoor air quality was conducted in 2004 as a part of the Feasibility Study, at which time chlorinated VOC's were detected in sub-slab vapor samples. The data from previously performed groundwater and soil sampling studies, together with the air sampling results, indicated a potential pathway for vapor intrusion to indoor air in selected areas of the building. Based upon the various data obtained, two Areas of Concern (AOCs) were delineated to include areas of potential vapor intrusion, as well as adjacent areas identified as possessing higher levels of contaminants in groundwater, soil and/or sub-slab air space that could potentially contribute to vapor intrusion. AOC #1 was delineated as the ground level indoor spaces beneath which elevated VOCs were detected. AOC #2 was delineated as the unoccupied basement that is used for storage, and houses the Site's remedial groundwater treatment system. Refer to Figure 2 for delineation of the AOC #1 and AOC #2 areas.

   In comparing the sub-slab and indoor air test results, indoor air concentrations of three compounds (PCE, TCE and chloroform) were identified as potentially influenced by soil vapor intrusion to levels above applicable indoor air target concentrations within AOC #1 and/or AOC #2. Concentrations of these three compounds in sub-slab vapor samples within AOC #1 ranged from 8 to 190,000 micrograms per cubic meter (μg/m3) PCE; non-detect to 360,000 μg/m3 TCE; and non-detect to 2,000 μg/m3 chloroform. Results of AOC #1 indoor air sampling conducted from 2005 through 2010 (as mitigation measures were being implemented) indicated VOC concentrations of non-detect to 1,440 μg/m3 PCE (the latter impacted by tenant operations); non-detect to 15 μg/m3 TCE; and non-detect to 5.1 μg/m3 chloroform.

   Due to the proximity of groundwater to the basement's slab, sub-slab vapor samples have not been collected from AOC #2. Historical (1993) results for this area referenced in the Site Risk Assessment indicate that low concentrations of VOC's were detected near the open sump, including 0.1 ppm TCE. PCE and chloroform were not reported as being detected at that time. Results of more recent AOC #2 indoor air sampling conducted from 2007 through 2010 (as mitigation measures were being implemented) indicated VOC concentrations of 24 μg/m3 to 1,070 μg/m3 PCE, 11 μg/m3 to 166 μg/m3 TCE, and non-detect to 0.48 μg/m3 chloroform, although it should be noted that these results may have been impacted by ongoing operation of the remedial groundwater treatment system located in this area.

2. Mitigation Measures Completed to Date

   Mitigation measures were implemented in stages from 2004 through 2010, in accordance with the DEC-approved design plan and associated addenda, to address the VOC indoor air concentrations indicated above.

   Mitigation of potential soil vapor intrusion within AOC #1 is currently being accomplished using a sub-slab depressurization system (SSDS) that is augmented with supplemental indoor air carbon filtration units in select areas of AOC #1. The SSDS consists of six (6) independent SSDS points, and this system is being augmented with two Electrocorp I6500A air filtration units, containing approximately 160 pounds (lbs) of activated carbon per unit;

   An SSDS cannot effectively be used in AOC #2 due to high groundwater levels. Mitigation of potential soil vapor intrusion within AOC #2, which is an unoccupied space, is currently being accomplished using ventilation and indoor air carbon filtration. The ventilation system provides positive suction on the covered sumps, trench and appropriate groundwater treatment tanks to simultaneously address off-gassing of VOC's from groundwater in the treatment system as well as potential soil vapor intrusion via subsurface structures in the basement. This ventilation system is augmented with five (5) AllerAir air filtration units, containing 22 lbs to 36 lbs of activated carbon per unit.

3. Effectiveness of Prior Mitigation Measures

   A detailed description of confirmatory testing conducted through 2010 is provided in the *Construction Completion Report: Interim Remedial Measure Soil Vapor Intrusion Mitigation System* (February 2011). A summary of the indoor air testing results completed through 2015 is provided in Table 1.

   To evaluate the effectiveness of the initial SSDS system, results from two rounds of indoor air monitoring were compared. Pre-mitigation (prior to SSDS start-up) indoor air concentrations of March 5, 2004 were compared to post-SSDS start-up concentrations of April 1, 2005 and February 28, 2006. The April 1, 2005 samples (four samples) indicated the presence of chloroform and TCE at concentrations exceeding the regulatory guidelines. The February 28, 2006 samples (9 samples) were collected from the same locations as the March 5, 2004 samples, plus 5 additional locations to evaluate SSDS effectiveness within AOC #1. The 2006 sample results indicated that the four locations sampled prior to SSDS system startup no longer contained compounds exceeding target air concentrations potentially attributable to sub-slab contaminants; however, one of the additional locations was observed to contain concentrations of potential sub-slab constituents exceeding the regulatory standards, indicating the need for supplemental mitigation.

Subsequently, 30-pound carbon air filtration units were installed in February 2007 within select spaces to supplement the SSDS system in an attempt to reduce VOC concentrations within the southwest portion of AOC #1, and additional indoor air samples were collected on March 30, 2007 and February 25, 2008.

During the March 30, 2007 sampling event, the tenant occupying the space in which sample E-1 was collected was observed to be actively using a product that contained a high concentration of PCE during a portion of the sampling interval. A second indoor air sampling event was conducted on February 25, 2008. As seen in Table 1, samples E-5 and E-6 (locations later referred to as R-1 and R-2) contained TCE levels in excess of the regulatory guidance values. Results from AOC #2 were also observed to exceed the applicable TCE and PCE regulatory target values.

In suspecting the need for greater carbon filtration capacity, two smaller carbon air filtration units were temporarily relocated from AOC #2 to AOC #1 in October 2008 to further supplement the SSDS and existing carbon filtration units in these locations. Additional indoor air monitoring events were then conducted on November 24, 2008 and November 8, 2009. As shown on Table 1, these sample results were similar to those of the previous sampling events, with detected TCE concentrations in the AOC #1 R-1 and R-2 locations exceeding the applicable regulatory guidance values. In addition, AOC #2 once again contained concentrations of TCE and PCE exceeding the applicable regulatory guidance values.

In February 2010, upon evaluating the systems and determining that carbon capacity remained insufficient for the intended task, two large capacity (160 lb carbon) air filtration units were installed within the AOC #1 R-1 and R-2 tenant spaces to replace the smaller (30 lb carbon) air filtration units. The smaller carbon filtration units were relocated to the basement to supplement the mitigative controls in AOC #2. Following 30 days operation of the larger carbon air filtration units, indoor air samples were collected on March 24, 2010.

As shown on Table 1, the March 24, 2010 sample results for AOC #1 indicate that the concentrations of chloroform, PCE and TCE were below the applicable guidance values. As such, the soil vapor intrusion mitigation system controls (SSDS and air filtration controls) were deemed effective in addressing the potential sub-slab vapor intrusion, and in reducing indoor air concentrations of constituents of concern to below applicable regulatory target values, within AOC #1.

The March 24, 2010 indoor air sample collected from AOC #2 was reported to contain TCE (11 $\mu g/m^3$) in excess of NYSDOH air guidelines presented in the "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York". The remedial groundwater treatment system continued to operate in this area, and additional AOC #2 testing was proposed in accordance with the Site Management

Plan to determine if the existing engineering controls (i.e. ventilation system and carbon filtration units) were sufficient to meet the NYSDOH target criteria in this area.

Subsequent to completion, submittal and acceptance of the *Construction Completion Report: Interim Remedial Measure Soil Vapor Intrusion Mitigation System* (February 2011), additional indoor air monitoring events were completed for the 2011-2012, 2012-2013, 2013-2014 and 2014-2015 heating seasons, with mixed results. Chloroform and PCE within AOC#1 were consistently below applicable NYSDOH target criteria; however, TCE in AOC#1 was intermittently observed to exceed the target criteria within the carbon-treated AOC#1 areas (R-1 and R-2), with exceedances detected in 3 out of 10 samples. As such, the soil vapor intrusion mitigation system controls (SSDS and air filtration controls) were deemed marginally effective at the time in addressing the potential sub-slab vapor intrusion. Concentrations of TCE and PCE in AOC#2 (unoccupied basement storage area) continued to exceed applicable target criteria throughout this timeframe.

In August 2015, NYSDOH revised the indoor air guidance value for TCE, reducing the applicable guidance criteria from 5.0 $\mu g/m^3$ to 2.0 $\mu g/m^3$. While the current AOC #1 soil vapor intrusion mitigation system controls were mostly effective at meeting the 5.0 $\mu g/m^3$ NYSDOH guidance criteria in effect prior to 2015, there would have been significantly more exceedances had the 2.0 $\mu g/m^3$ guidance value been in effect at the time. In addition, since the groundwater extraction and treatment system is now expected to be operated on a long-term basis, the AOC#2 soil vapor intrusion mitigation system can no longer be deferred pending completion of other remedial measures.

3.0 SVI EVALUATION

For reasons described in Section 2.3, the vapor intrusion mitigation measures currently used at the Site were deemed not consistently effective in meeting current NYSDOH air guidance values. As such, a soil vapor intrusion evaluation was completed as detailed in the *Soil Vapor Intrusion Summary Report* (revised October 2016). The purpose of this evaluation was to complete more detailed indoor air sampling and, in select interior locations, co-located sub-slab soil vapor samples to evaluate VOC concentrations above and below the building slab. In addition to collecting analytical laboratory samples for testing, the integrity of the existing sub-slab depressurization system and estimated radius of influence for each sub-slab depressurization extraction location was evaluated, and additional soil vapor intrusion sources were investigated.

The results of the SVI evaluation are summarized in Figure 3, which delineates the extent of influence of the current SSDS, as well as shows results of the indoor air and subslab soil vapor monitoring. In summary, none of the indoor air samples contained PCE or chloroform concentration above the applicable NYSDOH guidance values. Seven of the 21 indoor air samples contained a TCE concentration above the current NYSDOH guidance value of 2 $\mu g/m^3$; however, with a reported range between 2.23 $\mu g/m^3$ and 3.82 $\mu g/m^3$, it should be noted that each of these exceedances were close to the NYSDOH guidance value. While none of these results would have been considered exceedances prior to the 2015 revision of the applicable TCE guidance value, the results confirm the need for additional mitigation to comply with the reduced 2015 NYSDOH TCE criteria.

Communication testing was also completed on the concrete block wall separating tenant spaces containing SSDS vent V-2 and V-3, as this wall had previously been identified as a potential source of soil vapor intrusion. Although the wall did not initially appear to have good communication between the concrete blocks, it was retested later and determined to have good communication that was adversely impacted by openings on the ends and/or top that were causing short-circuiting during the initial communication testing.

Subsequent communication testing of subslab media outside of the area of current SSDS influence was inconclusive due to varying subslab media permeabilities throughout the site (i.e. radius of influence was observed to vary from one direction to another, as observed in Figure 3 for the existing SSDS points). It is worth noting that communication testing across trenches indicated that the trenches tested did not significantly inhibit communication across the trenches (as would be expected if a single layer of higher permeability does not exist immediately beneath the floor slab).

4.0 PROPOSED SVI WORK ACTIVITIES

Additional proposed site modifications to address the potential impacts of vapor intrusion upon indoor air quality within the building at the Site are shown on Figure 4, and are summarized as follows:

1. AOC #1 (First Floor) SSDS Expansion

   As noted in Section 3.0, indoor air results were observed to exceed the current applicable NYSDOH guidance values at several locations outside of the existing SSDS radius of influence (see Figure 3). Based on soil vapor (subslab) VOC concentrations reported in the SVI evaluation, it appears that the likeliest potential sources for soil vapor intrusion outside of the existing SSDS coverage area are the areas located to the immediate east and southwest of the coverage area.

   As such, it is proposed to expand the existing SSDS radius of influence and coverage area by installing seven additional SSDS extraction points at the approximate locations indicated in Figure 4 (three to the east of the existing SSDS area, and four to the southwest of the existing SSDS coverage area). These locations may be modified slightly in the field at time of installation as needed to accommodate tenant needs. A design detail for the proposed extraction points is provided in Figure 5. Soil and fill material removed from the extraction point suction pits will be placed in NYSDOT-approved 55-gallon steel drum(s) for off-site transport and disposal in accordance with applicable regulations.

   It is anticipated that existing roof penetrations will be used to connect the SSDS vent piping to new rooftop-mounted fans as shown in Figure 5. Where feasible, larger curb-box mounted rooftop fans (Fantech RE/REC 10 series or equal) or inline fans (Fantech FR, Radonaway GP series or equal) will be utilized to provide suction to multiple SSDS extraction points. Where not feasible, single inline fans will be installed above the roofline to service individual extraction points.

2. AOC #1 (First Floor) SSDS Modification

   In conjunction with installation of the new SSDS extraction points described above, it is proposed to also expand the existing SSDS radius of influence and effective coverage area by increasing suction pressures on the existing SSDS extraction points. Specifically, the existing indoor-mounted fans on these units will be removed, and new fans with higher suction capabilities (as noted above) will be mounted above the rooftop in the same fashion as those proposed for the new SSDS extraction points (see Figure 5).

It is also proposed to improve the operational efficiency of the SSDS system by modifying V-3 to provide suction to a concrete block wall that was identified as a potential source of VOC's (see Figure 5). The sides and top of the wall will be sealed, and a tee off the V-3 suction line will be sealed to the wall to provide suction to the wall.

3. AOC #2 (Basement) Mitigation

   Mitigation of the basement is proposed to be accomplished through positive pressure ventilation. It is proposed that the existing basement rooms will be sealed to facilitate this positive pressure system. There are significant chaseways, holes and penetrations in the basement rooms that will need to be sealed, following which HVAC testing will be performed to identify the airflow requirements necessary to provide positive pressure to this area. A single fan system will be used to bring fresh air into the basement rooms, and additional space heating will be provided for temperature control as needed. Indoor air pressure monitoring points relative to subslab and/or basement walls will be installed for monitoring of the positive pressure atmosphere on an on-going basis. Details will be provided in a supplemental design plan to be submitted to NYSDEC upon completion of the HVAC testing.

   To minimize the indoor air quality impact of VOC's in the groundwater being treated in the basement, the sump and groundwater extraction treatment equipment ventilation system will remain operational following installation of the positive pressure ventilation system. The existing sump and equipment ventilation system will be sealed as best possible, and the equipment ventilation exhaust fan will be operated on a speed control to allow modulation of the airflow to the minimum required to maintain a pressure differential between the equipment and the surrounding air space.

4. Backdraft Evaluation

   Upon completion of installation and start-up of the SSDS fans, natural draft combustion devices (heaters, hot water tanks, etc.) will be checked and evaluated to confirm that backdrafting is not occurring.

5.0 EFFECTIVENESS MONITORING

The effectiveness of the additional SVI mitigation activities will be determined by assessing the pressures induced by the SSDS expansion and modification activities, and by the positive pressure ventilation system; and by completing confirmatory indoor air testing, and comparing the results to prior analytical test results and applicable NYSDOH guidance criteria. Initial confirmatory indoor air samples will be collected between 30 and 45 days of completion of the SVI mitigation systems installation and start-up (i.e. completion of all work scope activities described in Section 4.0 of the Design Plan). If this initial sampling event is outside of the heating season, then a second sampling event will be completed during the upcoming heating season.

1. Pressure Monitoring

   Following completion and start-up of the SSDS expansion and modification activities, the subslab vacuum pressure induced by the AOC #1 SSDS suction pits will be monitored. For existing SSDS suction pits, subslab vacuum pressure relative to indoor air will be measured at select locations previously monitored as a part of the SSDS vacuum field evaluation work summarized in the Soil Vapor Intrusion Evaluation Summary Report (October 2016). For new SSDS suction pits, select locations will be identified in the field as needed to identify the approximate radius of influence created by each new SSDS suction pit.

   Vacuum monitoring at the test locations will be completed by drilling small holes (1/4 to 1/2 inch in diameter) through the floor (e.g., concrete slab, wood plank, etc.), following which a TSI 9565 VelociCalc multi-function air velocity meter, or similar, will be used to measure the subslab vacuum pressure at each location. Vacuum gauge readings from each of the extraction point vent pipes will also be recorded for reference. Once the pressure monitoring activities are completed, the test point holes will be filled and permanently sealed with non-shrink mortar or grout.

   Activities for pressure monitoring of the AOC#2 (basement) positive pressure ventilation system will be provided in the supplemental design plan submittal referenced in Section 4.3 of the Design Plan.

2. Indoor Air Monitoring

   Prior to collection of the initial confirmatory indoor air samples, the NYSDOH Indoor Air Quality Questionnaire and Building Inventory survey will be completed. The Building Inventory will be limited to those areas containing an indoor air sample and those rooms adjacent to rooms containing an indoor air sample.

After the pressure monitoring, building inspection and product inventory is completed, DAY will collect indoor air samples from locations in which exceedances of NYSDOH indoor air guidance values were detected for parameters of concern (i.e. TCE, PCE and/or chloroform) during the SVI evaluation (see Figure 3), as well as the routine indoor air monitoring locations that have been sampled since 2007 (see Figure 2). In addition, one background outdoor air sample will be collected.

The background outdoor air sample will be collected approximately three to five feet above the ground surface from an upwind exterior location, as determined at the time of sample collection. The outdoor air sample will be collected simultaneously with indoor air samples and the sub-slab vapor samples to evaluate the potential influence, if any, of outdoor air on indoor air quality. To aid in the interpretation of the sampling results, pertinent information that may interfere or affect the sampling event will be documented. Such information may include but, is not limited to, wind direction, the location of potential interferences (e.g., gasoline stations, factories, small engine use, etc.), weather conditions (e.g., precipitation and outdoor temperature), odors, readings from field instrumentation (e.g., PID), and significant activities in the vicinity (e.g., operation of heavy equipment).

Indoor and background air samples will be collected using laboratory certified “clean” 6-liter Summa Canisters. The Summa Canister air flow-rate will be controlled with pre-calibrated 2-hr regulators supplied by the laboratory. Vacuum gauges on the regulators will be monitored during sample collection to check for proper operation of the Summa Canister (i.e., slow changes in vacuum), and to verify that the sample collection rate does not exceed 0.2 liters per minute. The vacuum reading will be recorded at the start of the test and monitored throughout the test. Additionally, a PID will be used to screen the air space above the Summa Canisters to establish background conditions prior to sampling and during the sampling event to identify VOC fluctuations that may occur during the sampling interval.

The indoor and outdoor air samples will be submitted under chain-of custody documentation to a NYSDOH ELAP-certified analytical laboratory for analysis of VOCs via USEPA Method TO-15 using applicable ASP protocol. The analytical laboratory data results will be submitted to EQuIS within 90 days of receipt of the analytical laboratory data. [Note: Analytical laboratory results will be submitted to the NYSDEC and NYSDOH in the Site’s applicable monthly progress report upon receipt of results from the laboratory and review by DAY.]

6.0 SCHEDULE

A detailed work schedule including a breakdown of the proposed SVI mitigation activities is provided in Figure 6. Based on the current understanding of this work, the time frames for this project are as follows:

- The proposed first floor AOC#1 SSDS work (installation of new SSDS extraction points and modification of existing SSDS extraction points) will be completed within four months of receipt of Design Plan approval by NYSDEC;

- The proposed basement AOC#2 preliminary work (sealing, air testing and supplemental design plan development) will be completed within four months of receipt of Design Plan approval by NYSDEC;

- The proposed basement AOC#2 final work (positive pressure equipment installation) will be completed within three-and-a-half months of receipt of Supplemental Design Plan approval by NYSDEC; and

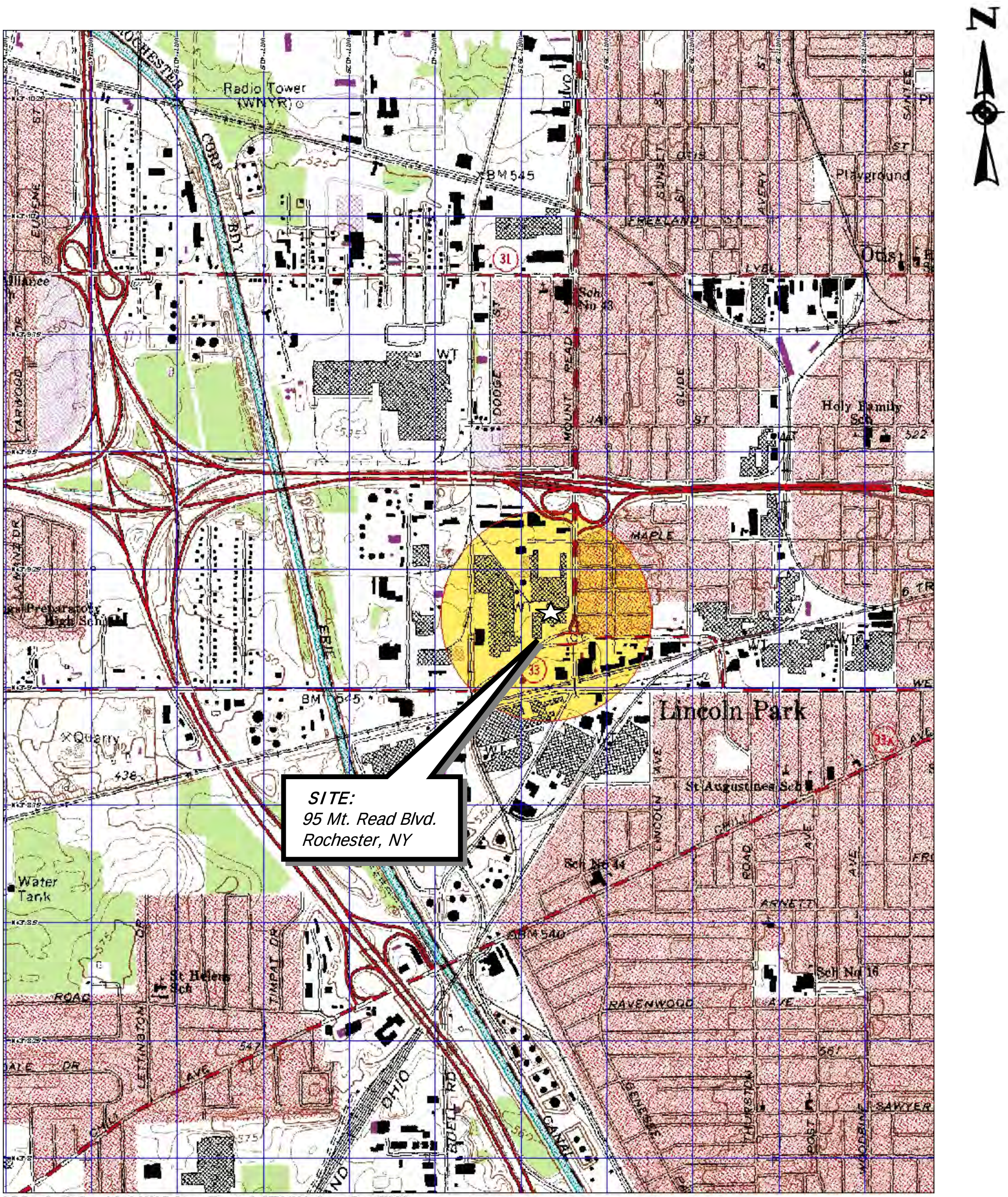
- The effectiveness testing (indoor air sample collection) will be completed within 45 days of completion of AOC #1 and AOC #2 start-up and testing.

Upon completion of the activities identified above, and subsequent receipt of analytical results, DAY will prepare a brief letter report summarizing the test results and apparent systems effectiveness, and providing recommendations for the next submittal (which will either be a Supplemental Work Plan for additional mitigation measures or a Construction Completion Report/Final Engineering Report and revised Site Management Plan). The summary report will be submitted within two months of the indoor air sample collection date. The subsequent submittal package (Supplemental Work Plan, Construction Completion Report/Final Engineering Report, and/or revised Site Management Plan, as applicable) will be completed within four months of receipt of concurrence from NYSDEC concerning the summary letter findings and recommendations.

If any problems are encountered during the completion of the proposed SVI mitigation activities that would result in additional work and/or delays to the project schedule, NYSDEC will be notified, and revisions to this plan and schedule will be requested accordingly.

APPENDIX A

FIGURES



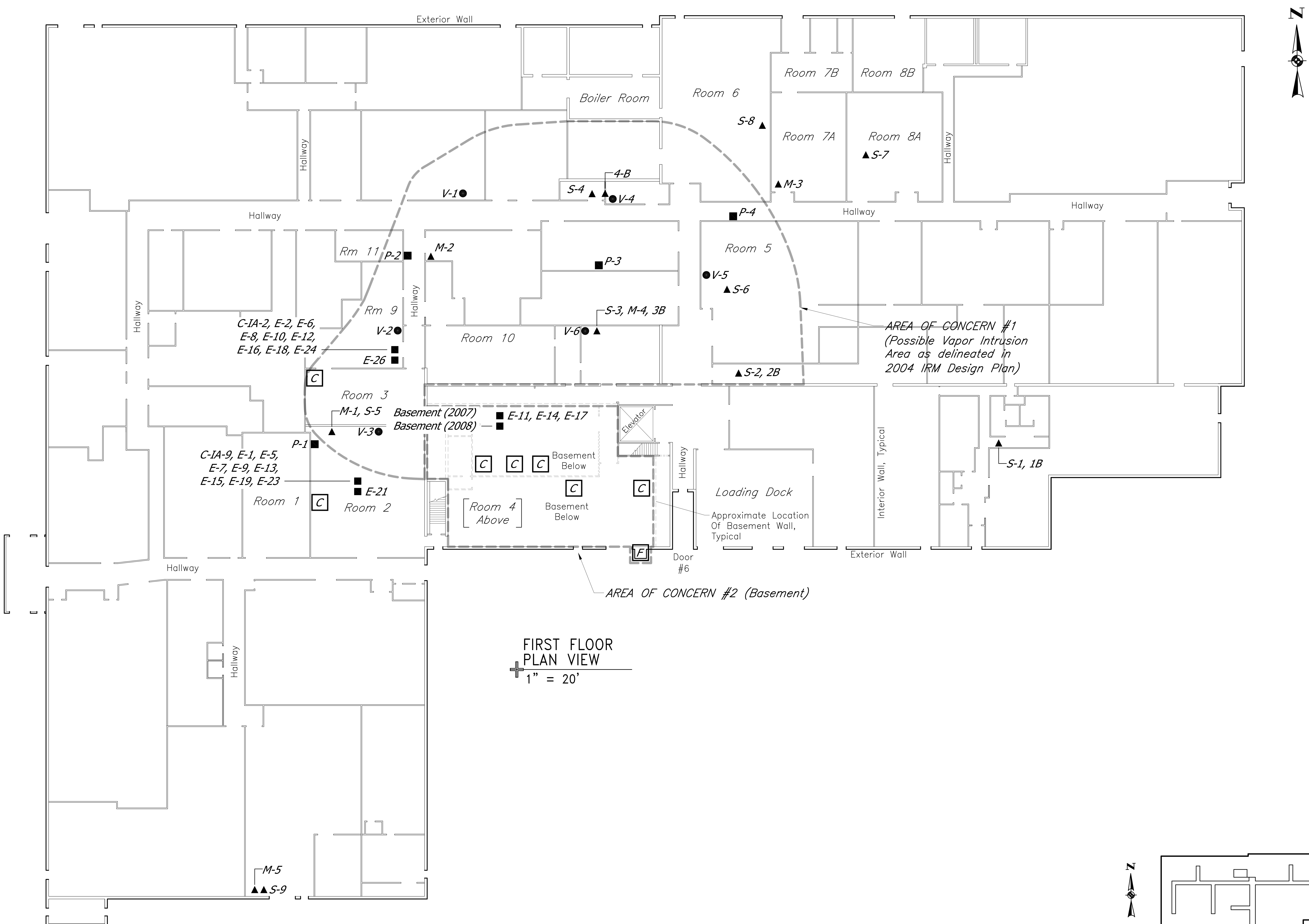
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

544 ft Scale: 1 : 19,200 Detail: 14-0 Datum: NAD27

Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester West (NY) 1995. Site Lat/Long: N43d-09.15' – W77d-39.67'

DATE **8-16-2017** DRAWN BY **RJM** SCALE **1" = 2000'**	day DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK 14606	PROJECT TITLE **95 MT. READ BOULEVARD** **ROCHESTER, NEW YORK** **DESIGN PLAN – SVI MITIGATION** DRAWING TITLE **PROJECT LOCUS MAP**	**PROJECT NO.** **3681R-05** **FIGURE 1**

BG 3/24/15 ■



FIRST FLOOR PLAN VIEW
1" = 20'

BG 1/11/15 ■

NOTE:

1. Drawing produced from a drawing by The ERM Group, entitled "Figure 3-1; PCB, Asbestos & Sediment/Residue Sampling Locations", dated 11/20/1990; A blueline print by Miller-Anderson Architects, entitled "1st Floor Plan Details", date issued 3-3-2000; and from notes of site visits by representatives of Day Environmental, Inc.

LEGEND:

■ Indoor Air Sample Location 2007–2015

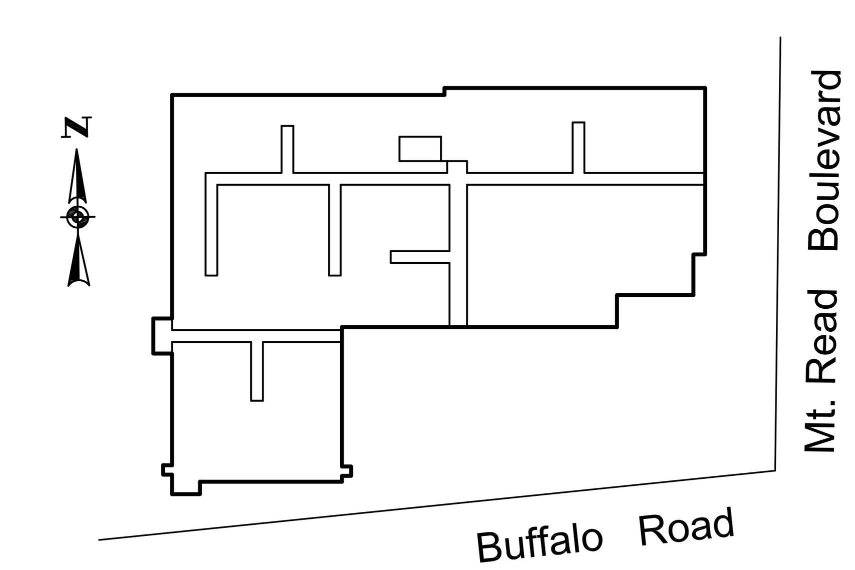
▲ Indoor Air Sample Location 2004–2006

[C] Carbon Air Filter

[F] Basement Fan

V-1 thru V-6 ● "As-Built" Vertical Vent Stack/Fan Location

P-1 thru P-4 ■ "As-Built" Sub-Slab Pressure Test Location



LOCATION PLAN
Not To Scale

DESIGNED BY NES 8-2017
DRAWN BY RJM/Tw 8-14-2017
CHECKED BY BFK 8-14-2017
APPROVED BY BFK 8-15-2017
SCALE As Noted 8-15-2017

REVISIONS | DATE | BY

DAY ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERING CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK, NEW YORK 10170

95 MT. READ BOULEVARD
ROCHESTER, NY

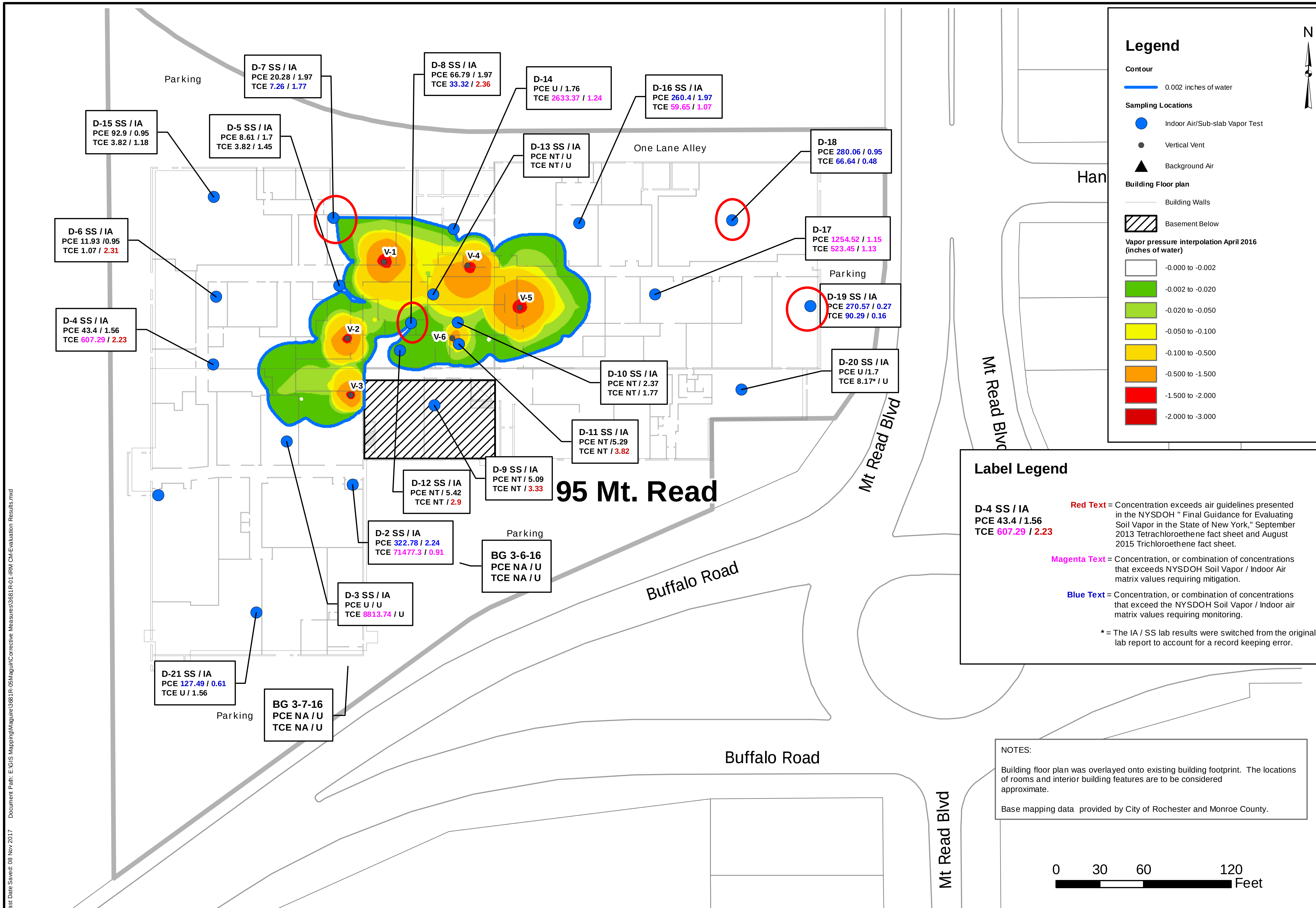
CORRECTIVE MEASURES DESIGN PLAN - SVI MITIGATION

Sample Location Plan

PROJECT NO. 3681R-05

DRAWING NO. FIGURE 2

ANSI "D" (22x34)
DayEng_AnsiD



Last Date Saved: 08 Nov 2017 Document Path: E:\GIS Mapping\Maguire\3681R-05Maguire\Corrective Measures\3681R-01-IRM CM-Evaluation Results.mxd

DATE	DATE DRAWN	DATE ISSUED
09-2016	08-2017	08-15-2017

DESIGNED BY	DRAWN BY	SCALE
BFK	CPS	AS NOTED

day

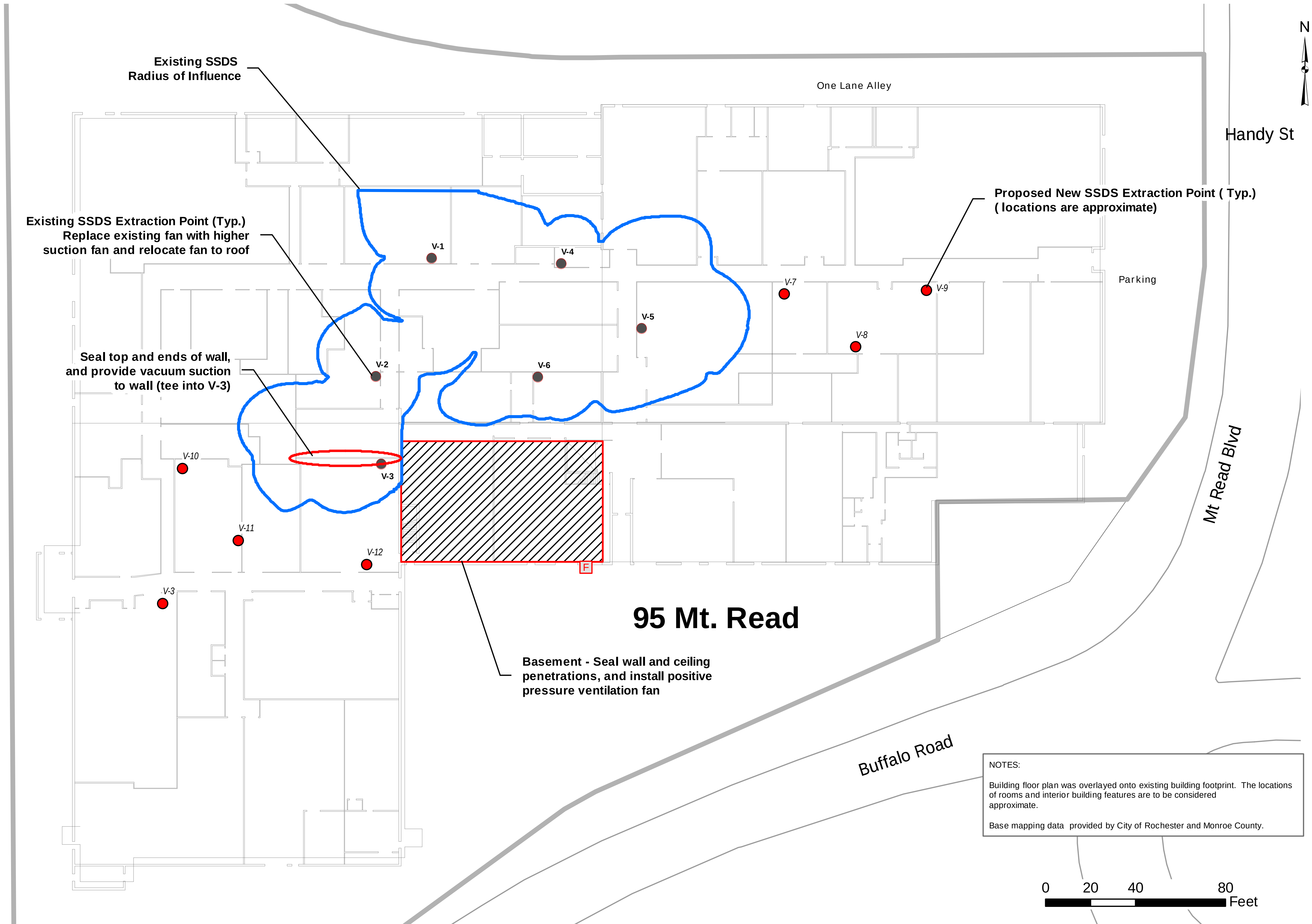
DAY ENGINEERING, P.C.
Environmental Engineering Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
95 MT READ BOULEVARD
ROCHESTER, NEW YORK
CORRECTIVE MEASURES
DESIGN PLAN - SVI MITIGATION

Drawing Title
SVI Evaluation Results

Project No.
3681R-05

FIGURE 3



NOTES:

Building floor plan was overlayed onto existing building footprint. The locations of rooms and interior building features are to be considered approximate.

Base mapping data provided by City of Rochester and Monroe County.

DESIGNED BY	DATE
BFK	09-2016
DRAWN BY	DATE DRAWN
CPS	08-2017
SCALE	DATE ISSUED
AS NOTED	08-15-2017

DAY ENGINEERING, P.C.
Environmental Engineering Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
95 MT READ BOULEVARD
ROCHESTER, NEW YORK
CORRECTIVE MEASURES
DESIGN PLAN - SVI MITIGATION

Drawing Title
SVI Mitigation Plan

Project No.
3681R-05

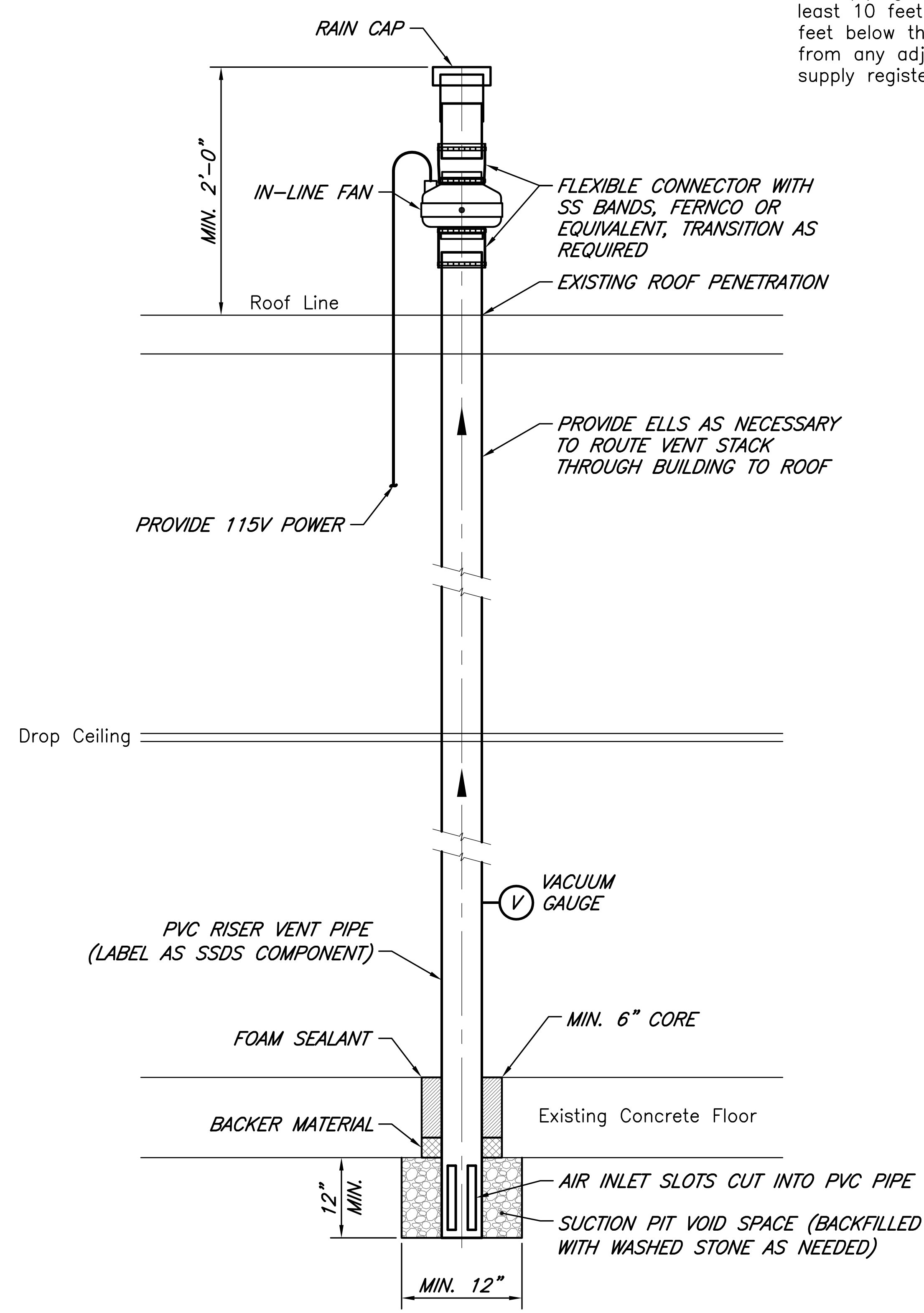
FIGURE 4

Last Date Saved: 08 Nov 2017   Document Path: E:\GIS Mapping\Maguire\3681R-05Maguire\IRM\3681R-02-IRM-Mitigation Plan.mxd

Notes:

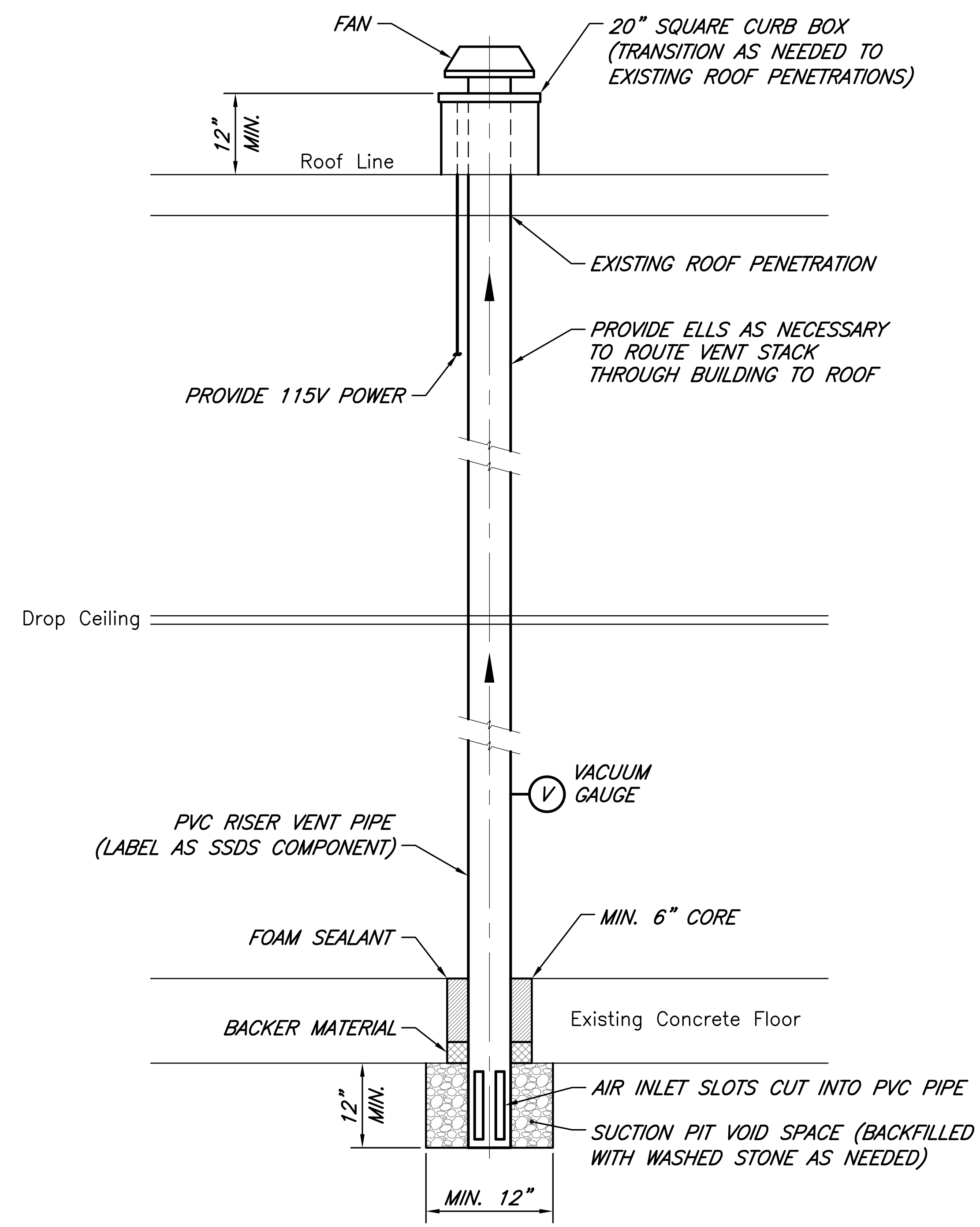
1. Vent piping shall be sloped so that condensate either drains back to the suction pit or a drain tube. Any water that collects in the drain tube shall be collected and treated through the existing groundwater treatment system.

2. Vent piping exhaust points on the roof shall be located at least 10 feet away from any opening that is less than 2 feet below the exhaust point, and at least 10 feet away from any adjoining or adjacent buildings, or air intakes or supply registers.



TYPICAL SECTION SUB-SLAB DEPRESSURIZATION VENT WITH IN-LINE FAN

Not To Scale



TYPICAL SECTION SUB-SLAB DEPRESSURIZATION VENT WITH CURB-MOUNT FAN

Not To Scale

DATE	8-2017
DATE DRAWN	8-14-2017
DATE ISSUED	11-6-2017
DESIGNED BY	BFK
DRAWN BY	RJM/Tw
SCALE	As Noted

day
DAY ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERING CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK, NEW YORK 10170

PROJECT TITLE
95 MT. READ BOULEVARD
ROCHESTER, NY
CORRECTIVE MEASURES DESIGN PLAN - SVI MITIGATION

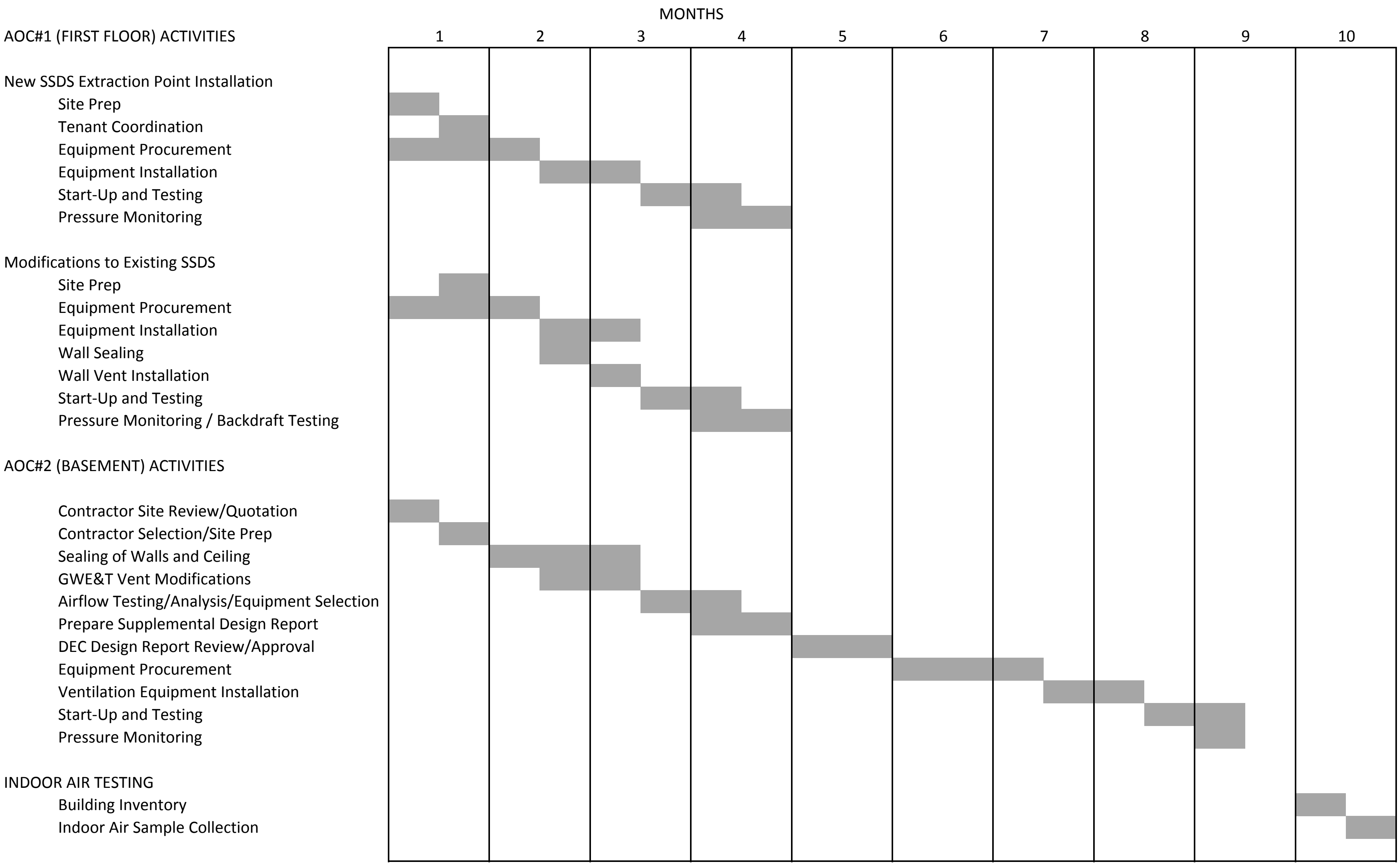
DRAWING TITLE
Sub-Slab Depressurization System Details

PROJECT NO.
3681R-05

FIGURE 5

FIGURE 6

SVI MITIGATION WORK SCHEDULE



APPENDIX B

TABLES

TABLE 2

95 MT READ BOULEVARD
ROCHESTER, NEW YORK

SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUND (VOC)
INDOOR AIR TEST RESULTS IN MICROGRAMS PER CUBIC METER (ug/m^3)

DETECTED VOCs	SAMPLE LOCATION AND DESIGNATION (Refer to Figure 2 for locations)																													USEPA 2001: BASE database (UG/M^3) (1)	NYSDOH VOC REFERENCE DATA (UG/M^3) (2)
	AOC #1																AOC #1: Location R-1														
	2004 1B 3-5-04	2006 S-1 2-28-06	2004 2B 3-5-04	2006 S-2 2-28-06	2004 3B 3-5-04	2005 M-4 4-1-05	2006 S-3 2-28-06	2004 4B 3-5-04	2006 S-4 2-28-06	2005 M-2 4-1-05	2005 M-3 4-1-05	2005 M-5 4-1-05	2006 S-6 2-28-06	2006 S-7 2-28-06	2006 S-8 2-28-06	2006 S-9 2-28-06	2005 M-1 4-1-05	2006 S-5 2-28-06	2007 E-1 3-30-07	2008 E-5 2-25-08	2008 E-7 11-24-08	2009 C-IA-9 11-8-09	2010 E-9 3-28-10	2012 E-13 3-26-12	2012 E-15 12-9-12	2013 E-19 12-8-13	2014 E-21 3-30-14	2015 E-23 1-11-15		
COMPOUNDS THAT EXCEED TARGET AIR CONCENTRATIONS THAT APPEAR POTENTIALLY ATTRIBUTABLE TO SUB-SLAB CONTAMINANTS																														
Chloroform	-	0.81	-	-	**1.6**	**2.2**	-	-	-	-	-	-	-	-	-	-	**2.1**	**5.1**	-	0.7	-	0.43	0.29	1.1	-	0.78	0.58	0.73	1.1	1.2
Trichloroethene	-	-	-	-	**5.9**	-	**2.1**	**3.6**	0.78	-	-	-	0.52	0.6	-	-	**3.2**	**10**	**9.04**	**8.5**	**10.8**	**5.2**	**2.5**	**10**	**2.53**	**8.65**	1.61	**2.69**	2 (3)	2 (3)
Tetrachloroethene	-	-	3.5	-	9.8	11	18	7.1	4.3	14	**170**	-	2.1	-	-	-	**120**	**100**	**1,440 E**	5.1	21.3	5.5	1.2	11	1.9	0.75	1.36	1.83	30 (4)	30 (4)
COMPOUNDS THAT EQUAL OR EXCEED INDOOR AIR CONCENTRATIONS THAT APPEAR POTENTIALLY ATTRIBUTABLE TO BACKGROUND CONTAMINANTS (i.e., TENANT OPERATIONS)																														
Acetone	**380**	20	**240**	13	110	96	**250**	**140**	**180**	**130**	**210**	**13**	53	**650**	-	-	59	**240**	**220 E**	**120**	80.7 JBE	110	70 B	**220**	23.45	**172.04 D**	35.64	18.04	98.9	115
Methylene Chloride	3.8	3.4	15	7	**90**	**160**	38	**62**	**87**	**620**	**1,900**	-	16	**110**	**140**	-	**130**	53	**423 E**	**210**	**141 JBE**	**610**	**82**	44	14.72	**126.74 D**	**114.94**	22.95	60 (5)	60 (5)
Benzene	-	0.89	1.9	0.8	1.8	1.8	2	-	-	3.6	-	-	-	-	**170**	-	5.2	8.9	3.86	0.93	1.86 J	1.3	0.41	1.0	0.32	0.54	0.61	1.60	9.4	13
Toluene	24	5.8	**93**	7.6	**270**	**320**	**1,200**	**430**	**920**	**400**	**1,200**	1.9	**120**	**3,300**	**860**	1.6	**330**	**560**	**399 E**	**130**	**103 JE**	**280**	40	49	20.09	47.03 D	25.66	5.34	43	57
Ethylbenzene	-	-	**13**	-	**31**	2.8	1.8	**35**	3.4	**10**	**37**	-	-	3.6	**200**	-	6.3	**9.4**	**6.63**	-	3.39 J	3.6	1.2	1.4	1.52	1.39	1.26	-	5.7	6.4
Chloromethane	-	0.96	-	0.91	-	-	-	-	-	1.5	-	-	0.97	-	-	0.88	-	1.1	1.64	1.2	-	1.2	0.99	1.4	0.87	-	-	-	3.7	4.2
Trichlorofluoromethane	9.2	4.1	5.8	5.9	4.9	3.9	4.8	3.4	2.7	2.7	-	-	4.1	-	-	1.1	8	3.8	**15.2**	5.7	11.6	12	8.2	**14**	9.05	9.38	7.92	4.95	18.1	12
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	**1.5**	-	-	-	-	-	-	-	**1.5**	**1.51**	-	-	-	0.31	**0.41**	-	-	-	-	<1.4	0.4
Vinyl Acetate	-	7.7	-	-	-	-	-	-	-		-	-	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA
2-Butanone (MEK)	-	3.8	-	3.1	6	5	3.3	4.3	2.9	7.9	-	-	6.2	7.7	-	1.4	5.5	10	24.0 E	32	10.3	12	4.7 B	6.8	1.62	2.74	4.42	2.36	12.0	NA
cis-1,2-Dichloroethene	-	-	**2.8**	-	**4.2**	**2.4**	**3.9**	-	-	-	-	-	-	-	-	-	**12**	**23**	**37.3 E**	**3.9**	**7.19**	**2.7**	**1.9**	**18**	**1.03**	**1.07**	**1.23**	**0.83**	<1.9	0.4
4-Methyl-2-pentanone	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	1.7	12.9	3.9	7.08	2.7	0.33	-	-	-	0.82	-	6.0	NA
Chlorobenzene	-	-	-	-	**1.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.563 J**	-	-	-	-	-	-	-	<0.9	0.4
m,p-Xylenes	6.3	1.6	**36**	-	**85**	11	6.5	**98**	**34**	**38**	**370**	-	2.7	**26**	**2,400**	-	**22**	**35**	**35.2**	**15**	**13.3**	**13**	4.5	3.8	3.9	5.2	4.21	-	22.2	11
o-Xylene	-	-	**8.5**	-	**20**	5.2	2.6	**23**	**17**	**20**	**170**	-	1.4	**21**	**1,100**	-	**9.1**	**15**	**14.7**	5.3	5.07	6.2	1.6	1.1	0.78	1.69	1.39	-	7.9	7.1
Styrene	-	1	-	1.2	-	-	**4.2**	-	**3.5**	-	-	-	**2.7**	-	-	-	**3.3**	**8.9**	**42.2 E**	**3.5**	**13.3**	**35**	**2.6**	1.3	0.55	0.3 J	**1.45**	-	1.9	1.4
1,4-Dichlorobenzene	-	**27**	**1.9**	**2.3**	**3.4**	**2.7**	**4.2**	**5.4**	**9.9**	**3.9**	-	-	**12**	**18**	-	-	**1.8**	**6.9**	**4.17**	**37**	**1.94**	**97**	0.62	0.35	-	-	-	-	5.5	1.2
Trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.836	0.32	-	1.5	100	42	7.73	26.41	24.7	4.08	NA	NA
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.6	0.4
Freon 113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.875	0.65	-	0.72	0.32	0.75	-	-	-	-	NA	NA
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	1.17 J	0.84	-	-	-	-	-	-	20.6	2.5
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.568**	-	-	0.3	-	0.33	-	-	-	-	<1.9	0.4
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-	1.6	-	-		-	-	0.44	0.6	-	-	-	-	NA	NA
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	0.511 J	0.4	-	0.72	0.31	0.31	0.44 J	0.38 J	<1.3	1.3
Dichlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.1	-	2	2.3	2.3	2.77	3.51	2.57	2.23	16.5	10
Ethanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	50.0 JE	78	75	120	36.01	45.25 D	17.08	30.73 BsH	210.0	NA
Ethyl Acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	NT	6.8	1.3	4.2	0.5	7.49	6.45	1.62	5.4	NA
4-Ethyl Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	NT	12	0.8	0.47	0.49	0.34 J	-	-	3.6	NA
n-Heptane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	11	3.5	0.38	1.7	-	10.7	4.39	1.15	NA	18
Hexane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	3.3	4.7	0.34	-	1.20 J	1.13 J	0.42 J	3.49	10.2	14
Isopropanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	NT	630	340	200	41.23	68.96 D	51.53	13.94	NA	NA
Tetrahydrofuran	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NT	**1.6**	**2.1**	**130**	**7.31**	**4.95**	**6.93**	**8.32**	NA	0.8
1,2,4-Trimethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**	**29.7 JE**	**55**	**5.1**	2.1	0.93	0.79	0.88	-	9.5	2.5
1,3,5-Trimethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7.8**	**10.2**	**17**	2	0.88	0.49	0.29 J	-	-	3.7	3.9
Cyclohexane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.25	0.91	-	0.9	-	-	-	0.65	NA	6.3
1,3-Butadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	-	-	-	-	<3.0	NA
Naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	5	NA
1,1-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA
Methyl tert-Butyl Ether (MTBE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.5	14
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	NA
Isopropylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	0.8
Benzene Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46 BsH, J	6.8	NA
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.52 BsH, J**	6.8	0.5
4-Isopropyltoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.54	-	-	-	NA	NA
n-Butylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	NA	1.1
Carbon Disulfide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.27	0.35	-	-	-	-	-	4.2	NA

Notes:

Samples analyzed by United States Environmental Protection Agency (USEPA) Method TO-15.

(1) The 90th percentile values from EPA Building Assessment and Survey Evaluation (BASE), and as per NYSDOH Final Soil Vapor Intrusion Guidance Table C-2, are typically used to establish initial benchmarks for indoor air in commercial buildings.

(2) The Upper Fence values from the NYSDOH Fuel Oil Study are typically used to establish initial benchmarks when evaluating residential indoor air.

(3) Air guidelines value referenced in Bureau of Toxic Substance Assessment NYSDOH Trichloroethene (TCE) In Indoor and Outdoor Air, August 2015 Fact Sheet.

(4) Air guidelines value referenced in Bureau of Toxic Substance Assessment NYSDOH Tetrachloroethene (PERC) In Indoor and Outdoor Air, September 2013 Fact Sheet.

(5) Air guidelines value referenced in Table 3.1 of Section 3.2.5 of the NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York", October 2006 and the Septemeber 2013 NYSDOH fact sheet titled "Tetrachloroethene (PERC) in Indoor and Outdoor Air".

380 Denotes a concentration that exceeds the Target Indoor Air Concentration as referenced in Note 1.

380 Bold denotes a concentration that exceeds the NYSDOH Upper Fence Value VOC Concentration as referenced in Note 2.

E = The analyte exceeds the calibration range of the instrument.

BsH = Data for this analyte may be biased high based on QC spike recoveries.

B= The analyte is present in the associated method blank as well as in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

= Sample collected prior to vapor intrusion mitigation measures.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

= Sample collected with SSDS and 3 AllerAir 6000DX and 2 AllerAir 5000D filters running.

D = Data reported from a dilution.

= Sample Collected with active SSDS and 3 AllerAir air 6000DX filters in-place.

\- Analyte not measured at a concentration above the analytical laboratory detection limit.

= Sample collected with SSDS and 2 Electrocorp Air Filters running.

= Sample collected with active SSDS ; no air filters.

TABLE 2

95 MT READ BOULEVARD
ROCHESTER, NEW YORK

SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUND (VOC)
INDOOR AIR TEST RESULTS IN MICROGRAMS PER CUBIC METER (ug/m^3)

DETECTED VOCs	AOC #1: Location R-2										Background (exterior upwind location)								AOC #2: Location R-7								USEPA 2001: BASE database (UG/M^3) (1)	NYSDOH VOC REFERENCE DATA (UG/M^3) (2)
	2007 E-2 3-30-07	2008 E-6 2-25-08	2008 E-8 11-24-08	2009 C-IA-2 11-8-09	2010 E-10 3-28-10	2012 E-12 3-26-12	2012 E-16 12-9-12	2013 E-18 12-8-13	2015 E-24 1-11-15	2015 E-26 3-24-15	2009 BG 11-8-09	2010 BG 3-28-10	2012 BG 3-26-12	2012 BG 12-9-12	2013 BG 12-8-13	2014 BG 3-30-14	2015 BG 1-11-15	2015 BG 3-24-15	2007 Bsmt 3-30-07	2008 Bsmt 11-24-08	2010 E-11 3-28-10	2012 E-14 3-26-12	2012 E-17 12-9-12	2013 E-20 12-8-13	2014 E-22 3-30-14	2015 E-25 1-11-15		
Chloroform	-	0.6	-	0.36	0.41	0.62	0.24 J	0.39 J	0.49	0.58	-	-	-	-	-	-	-	-	-	-	0.48	**1.5**	0.58	0.34 J	0.68	0.88	1.1	1.2
Trichloroethene	**6.01**	**15**	**7.87**	**7.8**	**3.9**	**4.4**	**3.39**	**3.65**	**5.64**	1.4	-	-	-	-	-	-	-	-	**166 E**	**57.4 JE**	**11**	**44**	**51.65**	**48.91 D**	**48.69**	**47.62**	2 (3)	2 (3)
Tetrachloroethene	**139 E**	23	8.92	15	2.8	3.4	3.87	8.65	11.87	0.75	0.82	-	0.33	-	-	-	-	-	**1,070 E**	**146 JE**	24	**130**	**81.37**	**129.52 D**	**162.07**	**198.01 D**	30 (4)	30 (4)
Acetone	94.9 E	61	**152 BE**	87	110 B	**280**	74.14	104.08 D	25.9	38.73	11	13 B	1.0	8.2	9.7	11.43	4.68	9.32	**234 E**	61.2 JBE	22 B	**150**	55.6	32.79 D	-	11.98	98.9	115
Methylene Chloride	**447 E**	**92**	**361 JBE**	**280**	**62**	**170**	**175.01**	**95.14 D**	**343.77 BsH, D**	21.56 B	5.5	10	-	0.87	0.73	3.44	5.97	4.69 B	**103 E**	6.39 UB	21	22	1.60	5.73	-	2.71	60 (5)	60 (5)
Benzene	2.09	0.99	1.98 J	1.3	0.75	1.4	0.54	0.73	1.12	1.02	1.1	0.66	0.41	0.64	-	0.57	-	0.83	3.15	1.64 J	0.72	3.0	0.6	0.29 J	0.48	0.93	9.4	13
Toluene	**384 E**	**87**	**232 JE**	**180**	**130**	**66**	25.59	23.82	**61.71 D**	10.57	5	0.86	0.6	0.87	-	1.24	-	0.56	**598 E**	10.8	11.0	**61**	4.25	2.60	3.88	6.13	43	57
Ethylbenzene	**10.2**	2.6	6.16	2.7	2.7	3.4	1.56	1.52	4.64	0.95	0.57	-	-	-	-	-	-	-	3.51	1.87 J	0.51	1.2	0.35 J	0.3 J	**18.99**	1.17	5.7	6.4
Chloromethane	1.49	1.2	-	1.3	1	1.1	0.93	-	-	-	0.98	0.99	1.1	0.91	-	-	-	-	1.18	-	0.99	1.2	0.91	-	-	-	3.7	4.2
Trichlorofluoromethane	3.71	**19**	6.29	**21**	5.7	7.8	5.68	4.1	3.32	3.65	1.5	1.4	1.5	1.4	1.24		0.9	2.3	6.45	7.06	4.9	5.2	2.47	2.59	-	1.85	18.1	12
1,1-Dichloroethene	-	**0.75**	-	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**35.6 E**	**1.10 J**	**1.2**	0.3	0.36	-	-	-	<1.4	0.4
Vinyl Acetate	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	-	-	-	NA	NA
2-Butanone (MEK)	21.7 E	15	26.2 JE	10	8.7 B	10	9.52	3.54	4.54	13.59	1.3	2.2 B	-	0.74	0.88	1.21	-	1.53	-	11.2	6.4 B	13	12.39	3.07	5.81	3.27	12.0	NA
cis-1,2-Dichloroethene	**5.58**	**20**	**2.71 J**	**9.8**	**1**	**2.1**	**0.67**	**1.63**	**1.59**	-	-	-	-	-	-	-	-	-	**1,260 E**	**84.4 JE**	**53**	**270**	**32.08**	**29.82**	**45.20**	**32.67**	<1.9	0.4
4-Methyl-2-pentanone	39.2	2.1	15	2.1	1.3	1.2	0.74	0.37 J	2.21	1.31	0.19	-	-	-	-	-	-	-	3.73	4.83	1.1	1.6	0.9	-	0.7	0.78	6.0	NA
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.779 J**	-	-	-	-	-	-	<0.9	0.4
m,p-Xylenes	**48.1 E**	8.6	**23.5**	9.5	10	10	6.37	6.03	**18.99 BsH**	3.25	1.9	0.4	0.38	-	-	-	-	-	**12.1**	7.85 J	1.7	3.4	1.43	1.04	**76.74**	4.55 BsH	22.2	11
o-Xylene	**16.9**	3.1	**8.06**	4	3.9	3.5	2.17	1.95	6.03	0.91	0.74	-	-	-	-	-	-	-	4.47	3.13 J	0.73	1.2	0.39 J	0.39 J	**26.84**	2.04	7.9	7.1
Styrene	**27.8 E**	**2.5**	**27.6 JE**	**47**	**3**	**1.7**	**1.96**	0.64	**3.23**	0.85	0.23	-	-	-	-	-	-	-	1.15	0.587 J	-	0.41	-	-	-	-	1.9	1.4
1,4-Dichlorobenzene	**9.26**	**21**	**2.84**	**40**	**3.4**	-	-	-	0.72	-	0.36	-	-	-	-	-	-	0.48 J	-	-	-	0.22	-	-	-	-	5.5	1.2
Trans-1,2-Dichloroethene	-	0.77	-	4.1	19	3.7	0.79	1.19	0.56	0.59	-	-	-	-	-	-	-	-	21	2.10 J	2.2	16	0.83	1.07	-	0.71	NA	NA
1,2-Dichloropropane	**1.14**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.5**	-	-	-	-	-	-	-	<1.6	0.4
Freon 113	-	0.6	0.768	0.61	0.54	0.89	0.69 J	0.54 J	-	1.15	0.47	0.5	0.7	0.54	-	-	-	1.15	-	-	0.47	1.1	-	-	-	-	NA	NA
1,1,1-Trichloroethane	1.99	0.88	**2.82 J**	0.5	0.27	0.41	-	-	0.38 J	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	20.6	2.5
Vinyl Chloride	-	-	-	**0.87**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14.1**	-	**3.9**	-	**0.82**	0.1	-	**1.12**	<1.9	0.4
2-Hexanone	-	0.81	-	0.8	0.55	0.32	-	-	-	-	-	0.29	-	-	-	-	-	-	-	-	0.41	0.32	1.52	-	-	-	NA	NA
Carbon Tetrachloride	-	0.45	0.528 J	0.43	0.38	0.7	0.44	0.31	0.38 J	1.13	0.42	0.43	0.88	0.5 J	0.31	0.50 J	-	0.94	-	0.502 J	0.38	0.8	0.31	0.31	0.38 J	0.38 J	<1.3	1.3
Dichlorodifluoromethane	-	2.7	-	2.2	2.5	2.7	2.62	3.26	2.18	4.25	1.9	2.1	2.3	2.13	2.57	2.42	2.08	4.25	-	NT	1.9	2.2	2.03	2.62	-	2.13	16.5	10
Ethanol	-	36	91.6 JE	61	82	140	54.87	37.71 D	181.76 D	273.39 D	19	5.9	26	17.87	4.83	5.09	9.92 BsH	16.54	-	19.9 JE	33	48	9.56	14.63	-	11.11 BsH	210.0	NA
Ethyl Acetate	-	5.7	NT	3.8	8.6	14	3.82	-	3.53	21.73	0.29	-	-	0.61	-	11.42	-	5.87	-	NT	-	4.4	-	-	3.28	-	5.4	NA
4-Ethyl Toluene	-	3.4	NT	6	3.4	1.1	0.18	0.44 J	1.18	0.49	0.24	-	-	-	-	-	-	-	-	NT	0.28	0.35	0.44 J	-	-	0.25 J	3.6	NA
n-Heptane	-	7.6	**25.2 JE**	1.9	2.7	4.2	1.39	5.49	3.24	1.56	0.66	-	0.16	-	-	-	-	-	-	-	0.41	1.6	0.66	-	-	1.15	NA	18
Hexane	-	2.5	4.08	2.2	0.77	-	1.97	1.2 J	1.73 J	**16.5**	1.1	1.7	-	2.19	0.32 J	0.67 J	-	5.78	-	2.99	1.8	-	0.99 J	0.81 J	2.93	1.30 J	10.2	14
Isopropanol	-	65	NT	350	370	160	214.72	56.44 D	156.07 D	117.3 D	3.5	0.69	-	2.23	0.54 J	1.52	0.69 J	3.39	-	NT	33	100	1.94	2.55	4.96	2.65	NA	NA
Tetrahydrofuran	-	**3.7**	NT	**3.9**	**6.8**	**11**	**3.07**	0.38	**1.53**	**1.33**	-	-	-	-	-	-	-	-	-	NT	**4.3**	**7.6**	**1.03**	-	-	0.5	NA	0.8
1,2,4-Trimethylbenzene	-	**15**	**45.6 JE**	**28**	**19**	**3.1**	**3.64**	2.36	**6.74**	1.03	0.93	-	0.19	-	-	-	-	0.59	-	**8.54**	1	1.7	0.64	0.49	0.44 J	0.49	9.5	2.5
1,3,5-Trimethylbenzene	-	**4.9**	**16.8**	**8.6**	**6.7**	2	1.77	0.98	2.61	0.84	0.31	-	-	-	-	-	-	-	-	2.63	0.36	0.62	0.39 J	-	-	-	3.7	3.9
Cyclohexane	-	-	-	1	-	0.7	0.31 J	-	0.55	-	0.42	-	-	-	-	-	-	0.62	-	-	-	8.3	-	-	-	0.41	NA	6.3
1,3-Butadiene	-	-	-	0.17	-	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3.0	NA
Naphthalene	-	-	-	-	-	-	-	-	0.79 J	-	-	-	-	-	-	-	-	0.58 J	-	-	-	1.5	-	-	-	-	5	NA
1,1-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	-	-	NA	NA
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	-	-	-	-	NA	NA
Methyl tert-Butyl Ether (MTBE)	-	-	-	-	-	-	1.84	-	0.51	-	-	-		-	-	-	-	-	-	-	0.22	0.61	-	-	0.51	-	11.5	14
1,4-Dioxane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25 J	-	-	-	NA	NA
Isopropylbenzene	-	-	-	-	-	-	-	-	0.29 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	0.8
Benzene Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	NA
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	0.5
4-Isopropyltoluene	-	-	-	-	-	-	0.75	-	1.02 BsH	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48 J	-	-	0.48 BsH, J	NA	NA
n-Butylbenzene	-	-	-	-	-	-	-	-	0.88 BsH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA	1.1
Carbon Disulfide	-	-	-	0.35	0.3	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	4.2	NA

Notes:

Samples analyzed by United States Environmental Protection Agency (USEPA) Method TO-15.

(1) The 90th percentile values from EPA Building Assessment and Survey Evaluation (BASE), and as per NYSDOH Final Soil Vapor Intrusion Guidance Table C-2, are typically used to establish initial benchmarks for indoor air in commercial buildings.

(2) The Upper Fence values from the NYSDOH Fuel Oil Study are typically used to establish initial benchmarks when evaluating residential indoor air.

(3) Air guidelines value referenced in Bureau of Toxic Substance Assessment NYSDOH Trichloroethene (TCE) In Indoor and Outdoor Air, August 2015 Fact Sheet.

(4) Air guidelines value referenced in Bureau of Toxic Substance Assessment NYSDOH Tetrachloroethene (PERC) In Indoor and Outdoor Air, September 2013 Fact Sheet.

(5) Air guidelines value referenced in Table 3.1 of Section 3.2.5 of the NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York", October 2006 and the Septemeber 2013 NYSDOH fact sheet titled "Tetrachloroethene (PERC) in Indoor and Outdoor Air".

380 Denotes a concentration that exceeds the Target Indoor Air Concentration as referenced in Note 1.

380 Bold denotes a concentration that exceeds the NYSDOH Upper Fence Value VOC Concentration as referenced in Note 2.

E = The analyte exceeds the calibration range of the instrument.

BsH = Data for this analyte may be biased high based on QC spike recoveries.

B= The analyte is present in the associated method blank as well as in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

= Sample collected prior to vapor intrusion mitigation measures.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

= Sample collected with SSDS and 3 AllerAir 6000DX and 2 AllerAir 5000D filters running.

D = Data reported from a dilution.

= Sample Collected with active SSDS and 3 AllerAir air 6000DX filters in-place.

\- Analyte not measured at a concentration above the analytical laboratory detection limit.

= Sample collected with SSDS and 2 Electrocorp Air Filters running.

= Sample collected with active SSDS ; no air filters.