

8976 Wellington Road
Manassas, VA 20109

December 13, 2019

Jessica LaClair
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau E
625 Broadway, 12th Floor
Albany, New York 12233-7017

Re: Subslab Depressurization System Completion and Startup Report–
Building 330D North System
Former IBM East Fishkill Facility
NYSDEC Site No. 314054, EPA ID No. NYD000707901,

Dear Ms. LaClair:

Enclosed is the Subslab Depressurization System Completion and Startup Report for the Building 330D (B330D) North System at the former IBM East Fishkill facility in Hopewell Junction, New York, currently owned by iPark East Fishkill LLC. The B330D North System is an expansion of the subslab depressurization system originally installed for the former IBM 80K manufacturing area of B330D.

If you have any questions, please contact me at (703) 257-2583.

Sincerely yours,
International Business Machines Corporation

Dean W. Chartrand
Program Manager
Corporate Environmental Affairs

Enclosure: Subslab Depressurization System Completion and Startup Report– Building 330D
North System

cc:	Julia Kenney	NYSDOH	(w/enclosure via e-mail)
	Mike Buckley	National Resources	(w/enclosure via e-mail)
	Carl Monheit	National Resources	(w/enclosure via e-mail)
	Gary Marone	Global Foundries	(w/enclosure via e-mail)
	David Shea	Sanborn Head	(w/enclosure via e-mail)

**SUBSLAB DEPRESSURIZATION SYSTEM
COMPLETION AND STARTUP REPORT
BUILDING 330D NORTH SYSTEM**

*Former IBM East Fishkill Facility
Hopewell Junction, New York*



*Prepared for IBM Corporate Environmental Affairs
File No. 2999.05
December 2019*

Dean Chartrand
IBM Corporate Environmental Affairs
8976 Wellington Road
Manassas, VA 20109

December 13, 2019
File No. 2999.05

Re: Subslab Depressurization System Completion and Startup Report
Building 330D North System
Former IBM East Fishkill Facility
Hopewell Junction, New York
NYSDEC Site No. 314054, EPA ID No. NYD000707901

Dear Mr. Chartrand:

The enclosed report documents the completion of installation and presents the results of startup performance monitoring for the Building 330D North subslab depressurization (SSD) system installed at the former IBM East Fishkill facility, currently owned by iPark East Fishkill LLC.

Please contact us if you require additional information.

Very truly yours,
SANBORN, HEAD ENGINEERING, P.C.



David Shea, P.E.
Sr. Vice President



Joseph W. Corsello
Project Manager

Encl. Subslab Depressurization System Completion and Startup Report– Building 330D
North System

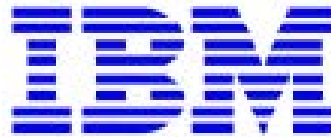
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**SUBSLAB DEPRESSURIZATION SYSTEM COMPLETION AND STARTUP
REPORT**

BUILDING 330D NORTH SYSTEM

Former IBM East Fishkill Facility
Hopewell Junction, New York

Prepared for
IBM Corporation



Prepared by
Sanborn, Head Engineering, P.C.

File 2999.05
December 2019

NYS Professional Engineer Certification
Subslab Depressurization System Completion and Startup Report– Building 330D North
System
Former IBM East Fishkill Facility
EPA ID No. NYD000707901
NYSDEC Site No. 314054

I, David Shea, certify that I am currently a NYS registered professional engineer. I had primary direct responsibility for implementation of the subject construction program, and I certify that the subslab depressurization (SSD) system in Building 330D was implemented and that all construction activities were completed in substantial conformance with the design plans and specifications prepared by Sanborn, Head Engineering, PC (SHPC). This statement of conformance of the installation with the design documents is based on SHPC's on-site observations during construction and start-up of the SSD system in Building 330D.



Date: December 13, 2019

Name: David Shea

NYS P.E. License No. 70026

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**SUBSLAB DEPRESSURIZATION SYSTEM
COMPLETION AND STARTUP REPORT– BUILDING 330D NORTH
SYSTEM
TABLE OF CONTENTS**

1.0	INTRODUCTION.....	1
2.0	BACKGROUND INFORMATION.....	1
3.0	SUBSLAB DEPRESSURIZATION SYSTEM INSTALLATION AND PERFORMANCE	2
3.1	B330D North SSD System Description	2
3.2	Vapor Extraction Performance Monitoring.....	4
3.3	VOC Mass Removal.....	4
3.4	Operations and Maintenance	5
4.0	INDOOR AIR CONFIRMATORY SAMPLING.....	6
5.0	CONCLUSIONS	6

EXHIBITS

Exhibit 3.1	System VE-1 Equipment Enclosure Exterior
Exhibit 3.2	System VE-1 Equipment Enclosure Interior
Exhibit 3.3	Influent Total VOC Concentration vs. Time
Exhibit 3.4	Total VOC Mass Removal vs. Time
Exhibit 3.5	Operations and Maintenance Plan

FIGURES

Figure 1	Site Location Plan
Figure 2	Building Location Plan
Figure 3	Occupancy and Subslab Depressurization System Summary Figure
Figure 4	Subslab Pressure Response to Vapor Extraction
Figure 5	Summary of PCE and TCE Concentrations for 8-Hour Indoor Air Samples Collected by Others

APPENDICES

Appendix A	Limitations
Appendix B	Walden Environmental IAQ Report

1.0 INTRODUCTION

This report documents the completion of installation and presents the results of performance monitoring, including confirmatory indoor air sampling, associated with the subslab depressurization (SSD) system in the northern portion of Building 330D (B330D) at the former IBM East Fishkill facility located in Hopewell Junction, New York (the site). A site location plan is provided as Figure 1, and the location of B330D at the site is shown on Figure 2. B330D is currently owned by iPark East Fishkill LLC (iPark), also referred to as National Resources (NR). iPark renumbered its buildings in 2019, and B330D was renumbered as Building 700. However, to be consistent with prior reports, the building will be referred to as B330D herein.

The work described herein was conducted on behalf of IBM by Sanborn, Head Engineering, PC (SHPC). Progress updates and relevant data have been communicated to the New York State Department of Environmental Conservation and Department of Health (the Departments) through periodic correspondence and meetings.

The services conducted, and this report, are subject to the standard limitations for this type of work, as described in Appendix A.

2.0 BACKGROUND INFORMATION

IBM owned the East Fishkill facility property until July 2015, at which time the property was transferred to Global Foundries (GF). GF subsequently subdivided the property into 8 lots and sold 6 lots to iPark in September 2017. The lot lines as of the date of this report are shown on Figure 2. B330D is located on Lot 7, which is owned by iPark East Fishkill LLC.

B330D was designated for source investigation under IBM's Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan¹ based on anomalous levels of tetrachloroethene (PCE) detected in first floor indoor air samples collected in 2007 centered on the former MLC 80K manufacturing area (referred to as the 80K area) located in the northern end of the building. In 2008, IBM initiated source investigation and mitigation measures in the former 80K area, the results of which were provided to the Departments in a December 2008 report.² IBM subsequently installed an SSD system for the most of the 80K area to reduce PCE levels in indoor air and remove VOC source mass. Results of the SSD system performance assessment and subsequent confirmatory indoor air quality (IAQ) sampling were presented in a December 2011 report,³ and the 80K area SSD system has been operating continuously since 2010.

In September 2017, iPark purchased the building and renovations have been ongoing for new tenants, including Crepini located in the former 80K area in the northern portion of B330D. This report documents the installation, startup, and subsequent IAQ testing of the SSD system

¹ Sanborn Head Engineering, P.C., *Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment, IBM East Fishkill Facility, Hopewell Junction, NY*, June 15, 2009.

² Sanborn, Head Engineering, P.C., *Report of Findings, Building 330D VOC Source Investigation and Mitigation, IBM East Fishkill Facility, Hopewell Junction, New York*, December 24, 2008.

³ Sanborn, Head Engineering, P.C., *Performance Monitoring and Confirmatory Sampling Results, Building 330D, VOC Source Assessment, Hopewell Junction, NY, IBM East Fishkill Facility*, December 2011.

in the northern portion of B330D, which expands the coverage of the 80K area system to cover the Crepini tenant space. The expanded 80K area system will be referred to as the B330D North SSD System going forward. Equipment associated with the B330D North SSD system is referred to as System VE-1.

3.0 SUBSLAB DEPRESSURIZATION SYSTEM INSTALLATION AND PERFORMANCE

In November and December 2018, IBM installed a new SSD system equipment enclosure on the northwest side of B330D, as shown on Figure 3. The new equipment enclosure was subsequently connected to the existing SSD vacuum piping and began operation on January 11, 2019.

The B330D North SSD System interior piping to accommodate the expansion for the Crepini space was constructed in May and June 2019 and began operation on June 26, 2019. The layout of the B330D North SSD System is shown on Figure 3, along with interim SSD systems VE-5 and VE-6, which are currently operating in the central and southern portions of B330D. Figure 3 also provides a summary of current occupancy within B330D as reported to IBM by iPark.

The following sections provide a description of the B330D North SSD System and summarize its startup, including operating conditions and performance results.

3.1 B330D North SSD System Description

The purpose of the B330D North SSD System is to establish control of cross-slab pressure gradients to reduce the potential for vapor intrusion to impact IAQ and to capture subslab VOC vapors.

Subslab vapor is withdrawn from extraction ports EP4017 and EP4023, and suction pit SP4001, as shown on Figure 3. Vapor is withdrawn from beneath the slab using a 25-horsepower, regenerative-type vacuum blower installed in an equipment enclosure (System VE-1) located on the northwest side of B330D. Subslab vapor is pulled through a vapor-liquid separator and treated via three 700-lb granular activated carbon (GAC) adsorber units plumbed in a lead-lag-polish series configuration. The treated vapor then enters the vacuum blower and is discharged above the B330D roofline and away from any outside air intakes. The system is equipped with instruments, controls, and alarms so that the appropriate personnel are notified automatically in the event of a malfunction. Photographs of System VE-1 enclosure are provided in Exhibits 3.1 and 3.2 below.

Exhibit 3.1: System VE-1 Equipment Enclosure Exterior



Exhibit 3.2: System VE-1 Equipment Enclosure Interior



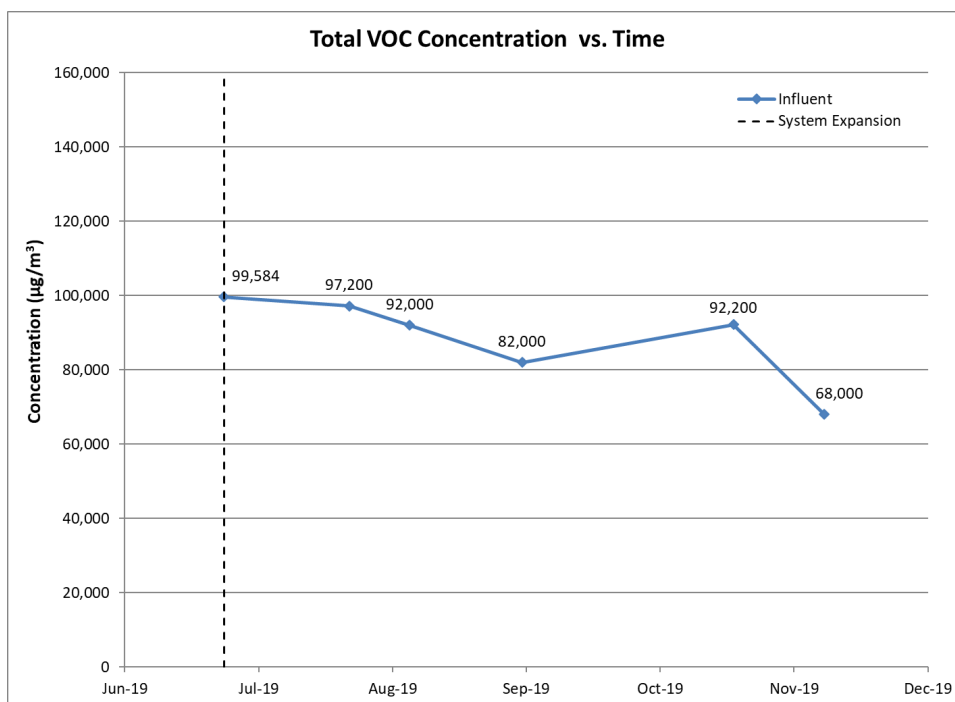
3.2 Vapor Extraction Performance Monitoring

The applied vacuums and flow rates measured at the operating extraction ports and suction pit during startup of the B330D North SSD System are shown on Figure 4. A combined total of 310 standard cubic feet per minute (scfm) of subslab vapor is being extracted. The resulting cross-slab differential pressure measurements collected at these conditions are also shown on Figure 4, along with the inferred extent of the subslab pressure response depicted by the differential pressure isopleth. The applied vacuums, extracted vapor flow rates, and subslab differential pressure response are generally consistent with observations made during pilot testing of EP4017 and EP4023, and historical performance of SP4001, and indicate subslab depressurization of the Crepini tenant space footprint. The existing interim SSD System VE-5 was off while differential pressure measurements were collected.

3.3 VOC Mass Removal

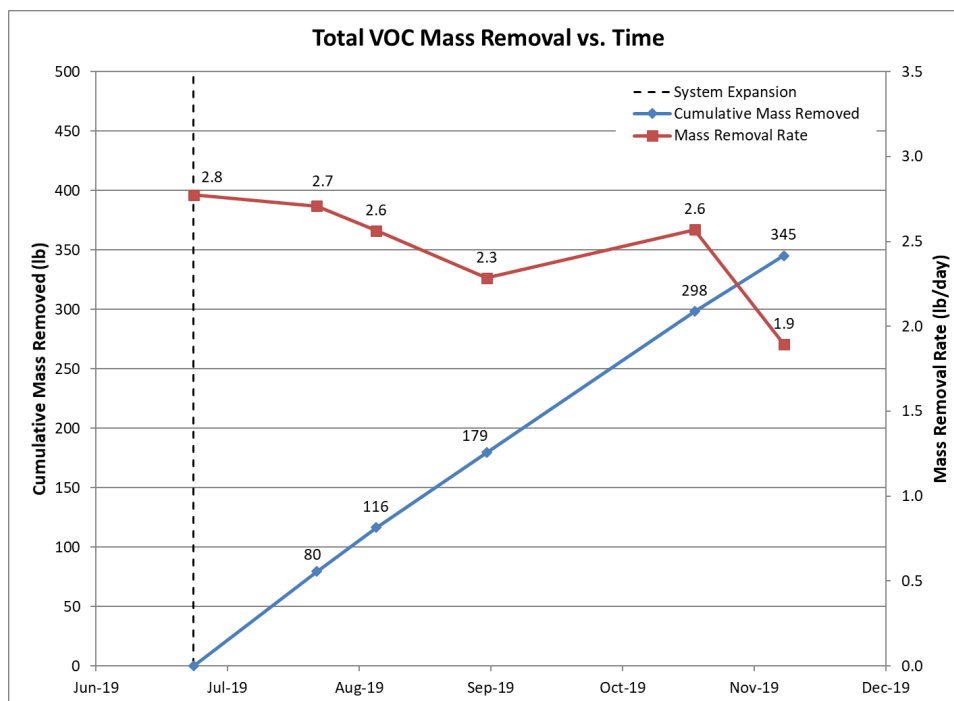
The B330D North SSD System is successfully removing VOC mass from beneath the building slab. To estimate the total VOC mass removed by the system, process vapor samples have been collected from the influent of the GAC treatment train a total of six times since the expansion of operations on June 26, 2019. The plot in Exhibit 3.3 below shows the total VOC concentrations versus time at the influent point of the GAC treatment train. Since subslab vapor was previously being extracted from the existing 80K area SSD system, the typical steep decrease in VOC concentrations following initial startup was not observed. The VOC concentrations shown in Exhibit 3 are generally consistent with recent historical data collected from the 80K area SSD system before its expansion to the B330D North SSD System in June 2019.

Exhibit 3.3: Influent Total VOC Concentration vs. Time



The plot in Exhibit 3.4 below shows the total VOC mass removal rate and cumulative mass removed since the B330D North SSD System was brought online on June 26, 2019. A total of approximately 345 pounds of VOCs have been removed from June 26 through November 13, 2019.

Exhibit 3.4: Total VOC Mass Removal vs. Time



To monitor treatment performance of the extracted vapor stream, grab samples will be collected downstream of each of the three GAC vessels on an approximately quarterly basis. Once the sampling data indicated the existing GAC is near exhaustion, it will be replaced with virgin GAC.

3.4 Operations and Maintenance

The B330D North SSD System operations and maintenance monitoring program is outlined below in Exhibit 3.5. In addition to the monitoring described below, the SSD system is equipped with system shut-down alarms that notify operators of when the system is not operational (e.g., during power outages, equipment malfunction).

Exhibit 3.5: Operations and Maintenance Plan

Task	Frequency
SSD system operational monitoring (blower run, vacuum, and flow – manual checks)	Weekly
SSD system combined influent vapor grab Summa® sampling and VOC analysis	Monthly
SSD system GAC treatment train grab Summa® sampling and VOC analysis	Quarterly
SSD system performance monitoring (extraction port flow rates and subslab differential pressures)	Annually

4.0 INDOOR AIR CONFIRMATORY SAMPLING

On August 26, 2019, approximately two months following start-up of the B330D North SSD System, Walden Environmental Engineering, PLLC (Walden) conducted IAQ testing in the Crepini tenant space on behalf of iPark. The IAQ testing is described in Walden's summary report, which is included as Appendix B.

As described in Walden's report, indoor air samples were collected at 11 locations while the SSD system was operating and the HVAC was operating under occupied conditions. PCE and trichloroethene (TCE) sample results are shown on Figure 5. PCE was detected in each indoor air sample at concentrations ranging from 1.3 to 7.3 µg/m³. TCE was detected at four of the indoor air sample locations at concentrations ranging from 0.23 to 0.56 µg/m³.

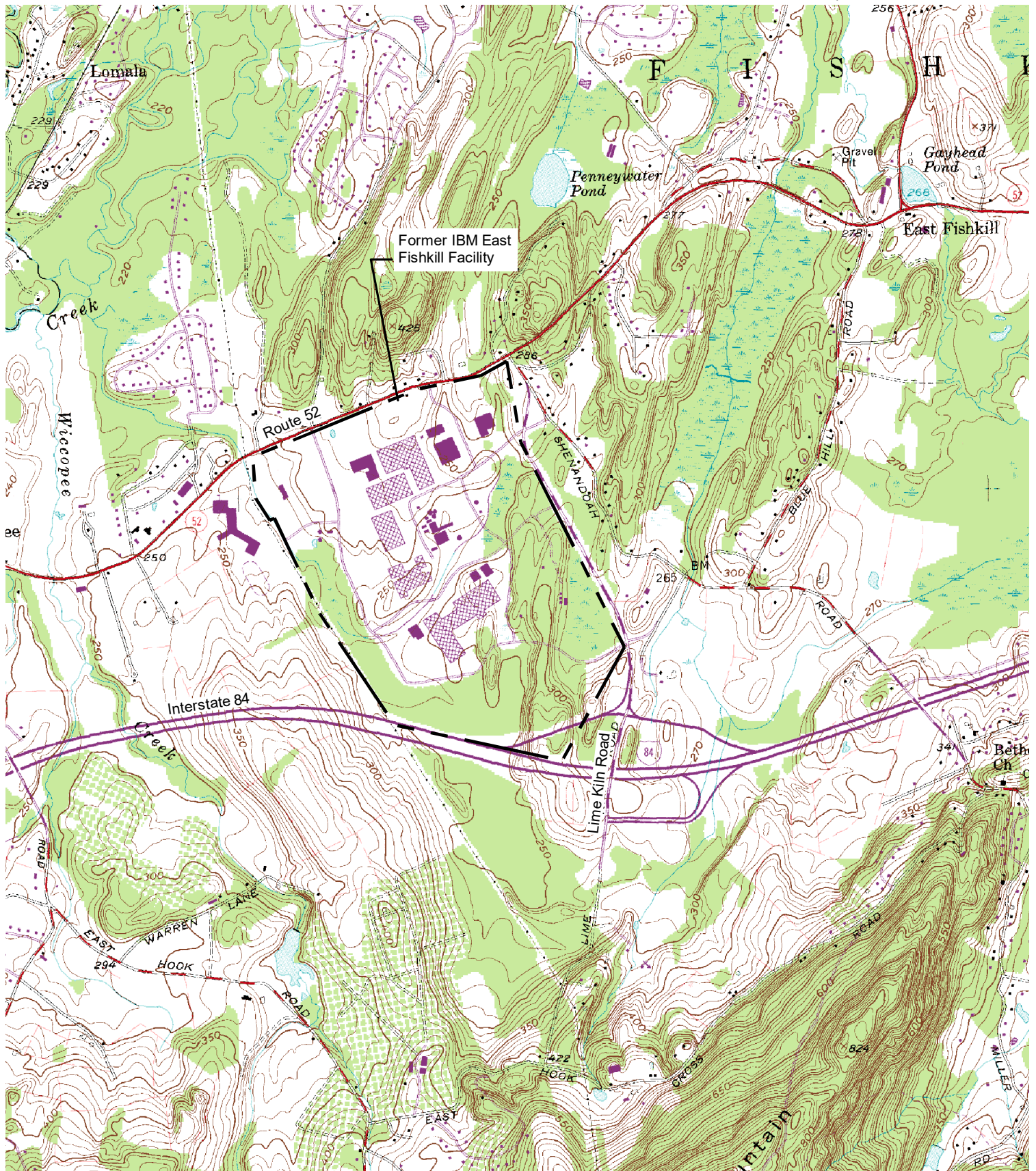
In a September 27, 2019 letter to iPark, the Departments noted that methylene chloride was detected in indoor air above typical background concentrations and requested that a second round of indoor air sampling be conducted during the 2019/2020 heating season.

5.0 CONCLUSIONS

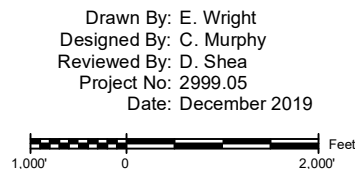
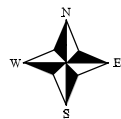
The results of the B330D North SSD System performance monitoring and indoor air sampling indicate the system is meeting its design objectives of depressurizing the subslab and reducing VOC vapor intrusion to achieve acceptable indoor air quality. Confirmatory indoor air sampling indicates that the SSD system has reduced PCE concentrations within the Crepini tenant space to levels approaching background and are acceptable for occupancy, and TCE concentrations to levels at or approaching non-detectable concentrations.

IBM intends to operate and maintain the B330D North SSD System as described in Section 3.4.

FIGURES



Notes:
Base map taken from 7.5 minute
USGS Quadrangle Maps: Hopewell
Junction, New York, Dated 1957,
Photorevised in 1981.



SANBORN HEAD ENGINEERING

Figure 1

Site Location Plan

Subslab Depressurization Completion and
Startup Report - Building 330D North System

Former IBM East Fishkill Facility
Hopewell Junction, New York



Figure 2

B330D Location Plan

Subslab Depressurization Completion
and Startup Report - Building 330D
North System

Former IBM East Fishkill Facility
Hopewell Junction, New York

Drawn By: E. Wright
Designed By: C. Murphy
Reviewed By: D. Shea
Project No: 2999.05
Date: December 2019

Figure Narrative

This figure shows the buildings at the former IBM East Fishkill facility. Building B330D is highlighted.

Legend

--- Property Line

 Unlabeled features include wastewater treatment tanks, pump houses, trailers, and other structures and features not intended for human occupancy

B330D Indicates building number

 Indicates the location of B330D

 Indicates the approximate extent of the B330D North SSD System

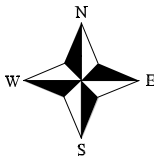
GlobalFoundries

Lot 1 GlobalFoundries U.S.2 LLC
Lot 5 GlobalFoundries U.S.2 LLC

i.Park

Lot 2 i.Park East Fishkill I LLC
Lot 3 i.Park East Fishkill I LLC
Lot 4 i.Park East Fishkill LLC
Lot 6 i.Park East Fishkill LLC
Lot 7 i.Park East Fishkill LLC
Lot 8 i.Park East Fishkill LLC

 - Subdivision (GlobalFoundries U.S.2 LLC)
 - Subdivision (i.Park East Fishkill LLC)
 - Subdivision (i.Park East Fishkill I LLC)



200' 100' 0 200' 400' Feet

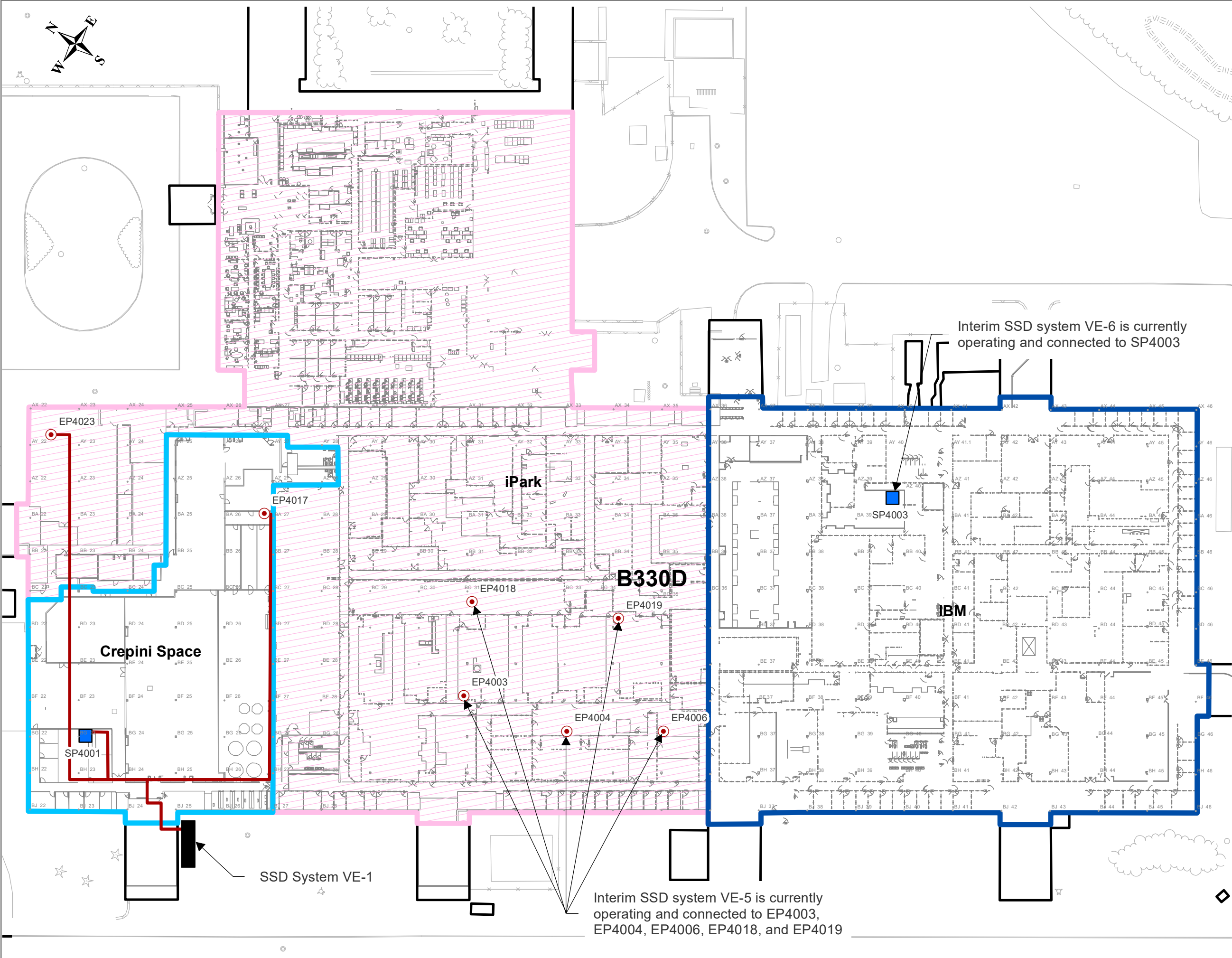


Figure 3

Occupancy and Subslab Depressurization System Summary Figure

Subslab Depressurization Completion and Startup Report - Building 330D North System

Former IBM East Fishkill Facility
Hopewell Junction, New York

Drawn By:	E. Wright
Designed By:	J. Corsello
Reviewed By:	D. Shea
Project No:	2999.05
Date:	December 2019

Figure Narrative

This figure shows the B330D North Subslab Depressurization (SSD) System piping installed by IBM, as well as information on occupied areas of the building.

Occupied areas and tenant spaces are based on information provided by iPark, and are current as of December 2019. IBM is to be notified by the building owner when tenants vacate or occupy spaces within the building.

Legend

- Crepini Tenant Space
- IBM Tenant Space
- iPark
- Unoccupied
- B330D North SSD System Piping
- EP4019 Extraction port connected to an operating SSD system
- SP4003 Subslab vapor suction pit connected to an operating SSD system

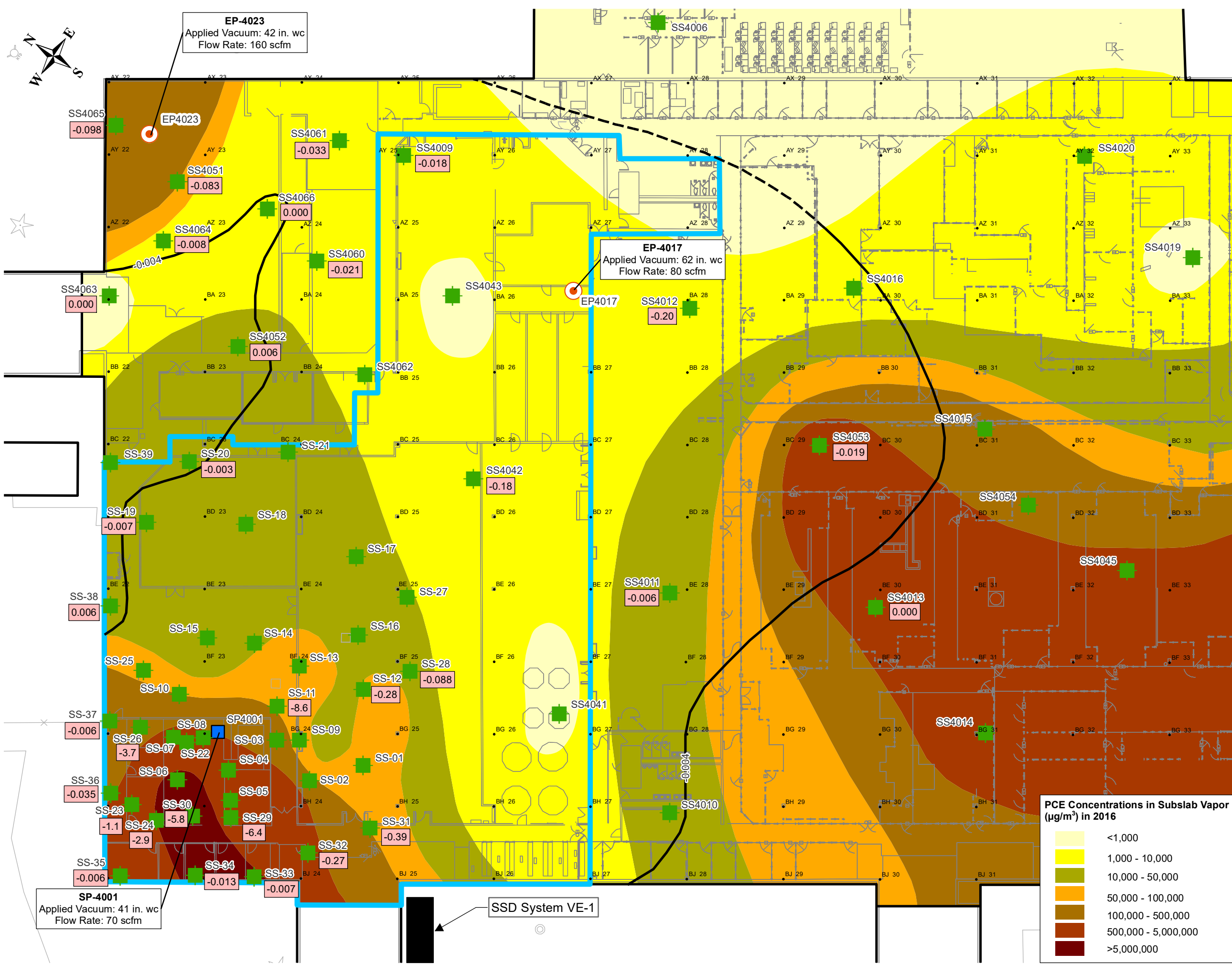


Figure 4

Subslab Pressure Response to Vapor Extraction

Subslab Depressurization Completion and Startup Report - Building 330D North System

Former IBM East Fishkill Facility
Hopewell Junction, New York

Drawn By: H. Pothier \ E. Wright
Designed By: J. Corsello
Reviewed By: D. Shea
Project No: 2999.05
Date: December 2019

Figure Narrative

This figure shows the inferred subslab pressure response from the B330D North subslab depressurization (SSD) system extracting vapor from SP4001, EP4017, and EP4023, and the measurements recorded at those extraction points upon startup. The subslab pressure response footprint represents the outer limit of the -0.004 inches of water column differential pressure based on measurements recorded on September 5, 2019. Other interpretations are possible.

The differential pressure contours overlay the inferred subslab vapor tetrachloroethene (PCE) concentration isopleths based on subslab vapor samples collected in 2016.

Legend

Subslab Vapor Monitoring Port

Subslab Vapor Extraction Port connected to the B330D North SSD system

Subslab Vapor Suction Pit connected to the B330D North SSD system

-0.004 Differential pressure contour (inches of water column).

SP4001

in. wc Applied Vacuum inches of water column (in. wc.)

scfm Flow Rate (std. cu. ft. per min.)

-0.004

Observed pressure differential between the subslab and room after SSD start-up (in. wc). Negative values indicate subslab pressure is less than indoor air pressure.

Crepini Tenant Space

PCE Concentrations in Subslab Vapor (µg/m³) in 2016

<1,000

1,000 - 10,000

10,000 - 50,000

50,000 - 100,000

100,000 - 500,000

500,000 - 5,000,000

>5,000,000

15 7.5 0 15 30 Feet

SANBORN HEAD ENGINEERING

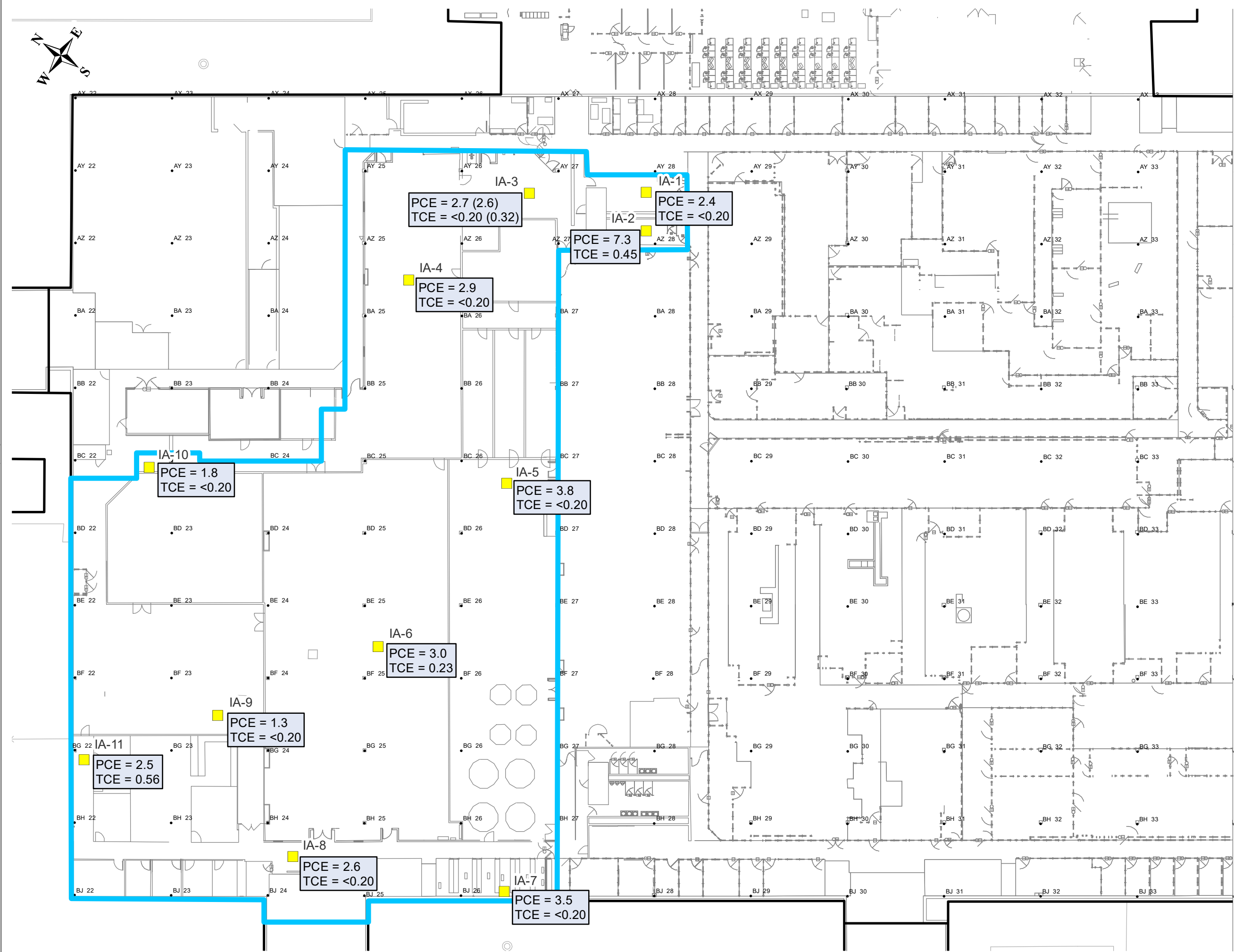


Figure 5

Summary of PCE and TCE Concentrations for 8-Hour Indoor Air Samples Collected by Others

Subslab Depressurization Completion and Startup Report - Building 330D North System

Former IBM East Fishkill Facility
Hopewell Junction, New York

Drawn By: H. Pothier
Designed By: J. Corsello
Reviewed By: D. Shea
Project No: 2999.05
Date: December 2019

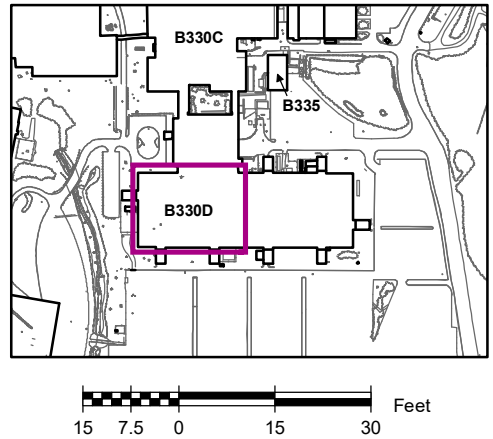
Figure Narrative

This figure shows tetrachloroethene (PCE) and trichloroethene (TCE) results for indoor air confirmatory laboratory analytical samples collected in the Crepine tenant space by Walden Environmental Engineering PLLC on behalf of iPark on August 26, 2019 while the B330D North SSD system was operating. The samples were collected as approximately 8-hour time-weighted average samples using 6-L SUMMA canisters. Results are shown in micrograms per cubic meter (µg/m³). Refer to Appendix B of this report for the full list of sampling results.

Analytical results are from Table 2 of Walden's September 16, 2019 report titled "Building 700 (Former 330D) Crepine Space, Indoor Air Quality Testing Summary Report". Building linework is from Figure 2 of Walden's report.

Legend

- Indoor Air Location Sampled by Walden
- PCE = 1.3 Tetrachloroethene (PCE) sample result (µg/m³)
- TCE = <0.20 Trichloroethene (TCE) sample result (µg/m³)
- Crepine Tenant Space



APPENDIX A

LIMITATIONS

APPENDIX A

SHPC LIMITATIONS

1. The observations and conclusions described in this report are based in part on the data obtained from a finite number of samples from widely spaced locations. The figures are intended to depict inferred conditions during a given period of time, consistent with available information. The actual conditions will vary from that shown, both spatially and temporally. Other interpretations are possible. The nature and extent of variations between sampling locations may not become evident until further investigation is initiated. If variations or other latent conditions then appear evident, it may be necessary to re-evaluate the conclusions of this report.
2. The conclusions contained in this report are based in part upon various types of chemical data as well as historical and hydrogeologic information developed by previous investigators. While SHPC has reviewed that data available to us at the time the report was prepared and information as stated in this report, any of SHPC's interpretations and conclusions that have relied on that information will be contingent on its validity. SHPC has not performed an independent assessment of the reliability of the data; should additional chemical data, historical information, or hydrogeologic information become available in the future, such information should be reviewed by SHPC and the interpretations and conclusions presented herein may be modified accordingly.
3. Sampling and quantitative laboratory testing was performed by others as part of the investigation as noted within the report. Where such analyses have been conducted by an outside laboratory, unless otherwise stated in the report, SHPC has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data. It must be noted that additional compounds not searched for during the current study may be present in vapor and indoor air at the site. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their distribution within the vapor and indoor air may occur due to the passage of time, seasonal water table fluctuations, recharge events, and other factors.
4. This report has been prepared for the use of the IBM Corporation for specific application to the former IBM East Fishkill facility in accordance with generally accepted hydrogeologic and engineering practices. No warranty, expressed or implied, is made. The contents of this report should not be relied on by any other party without the express written consent of SHPC.
5. In preparing this report, SHPC has endeavored to conform to generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area. SHPC has attempted to observe a degree of care and skill generally exercised by the technical community under similar circumstances and conditions.

APPENDIX B

WALDEN ENVIRONMENTAL IAQ REPORT



Sent via email to jess.laclair@dec.ny.gov

September 16, 2019
iPARK0118.33

Ms. Jessica LaClair
Environmental Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7013

Re: iPark 84, Former IBM East Fishkill Facility
Building 700 (Formerly 330D)
Crepini Space
Hopewell Junction, New York 12533
Indoor Air Quality Testing Summary Report

Dear Ms. LaClair:

Walden Environmental Engineering, PLLC (Walden) has prepared this letter to summarize the results of the indoor air quality (IAQ) testing conducted on August 26, 2019 in the Crepini space within Building 700 (formerly Building 330D). Building 700 is owned by National Resources (NR, iPark East Fishkill LLC); Crepini is leasing space in the northwestern portion of the building, where it will perform food processing and packaging operations. Refer to Figure 1 for the site location map. IAQ testing was conducted in the Crepini space prior to tenant occupancy as required by NYSDEC and NYSDOH. The purpose of the testing was to verify that IAQ is acceptable before the Crepini tenant takes occupancy and begins operating in the space.

Walden, at the request of National Resources, performed the IAQ testing in accordance with prescribed protocols previously approved by NYSDEC. All work was performed in accordance with the *RCRA Facility Investigation (RFI) VOC Source Assessment Work Plan* (RFI Work Plan) dated June 15, 2009, prepared by Sanborn, Head Engineering, PC and Walden's IAQ Testing Plan letter (Testing Plan) dated August 12, 2019 which was approved by NYSDEC on August 23, 2019.



Summary of HVAC Conditions Within the Building

The Crepini space within Building 700 is served by rooftop handling units (RTUs) that were installed during the recent renovation of the tenant space, prior to occupation. The Crepini HVAC system is divided into eight (8) separate zones as shown on Figure 3. The HVAC system is comprised of 100 supply diffusers with a total cooling capacity of 23,800 CFM, and a calculated 5 air changes per hour for the space as a whole. During the August 26th IAQ sampling, the newly installed Crepini equipment was being tested and National Resources operated the HVAC system under the same conditions anticipated during normal operations once the tenant takes occupancy.

Summary of IAQ Testing

IAQ testing was conducted in accordance with the procedures outlined in the NYSDEC-approved RFI Work Plan and Testing Plan. Samples were collected using 6-liter, individually certified clean, stainless-steel Summa[®] canisters (Summa[®] Canisters). The Summa[®] Canisters were calibrated by the laboratory with flow controllers to obtain 8-hour time-averaged samples. Indoor air samples were collected from a height of two and a half (2.5) to six (6) feet above the ground surface at the following eleven (11) locations throughout the Crepini space, which are depicted on Figure 2:

- IA-1: Men's Restroom
- IA-2: Women's Restroom
- IA-3: Lunch Room
- IA-4: Open Area
- IA-5: Production Room
- IA-6: Packaging Room
- IA-7: Locker Room
- IA-8: Entrance
- IA-9: Loading/Distribution Room
- IA-10: Hallway
- IA-11: Corporate Office

A duplicate sample (DUPLICATE) was collected at location IA-3. Additionally, one outdoor ambient air sample (AMBIENT AIR) was collected during the investigation at one of the Building 700 rooftop air intakes for the Crepini HVAC system to assess the potential impact of



background conditions on the IAQ results. A field blank was also collected by transferring lab-grade nitrogen directly from a compressed gas canister into a Summa® Canister.

PID readings were collected at each sample location immediately before sample collection began to evaluate whether VOCs were present in the Crepini space and had the potential to impact the IAQ results. Zero ppm PID readings were recorded at all of the indoor air sampling locations except for IA-5 (Production Room) and IA-6 (Packaging Room), which had VOC concentrations of 0.1 and 0.2 ppm, respectively. These VOC concentrations were likely due to the equipment testing activities being performed during the IAQ sampling event. Walden noted a fairly strong odor coming from the egg whites which were produced and packaged in both rooms.

All samples were transferred to Phoenix Labs of Manchester, CT, a NYSDOH ELAP certified laboratory (NYSDOH ELAP #11301) under chain of custody for analysis of volatile organic compound (VOC) analytes via modified Method TO-15 as specified in the June 2009 *RFI Work Plan*.

Please see Table 1 for a summary of field sampling information, Table 2 for a summary of the IAQ analytical data, Attachment 1 for a photographic log of the sampling locations, and Attachment 2 for the full laboratory analytical report. A Data Usability Summary Report (DUSR) is being prepared and will be submitted under separate cover.

Results and Discussion

The Crepini IAQ analytical data were compared to the typical indoor air background concentrations published in USEPA's 2001 Building Assessment and Survey Evaluation (BASE) database. When developing BASE, USEPA collected indoor air samples at randomly selected office and commercial buildings using Summa® canisters. Table 2 presents the Crepini IAQ data compared to the 75th, 90th, 95th and 99th percentile indoor air BASE concentrations for reference in comparing the VOC data to typical indoor background concentrations.

All of the VOC concentrations detected in the Crepini IAQ samples were within or below the range of background concentrations listed in the USEPA BASE database as noted in Table 2, indicating that indoor air quality is acceptable. In addition, IBM continues to operate a vapor extraction system in Building 700 which remove sub-slab vapors containing elevated concentrations of VOCs from beneath the Crepini space and adjoining portions of the building.

Ms. Jessica LaClair
Building 700 (Former 330D) Crepini IAQ Testing
September 16, 2019



- 4 -

Based on the results from the pre-occupancy IAQ testing presented herein, please confirm that the Crepini space within Building 700 is suitable for tenant occupancy.

Please call me at (516) 624-7200 if you have any questions or need any additional information.

Very truly yours,
Walden Environmental Engineering, PLLC

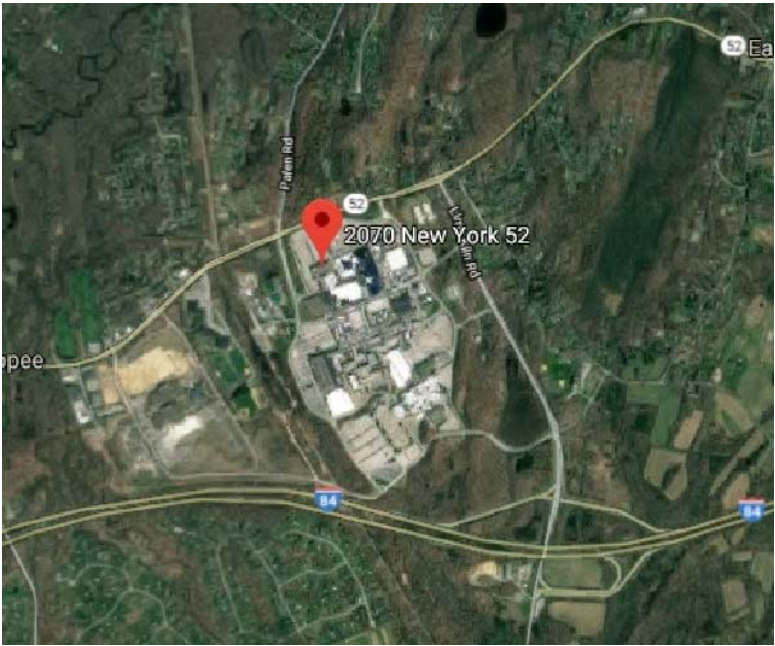
Nora M. Brew, P.E.
Senior Project Manager

Attachments:

Figure 1 – Site Location Map
Figure 2 – Sampling Locations
Figure 3 – HVAC Zones
Table 1 – Summary of Field Information
Table 2 – Summary of IAQ Analysis
Attachment 1 – Photographic Log of Sampling Locations
Attachment 2 – Laboratory Analytical Report

cc: J. Kenney, NYSDOH
C. Monheit, National Resources
M. Buckley, National Resources
D. Chartrand, IBM

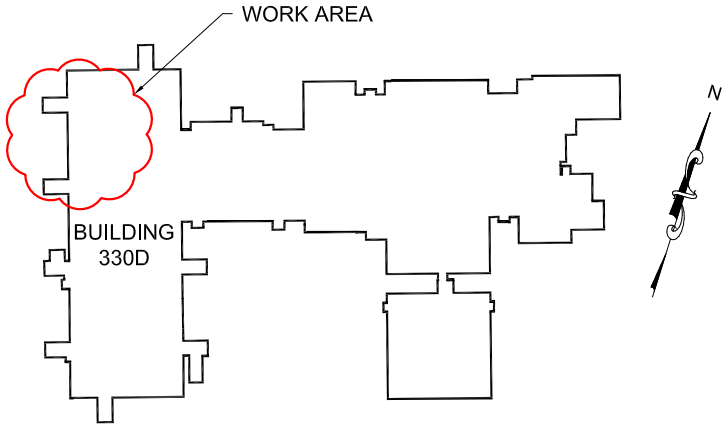
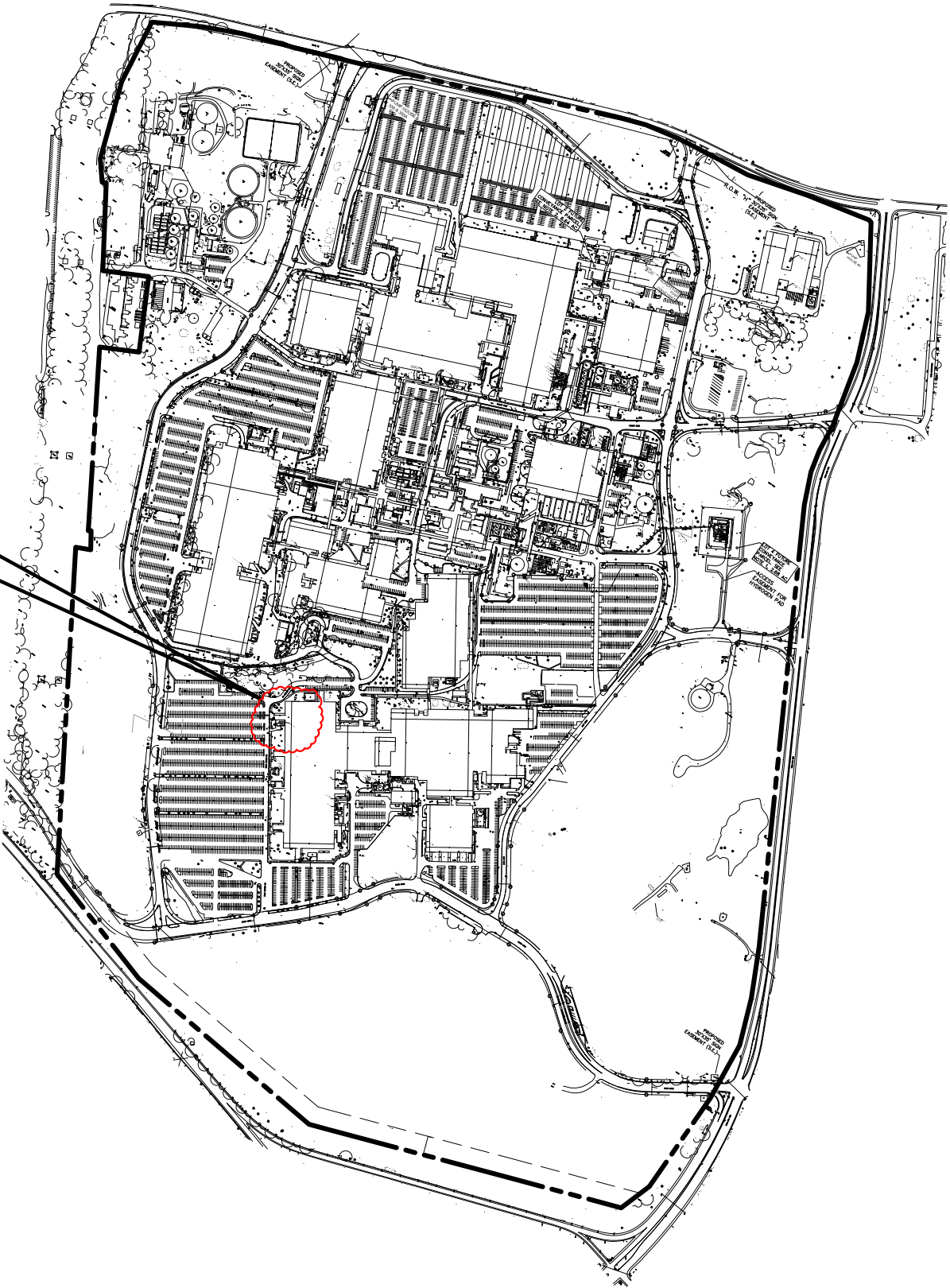
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SITE LOCATION
N.T.S.
SOURCE: GOOGLEMAPS.COM



CREPINI SPACE



BUILDING 330D
N.T.S.



SCALE: 1"=800'

SITE LOCATION MAP
SCALE: 1" = 800'-0"

LEGEND

----- - PROPERTY LINE

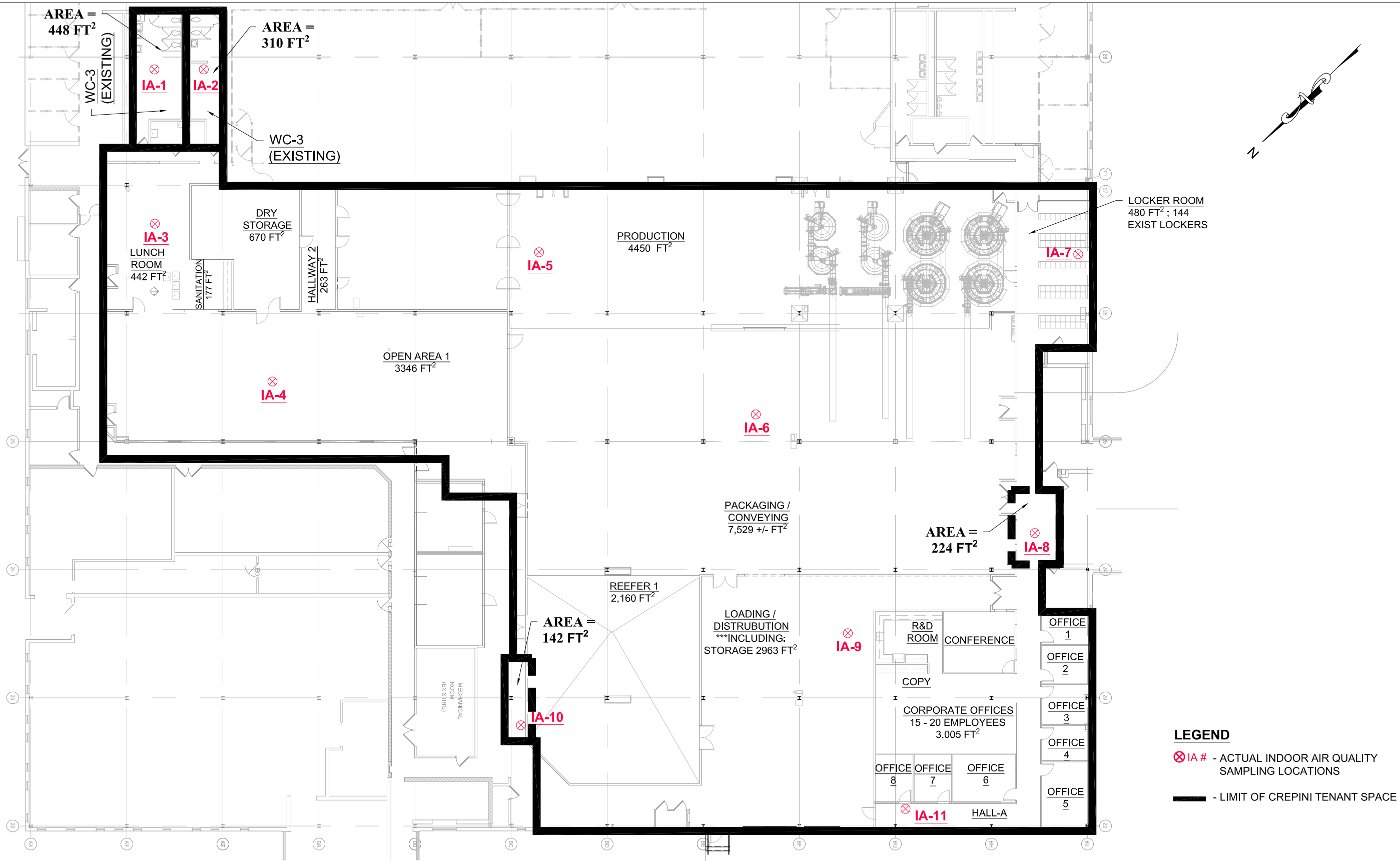
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POUGHKEEPSIE, NY (XBASE-SVY_51421-00.DWG 8/10/15);
PARCELS: XSUBD_51539-00.DWG.

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REVISION		
No.	DATE	COMMENTS

FOR: BUILDING 330D	
iPark 84 Campus	
2070 Route 52	
Hopewell Junction, N.Y. 12533	
DESIGNED BY: NMB	DRAWN BY: LS
APPROVED BY: JMH	SCALE: AS NOTED

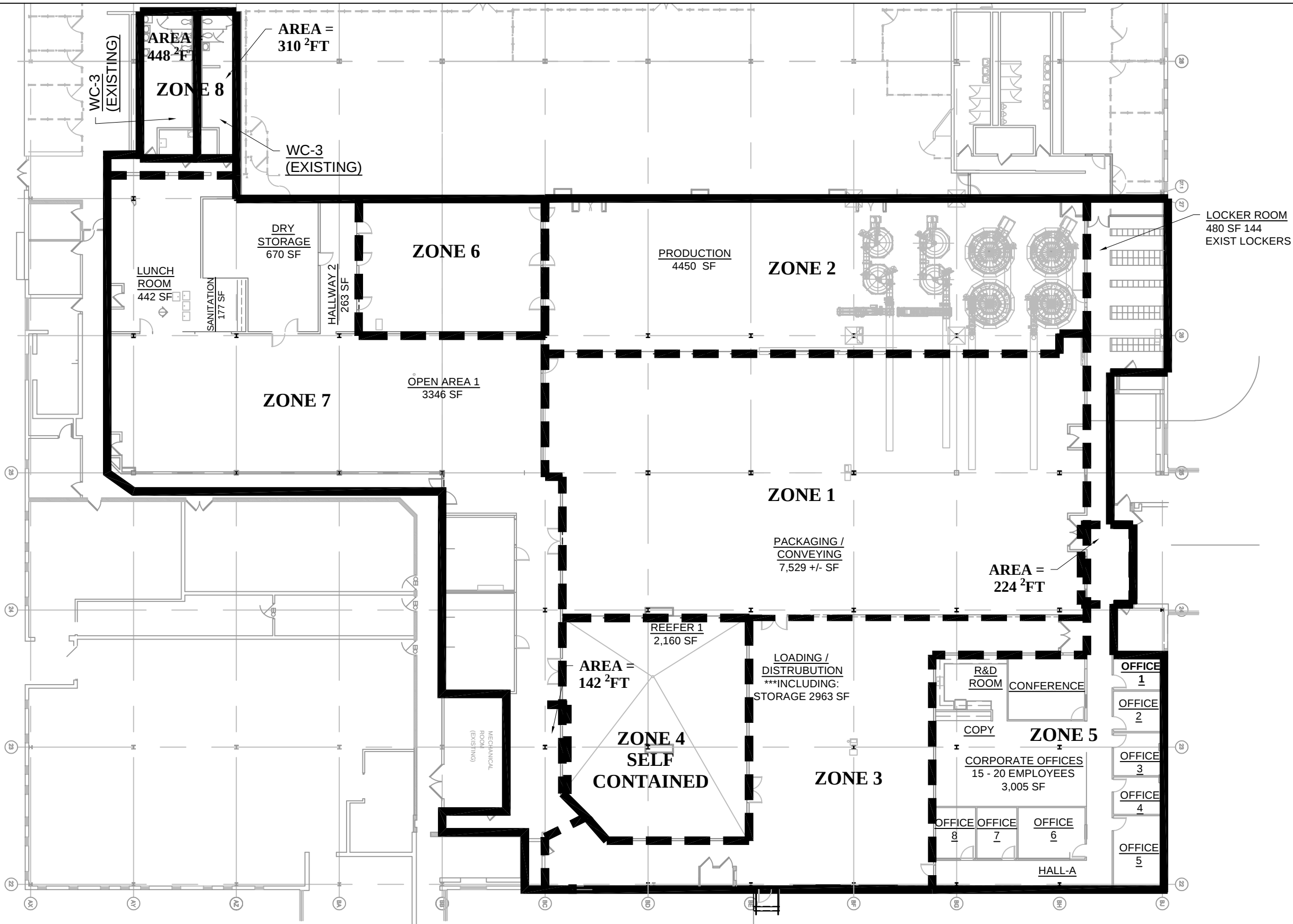
FIGURE TITLE: SITE LOCATION MAP BUILDING 330D CREPINI SPACE				FIGURE NO: 1	ISSUED
JOB NO: IPARK118.33 DATE: 8/28/19 11x17 SHEET NO: 1 OF 2				REVISION NO: 0	
CAD FILE NAME: Z:\IPARK\0118\IPARK0118.33 - CrepinI IAC\Report\Report File.dwg					



INDOOR AIR QUALITY SAMPLING: ACTUAL LOCATIONS
N.T.S.

- LEGEND**
- ⊗ IA # - ACTUAL INDOOR AIR QUALITY SAMPLING LOCATIONS
 - - LIMIT OF CREPINI TENANT SPACE

SITE BASEMAP: CHAZAN ENGINEERING, LAND SURVEYING & LANDSCAPE ARCHITECTURE CO. D.P.C. POUGHKEEPSIE, NY (XBASE-SVY_51421-00.DWG 8/10/15); PARCELS: XSUBD_51539-00.DWG.



HVAC ZONES FLOOR PLAN
N.T.S.

SITE BASEMAP: CHAZAN ENGINEERING, LAND SURVEYING & LANDSCAPE ARCHITECTURE CO. D.P.C.
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REVISION		
No.	DATE	COMMENTS

FOR: BUILDING 330D iPark 84 Campus 2070 Route 52 Hopewell Junction, N.Y. 12533	
DESIGNED BY: NMB	DRAWN BY: LS
APPROVED BY: JMH	SCALE: AS NOTED

DRAWING TITLE: HVAC ZONES IN CREPINI SPACE		DRAWING NO: 3	ISSUED
JOB NO: IPARK118.33 DATE: 8/9/19 11x17 SHEET NO: 3 OF 4		REVISION N 0	
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iPARK 84 Campus
2070 NY-Route 52
Hopewell Junction, New York

TABLE 1
SUMMARY OF INDOOR AIR SAMPLE INFORMATION
BUILDING 700 (FORMER 330D) - CREPINI SPACE

Sample Location	Building Floor	Sample Matrix	Canister Number	Regulator Number	Sample Height (feet above floor)	Start Time (24-hour format)	Start Pressure (mmHg)	PID Reading (ppm)	Stop Time (24-hour format)	Stop Pressure (mmHg)	Temperature (°F)	Location Description	Chemicals Observed Near Sample Location
IA-1	Ground	Indoor Air	21365	4988	5.5	950	-30	0.0	1751	-5.5	72	Men's Restroom	None observed
IA-2	Ground	Indoor Air	19931	7019	6	943	-30	0.0	1748	-4	72	Women's Restroom	None observed
IA-3	Ground	Indoor Air	471	5393	4	948	-30	0.0	1754	-3.5	72	Lunch Room	None observed
IA-4	Ground	Indoor Air	12859	4963	6	953	-29.5	0.0	1758	-5	72	Open Area	None observed
IA-5	Ground	Indoor Air	19916	4492	2.5	1005	-29	0.1	1814	-5.5	80	Production Room	Strong food odor (eggs)
IA-6	Ground	Indoor Air	21357	3413	2.5	1017	-30	0.2	1817	-6	72	Packaging Room	Strong food odor (eggs)
IA-7	Ground	Indoor Air	11288	5615	3	1002	-30	0.0	1809	-3	72	Locker Room	None observed
IA-8	Ground	Indoor Air	13645	5673	2.5	1041	-30	0.0	1841	-5	72	Entrance	None observed
IA-9	Ground	Indoor Air	28567	3504	5	957	-30	0.0	1804	-3	72	Loading/Distribution Room	Pot and pan detergent ; oxidizing floor treatment
IA-10	Ground	Indoor Air	28555	3512	2.5	1012	-30	0.0	1823	-4	72	Hallway	None observed
IA-11	Ground	Indoor Air	28608	7044	6	958	-30	0.0	1806	-4	72	Corporate Office	None observed
Duplicate	Ground	Indoor Air	486	4954	4	1015	-30	0.0	1819	-6.5	72	Lunch Room	None observed
Ambient Air	Building 700 Roof	Ambient Air	221	4982	2	936	-30	0.0	1736	-6.5	60 (AM) ; 77 (PM)	Building Roof	None observed
Field Blank	Ground	Nitrogen	23327	3500	2.5	1026	-28.5	0.0	1225	-4.5	72	n/a	None observed

iPARK 84 Campus
2070 NY-Route 52
Hopewell Junction, New York

TABLE 2
SUMMARY OF IAQ ANALYSIS
BUILDING 700 (FORMER 330D) - CREPINI SPACE

CAS Registry Number		USEPA BASE Database Tables - Typical Background Concentrations for Indoor Air				Collection Date Sample ID Matrix Location Units	8/26/2019 IA-1 Air		8/26/2019 IA-2 Air		8/26/2019 IA-3 Air		8/26/2019 DUPLICATE Air		8/26/2019 IA-4 Air		8/26/2019 IA-5 Air		8/26/2019 IA-6 Air	
		75th Percentile	90th Percentile	95th Percentile	99th Percentile		Men's Restroom	Women's Restroom	Lunch Room	Lunch Room	Open Area	Production Room	Packaging Room							
														Result	RL	Result	RL	RL	Result	RL
Volatiles (TO15) By TO15																				
1,1,1-Trichloroethane	71-55-6	10.8	20.6	33.0	737.9	ug/m3	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09
1,1-Dichloroethene	75-35-4	<1.2	<1.4	<1.6	<1.7	ug/m3	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
1,2,4-Trichlorobenzene	120-82-1	<1.2	<6.8	<7.2	<8.1	ug/m3	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85
1,2-Dichlorobenzene	95-50-1	<1.0	<1.2	<1.3	10.5	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
1,3-Dichlorobenzene	541-73-1	<1.1	<2.4	<2.5	<2.8	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
1,4-Dichlorobenzene	106-46-7	1.4	5.5	12.5	80.5	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
Acetone	67-64-1	59.8	98.9	120.2	226.6	ug/m3	22.8	2.37	19.6	2.37	40.1	2.37	34.2	2.37	17.9	2.37	23.4	2.37	24.2	2.37
Benzene	71-43-2	5.1	9.4	12.5	25.0	ug/m3	0.28	0.16	0.34	0.16	0.36	0.16	0.34	0.16	0.37	0.16	0.38	0.16	0.37	0.16
Carbon Tetrachloride	56-23-5	<1.1	<1.3	0.7	0.9	ug/m3	0.97	0.13	0.58	0.13	0.5	0.13	0.53	0.13	0.52	0.13	0.5	0.13	0.5	0.13
Chlorobenzene	108-90-7	<0.8	<0.9	<1.0	1.0	ug/m3	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92
Cis-1,2-Dichloroethene	156-59-2	<1.2	<1.9	<2.0	<2.2	ug/m3	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79
Dichlorodifluoromethane	75-71-8	10.5	16.5	32.9	81.3	ug/m3	2.48	0.99	2.54	0.99	2.31	0.99	2.39	0.99	2.3	0.99	1.33	0.99	1.05	0.99
Ethylbenzene	100-41-4	3.4	5.7	7.6	18.5	ug/m3	0.7	0.65	1.32	0.65	3.32	0.65	3.12	0.65	4.13	0.65	2.07	0.65	3.31	0.65
m,p-Xylene	179601-23-1	12.2	22.2	28.5	67.6	ug/m3	2.89	0.65	5.86	0.65	14.8	0.65	14.2	0.65	18.9	0.65	9.46	0.65	15.1	0.65
Methylene Chloride	75-09-2	5.0	10.0	16.0	1155.6	ug/m3	2.83	1.39	4.76	1.39	27.6	1.39	27.8	1.39	2.43	1.39	< 1.39	1.39	< 1.39	1.39
o-Xylene	95-47-6	4.4	7.9	11.2	20.1	ug/m3	2.03	0.65	4.43	0.65	11.8	0.65	10.7	0.65	14.9	0.65	7.12	0.65	12.6	0.65
Tetrachloroethene	127-18-4	5.9	15.9	25.4	55.6	ug/m3	2.38	0.68	7.32	0.68	2.69	0.68	2.64	0.68	2.85	0.68	3.76	0.68	2.96	0.68
Toluene	108-88-3	25.9	43.0	70.8	348.9	ug/m3	< 0.75	0.75	< 0.75	0.75	1.73	0.75	1.5	0.75	0.82	0.75	< 0.75	0.75	0.89	0.75
Trichloroethene	79-01-6	1.2	4.2	6.5	57.0	ug/m3	< 0.20	0.20	0.45	0.20	< 0.20	0.20	0.32	0.20	< 0.20	0.20	< 0.20	0.20	0.23	0.20
Trichlorofluoromethane	75-69-4	6.7	18.1	54.0	860.6	ug/m3	2.36	0.84	2.49	0.84	2.27	0.84	2.37	0.84	2.26	0.84	2.45	0.84	2.26	0.84
Trichlorotrifluoroethane	76-13-1	<3.0	3.5	9.4	19.7	ug/m3	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15
Vinyl Chloride	75-01-4	<1.0	<1.9	<2.2	<2.6	ug/m3	<0.05	.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05

iPARK 84 Campus
2070 NY-Route 52
Hopewell Junction, New York

TABLE 2
SUMMARY OF IAQ ANALYSIS
BUILDING 700 (FORMER 330D) - CREPINI SPACE

CAS Registry Number		USEPA BASE Database Tables - Typical Background Concentrations for Indoor Air				Collection Date Sample ID Matrix Location Units	8/26/2019 IA-7 Air		8/26/2019 IA-8 Air		8/26/2019 IA-9 Air		8/26/2019 IA-10 Air		8/26/2019 IA-11 Air		8/26/2019 AMBIENT AIR Air		8/26/2019 FIELD BLANK Air	
		75th Percentile	90th Percentile	95th Percentile	99th Percentile		Locker Room		Entrance		Loading - Distribution Room		Hallway		Corporate Office		Outdoor Air Intake			
							Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Volatiles (TO15) By TO15																				
1,1,1-Trichloroethane	71-55-6	10.8	20.6	33.0	737.9	ug/m3	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09	< 1.09	1.09
1,1-Dichloroethene	75-35-4	<1.2	<1.4	<1.6	<1.7	ug/m3	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
1,2,4-Trichlorobenzene	120-82-1	<1.2	<6.8	<7.2	<8.1	ug/m3	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85	< 1.85	1.85
1,2-Dichlorobenzene	95-50-1	<1.0	<1.2	<1.3	10.5	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
1,3-Dichlorobenzene	541-73-1	<1.1	<2.4	<2.5	<2.8	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
1,4-Dichlorobenzene	106-46-7	1.4	5.5	12.5	80.5	ug/m3	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90	< 0.90	0.90
Acetone	67-64-1	59.8	98.9	120.2	226.6	ug/m3	15.5	2.37	16.9	2.37	13.3	2.37	18.1	2.37	26.6	2.37	4.56	2.37	5.93	2.37
Benzene	71-43-2	5.1	9.4	12.5	25.0	ug/m3	0.51	0.16	0.34	0.16	0.34	0.16	0.38	0.16	0.37	0.16	0.18	0.16	0.41	0.16
Carbon Tetrachloride	56-23-5	<1.1	<1.3	0.7	0.9	ug/m3	0.5	0.13	0.55	0.13	0.5	0.13	0.5	0.13	0.55	0.13	0.49	0.13	< 0.13	0.13
Chlorobenzene	108-90-7	<0.8	<0.9	<1.0	1.0	ug/m3	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92	< 0.92	0.92
Cis-1,2-Dichloroethene	156-59-2	<1.2	<1.9	<2.0	<2.2	ug/m3	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79	< 0.79	0.79
Dichlorodifluoromethane	75-71-8	10.5	16.5	32.9	81.3	ug/m3	1.91	0.99	1.25	0.99	2.01	0.99	1.69	0.99	2.32	0.99	2.94	0.99	< 0.99	0.99
Ethylbenzene	100-41-4	3.4	5.7	7.6	18.5	ug/m3	< 0.65	0.65	1.12	0.65	1.33	0.65	2.24	0.65	1.22	0.65	< 0.65	0.65	2.36	0.65
m,p-Xylene	179601-23-1	12.2	22.2	28.5	67.6	ug/m3	2.1	0.65	4.86	0.65	5.6	0.65	10.5	0.65	4.73	0.65	< 0.65	0.65	8.29	0.65
Methylene Chloride	75-09-2	5.0	10.0	16.0	1155.6	ug/m3	2.99	1.39	4.41	1.39	< 1.39	1.39	< 1.39	1.39	32.6	1.39	< 1.39	1.39	< 1.39	1.39
o-Xylene	95-47-6	4.4	7.9	11.2	20.1	ug/m3	1.38	0.65	3.39	0.65	3.93	0.65	7.81	0.65	3.19	0.65	< 0.65	0.65	3.82	0.65
Tetrachloroethene	127-18-4	5.9	15.9	25.4	55.6	ug/m3	3.46	0.68	2.58	0.68	1.34	0.68	1.79	0.68	2.54	0.68	< 0.68	0.68	< 0.68	0.68
Toluene	108-88-3	25.9	43.0	70.8	348.9	ug/m3	< 0.75	0.75	0.91	0.75	0.82	0.75	< 0.75	0.75	2.71	0.75	< 0.75	0.75	3.74	0.75
Trichloroethene	79-01-6	1.2	4.2	6.5	57.0	ug/m3	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	< 0.20	0.20	0.56	0.20	< 0.20	0.20	< 0.20	0.20
Trichlorofluoromethane	75-69-4	6.7	18.1	54.0	860.6	ug/m3	2.61	0.84	2.35	0.84	2.18	0.84	1.91	0.84	3.19	0.84	2.34	0.84	< 0.84	0.84
Trichlorotrifluoroethane	76-13-1	<3.0	3.5	9.4	19.7	ug/m3	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15	< 1.15	1.15
Vinyl Chloride	75-01-4	<1.0	<1.9	<2.2	<2.6	ug/m3	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05

Site Photographs

Photograph #1



Sample Location IA-1, located in Men's Restroom

Photograph #2



Sample Location IA-2, located in Women's Restroom

Photograph #3



Sample Location IA-3/Duplicate, located in Lunch Room

Photograph #4



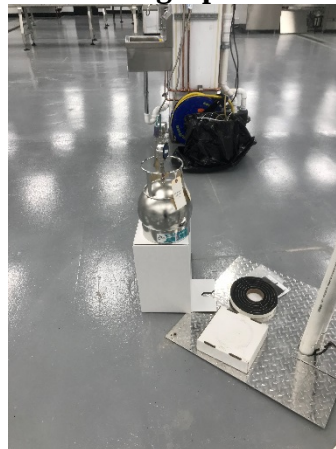
Sample Location IA-4, located in Open Area

Photograph #5



Sample Location IA-5, located in Production Room

Photograph #6



Sample Location IA-6, located in Packaging Room

Site Photographs (continued)

Photograph #7



Sample Location IA-7, located in Locker Room

Photograph #8



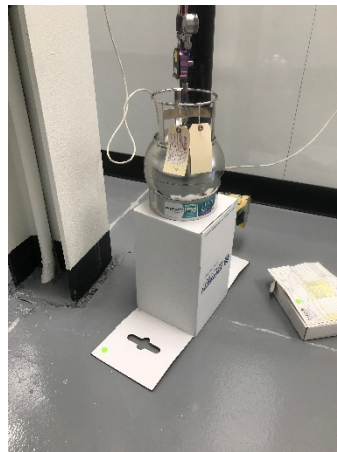
Sample Location IA-8, located in Entrance

Photograph #9



Sample Location IA-9, located in Loading/Distribution Room

Photograph #10



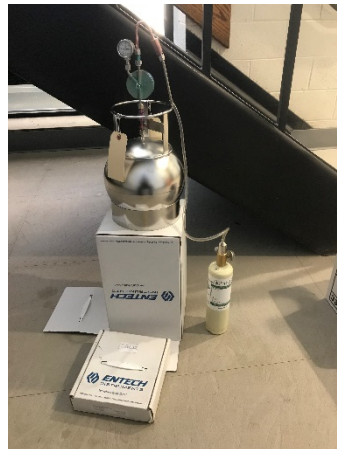
Sample Location IA-10, located in Hallway

Photograph #11



Sample Location IA-11, located in Corporate Office

Photograph #12



Sample Location FIELD BLANK