MAIN OFFICE:

50 Salem Street, Ste. 103B
Lynnfield, MA 01940
(781) 213-9198

BRANCH OFFICES:

46 Watergate Lane
W. Barnstable, MA 02668
(508) 274-5703

10 Diamond Drive
Derry, NH 03038
(603) 434-5245

www.axiomenv.com

January 31, 2022

Mr. Michael Lane
Environmental Health & Safety Manager
Office of Court Management/
Facilities Management & Court Capital
Massachusetts Superior Courts
Lowell Justice Center
370 Jackson Street
Lowell, MA 01852

VIA EMAIL

AXIOM Project 01275.008

RE: Indoor Air Quality Testing, 80 State Street, Springfield, MA

Dear Mr. Lane,

At your request, Axiom Partners, Inc. (AXIOM) performed indoor air quality (IAQ) testing in the referenced superior courthouse building. The testing was performed on January 13, 2022, by AXIOM Industrial Hygienist, Michael Keady and consisted of the following:

I. INDOOR AIR TESTING AND OBSERVATIONS

1. Visual Assessment of Interior Spaces

AXIOM performed a general inspection of the interior spaces for visible signs of potential water damage or mold/fungal growth. This did not include above ceiling spaces and HVAC equipment.

2. General Air Quality Testing Parameters

AXIOM performed testing of indoor air quality parameters throughout the building using a direct reading Q-Trak® IAQ Monitor which continuously measures and records levels of carbon monoxide (CO), carbon dioxide (CO_2), temperature and relative humidity (rH).

AXIOM positioned the Q-Trak in 31 locations over the course of the day, with run times in each location ranging between 10 and 20 minutes. Locations were chosen to represent general air quality and the locations are documented on the attached floor plans.

Results are compared with established indoor air quality guidelines which are used to assess the adequacy of indoor air quality and ventilation.

3. Air Testing for Volatile Organic Compounds (VOCs)

A calibrated TSI GM460 Gas Monitor was used to take real-time spot readings for VOCs[1] in multiple locations throughout the building. The GM460 is a hand-held device that detects and measures more than 600 of the most common VOCs and has a lower detection limit of 1.0 ppb.

[1] Includes a library of over 600 common VOCs

The screening locations and associated Gas Monitor responses were be recorded on an indoor air sampling form. The locations mimicked the Q-Trak sampling locations.

4. Air Testing for Total Dust

AXIOM performed continuous dust monitoring throughout the building using a direct-reading SidePak AM520 dust monitor. This portable unit measured and recorded total dust concentrations.

The SidePak™ Personal Aerosol Monitor AM520i is a portable, battery-operated, data-logging, device that provides real-time aerosol mass concentration readings of dusts, fumes, mists, smoke and fog.

AXIOM periodically moved the SidePak unit throughout the building mimicking the Q-Trak and Gas Monitor sampling locations.

5. Air Testing for Non-Culturable Mold (Fungi)

AXIOM also collect air samples for direct optical examination for mold and fungal spores using Allergenco-D air sampling cassettes which are used for the rapid collection and analysis of a wide range of airborne aerosols, including fungal spores, pollen, insect parts, skin cell fragments, fibers, and inorganic particulates. AXIOM collected 8 air samples from inside the building and 2 outdoor baseline/control samples (10 total samples).

The air samples were analyzed by EMSL Analytical, inc. (EMSL) located in Woburn, MA. EMSL is accredited under the American Industrial Hygiene Association (AIHA) for fungal analysis. A chain-of-custody form was used to document sample handling and to specify analytical requirements.

II. SUMMARY OF INDOOR AIR TESTING

1. Observations

During the course of performing the air testing, AXIOM inspected interior spaces in the building and made the following observations:

1. Most areas in the building appeared to be relatively clean
2. No visible signs and no odors associated with mold/fungi were noted in the building
3. Water-stained ceiling tiles were observed in various locations throughout the building
4. As previously reported, there was visible signs of water damage on paper boxes in the basement file storage room
5. As previously reported, there were numerous areas with dirty HVAC diffusers and adjacent ceiling tiles
6. As previously reported, some unidentified stains were observed on carpets in some offices (possibly from drink/coffee spills)

2. General Air Quality Testing Parameters, VOCs and Total Dust

Table 1 provides a summary of the Q-Trak, SidePak and GM460 indoor air quality testing. In addition to our IH taking regular measurements and recording them on a field form, the Q-Trak and SidePak units operated in the data logging mode where it recorded and logged readings every 60 seconds throughout the sampling period. The GM460 is an automatic datalogging device that collects readings every 5 minutes when operational.

TABLE 1
SUMMARY OF Q-TRAK, SIDEPAK AND GM460 TESTING RESULTS

AIR QUALITY PARAMETER	MINIMUM / MAXIMUM OF MEASURED VALUES	AVERAGE OF MEASURED VALUES	GUIDELINES
Temperature (T)	64.4 / 79.1 °F	72.1 °F	68 – 75 °F [a,b] 73 – 79 °F (summer)
Relative Humidity (rH)	15.5 / 30.6 %	19.3 %	30 – 60% [a,b]
Carbon Dioxide (CO_2)	557 / 894 ppm	658 ppm	≤ 800 ppm [b,c]
Carbon Monoxide (CO)	0.0 / 0.7 ppm	0.1 ppm	9 ppm [a,b]/50 ppm [d]
Volatile Organic Compounds (VOC)	0 / 204 ppb	8 ppb	300 ppb [b, e]
Total Airborne Particulate	0.001 / 0.049 mg/m^3	0.015 mg/m^3	15.0 mg/m^3/5 [d]

[a] ASHRAE 55-2013 Std. (American Society of Heating, Refrigerating & Air Conditioning Engineers).
[b] ≤ means less than or equal to, °F = degrees Fahrenheit, % = percent, ppm = parts per million, mg/m^3 = milligrams per cubic meter; TWA = Time Weighted Average over 8-hours
[c] Occupational Safety & Health Administration (OSHA) proposed indoor air quality (IAQ) rule (59 FR 15968).
[d] OSHA (Occupational Safety and Health Administration) Permissible Exposure Limit.
[e] Refer to attached Total VOC summary table in Attachment 6.

Attachment 1 includes the field recording forms. The Q-Trak and SidePak data summaries and graphs are provided in Attachment 2.

4. Air Testing for Non-Culturable Mold (Fungi)

Table 4 provides a summary of the spore trap air sampling results, and the complete lab report are provided in Attachment 3.

TABLE 4
SUMMARY OF AIRBORNE FUNGAL SPORE TESTING RESULTS

SAMPLE NUMBER	LOCATION	TOTAL FUNGI (S/m^3)[1]	MOLD SPORE TYPE
4509189	Lounge 307	0	None Detected
4509174	Stairwell Outside 321	0	None Detected
4509104	Juvenile Courtroom 2	0	None Detected
4509187	Housing, Jury Deliberation Room 208	0	None Detected
4509183	B58, File Storage	0	None Detected
4509121	B30, Conference Room	0	None Detected
4509107	Housing Court Stairwell	40	Myxomycetes
4509193	Juvenile Court 3	40	Basidiospores
4509191	Building Exterior, Juvenile Entrance	80	Basidiospores, Fusarium
4509190	Building Exterior, Housing Entrance	80	Basidiospores, Myxomycetes

[1] *S/m^3 = spore counts per cubic meter of air*

Airborne fungi below 250 S/m^3 are normally not a concern for indoor environments[2]. Airborne levels outdoors are normally between 500 and 1,000 S/m^3 but can easily exceed 10,000 S/m^3 during the spring and summer

[2] New York Committee for Occupational Safety and Health

months. Indoor airborne levels between 250 and 1,000 S/m^3 are typically considered to be moderate and levels that exceed 1,000 S/m^3 are often considered elevated[3] and may result in active mold growth.

It is important to note that bioaerosols (fungi/mold) are always present and it is the excess quantity of microorganisms that can be of concern. By comparing the microbiological profiles of indoor sample results to outside samples, it is often possible to determine if amplification of microorganisms is occurring within the building.

Comparing the microbial profiles of the air samples, AXIOM has concluded that the airborne fungal spore levels on the days of the sampling were not elevated, and amplification was not occurring.

III. CONCLUSIONS

In summary, based on the results of the air quality testing described herein, AXIOM did not identify any air quality conditions or levels for measured parameters that were significantly outside acceptable levels of indoor air quality.

Although the TVOC levels are considered acceptable, it should be noted that as a result of increased cleaning and sanitizing inside building due to Covid-19, reports of higher-than-normal levels of VOCs inside buildings have been on the rise.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Evan MacArthur
Project Manager/Sr. IH

Stephen E. Minassian
Principal

Edward K. Kearney, CIH
Principal

Attachments: A1, Field data forms
A2, Direct Read Instrument Reports
A3, Fungi/mold testing report
A4, Sample location floor plans
A5, TVOC reference table

[3] Occupational Safety and Health Administration Technical Manual, Section III, Chapter 2, § IV (c)

ATTACHMENT 1

FIELD DATA FORMS

IAQ READINGS

Date: 01/13/22
Project No.: 01275.008
Industrial Hygienist(s): Michael Keady

Location: 80 State St, Springfield MA
Project Name: Air Quality Investigation, Springfield Hall of Justice

TIME	LOCATION	TEMP (°F)	RH (%)	CO_2 (PPM)	CO (PPM)	VOCS (PPB)	PART. (MG/M^3)
0716	3rd Floor, Room 321	64.6	29.6	972	0.2	0	0.013
0729	3rd Floor, Lounge 307	70.1	21.3	657	0.5	0	0.025
0742	3rd Floor, Housing Specialists, Room 305	70.2	19.4	572	0.1	0	0.010
0753	3rd Floor, Stairwell by Room 321	74.5	17.3	667	0.3	1	0.021
0806	3rd Floor, Juvenile Court Clinic 328	72.1	18.4	593	0.1	2	0.014
0820	3rd Floor, Juvenile Court Probation Department	75.3	17.8	633	0.3	8	0.010
0835	3rd Floor, Room 346, Juvenile Court Department Probation Office	71.7	19.4	722	0.1	9	0.010
0850	3rd Floor, Juvenile Court, Employee Lounge 336	71.4	19.8	663	0.1	8	0.010
0903	2nd Floor, Juvenile Court, Main Elevator Lobby	70.3	19.1	646	0.1	5	0.024
0923	2nd Floor, Hall by Room 259	71.6	20.2	933	0.2	9	0.00
0937	2nd Floor, Housing Court, Judges Lobby 232	72.3	19.3	713	0.1	9	0.003
0950	2nd Floor, Juvenile Courtroom 2	74.7	16.5	618	0.2	8	0.010
1005	2nd Floor, Hall by Juvenile Courtroom 2	73.5	16.9	639	0.1	9	0.014
1020	2nd Floor, Housing Court, Conference Room 220	78.4	16.3	682	0.2	15	0.009
1035	2nd Floor, Housing Court, Jury Deliberation Room 208	73.0	18.8	673	0.1	14	0.001
1050	2nd Floor, Stairs Outside Housing Courtroom 1	79.2	15.4	666	0.2	21	0.003
1105	Basement, B58 File Storage	64.5	22.7	653	0.1	7	0.050
1124	Basement, B39 Juvenile Lockup	70.2	22.2	779	0.2	11	0.021
1139	Basement, B51 Juvenile Lockup	70.5	20.9	647	0.1	9	0.020
1154	Basement, B21 Juvenile Secretary	71.4	19.6	671	0.1	5	0.014
1209	Basement, B30 Conference Room	72.0	19.3	692	0.1	5	0.007
1223	Basement, B33 Parole Office	72.9	19.2	696	0.1	6	0.018
1238	Basement, B12 Lobby Next to District Attorneys Office	73.4	19.9	700	0.1	14	0.026
1251	Basement, B04 Storage	65.8	24.5	589	0.0	3	0.031

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m^3 = milligrams per cubic meter

IAQ READINGS

Date:	01/13/22	Location:	80 State St, Springfield MA
Project No.:	01275.008	Project Name:	Air Quality Investigation, Springfield Hall of Justice
Industrial Hygienist(s):	Michael Keady		

TIME	LOCATION	TEMP (°F)	RH (%)	CO_2 (PPM)	CO (PPM)	VOCS (PPB)	PART. (MG/M^3)
1310	1st Floor, Housing Court Department Stairwell	72.9	20.5	773	0.1	14	0.013
1322	1st Floor, Employee Lounge 126	74.0	18.7	731	0.1	10	0.018
1335	1st Floor, Juvenile Courtroom 2	72.2	19.2	623	0.1	9	0.021
1350	1st Floor, Juvenile Courtroom 3	77.7	17.4	699	0.1	14	0.008
1405	1st Floor, Lobby Outside Clerk Magistrates Office	72.6	19.2	676	0.1	13	0.015
1420	1st Floor, Juvenile Court Clerk's Office	72.2	18.7	654	0.1	9	0.013
1437	1st Floor, Juvenile Waiting Room	69.5	20.9	684	0.1	7	0.007

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m^3 = milligrams per cubic meter

ATTACHMENT 2

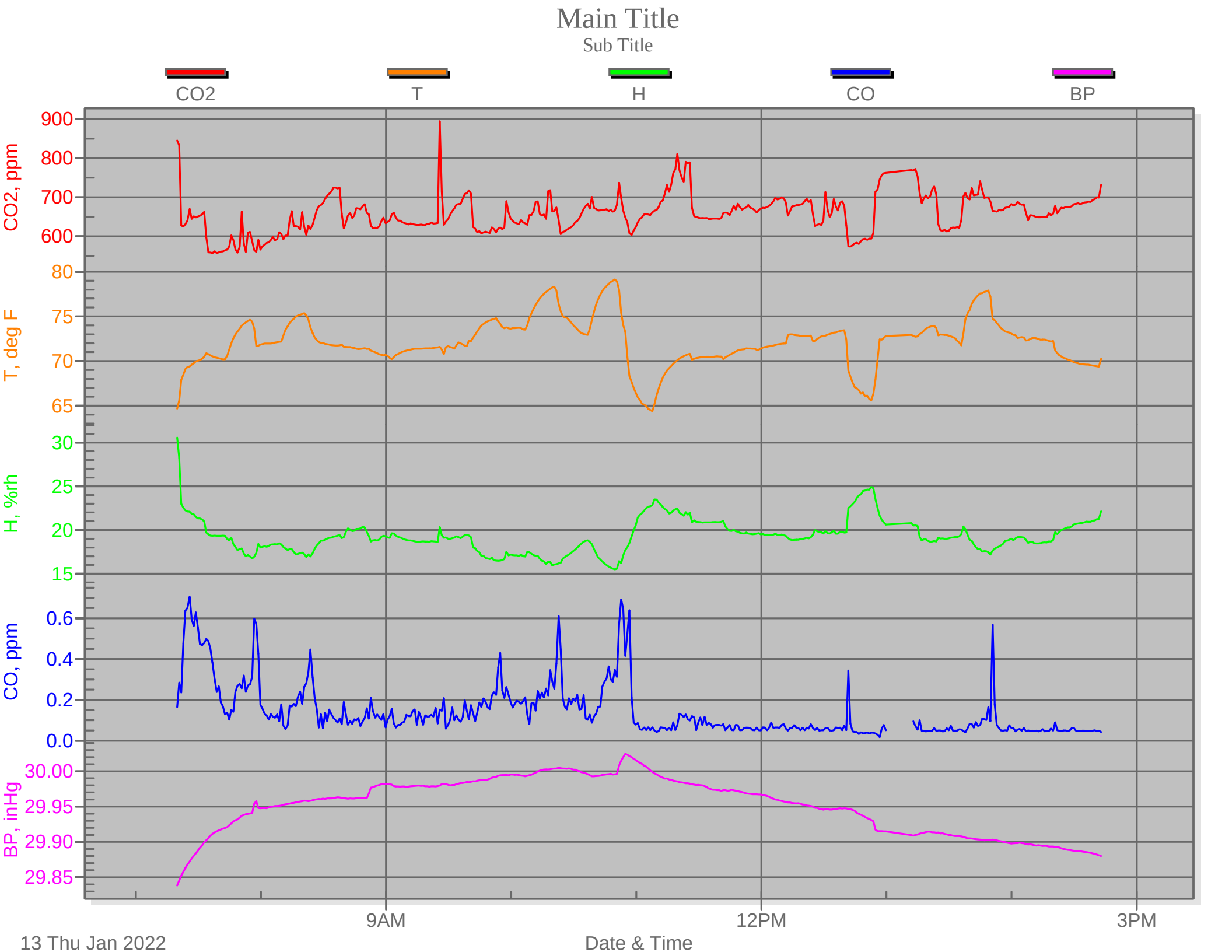
Q-TRAK SUMMARY REPORT & GRAPH,
SIDEPAK PARTICULATE REPORT & GRAPH
GM460 SUMMARY REPORT & GRAPH

Test 004

Test 004

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	01/13/2022
Meter S/N	7575X1910009	Start Time	07:18:44
Probe Model	982	Stop Date	01/13/2022
Probe S/N	P19140039	Stop Time	14:42:53
Meter Cal Date	03/06/2019	Total Time	0:07:24:09
		Logging Interval	60 seconds

Statistics					
	CO2	**T**	**H**	**CO**	**BP**
Avg	658 ppm	72.1 deg F	19.3 %rh	0.1 ppm	29.95 inHg
Max	894 ppm	79.1 deg F	30.6 %rh	0.7 ppm	30.02 inHg
Max Date	01/13/2022	01/13/2022	01/13/2022	01/13/2022	01/13/2022
Max Time	09:25:44	10:49:44	07:19:44	07:25:44	10:54:44
Min	557 ppm	64.4 deg F	15.5 %rh	0.0 ppm	29.84 inHg
Min Date	01/13/2022	01/13/2022	01/13/2022	01/13/2022	01/13/2022
Min Time	07:38:44	11:07:44	10:49:44	12:56:44	07:19:44
TWA (8 hr)	593			0.1	
TWA Start Date	01/13/2022			01/13/2022	
TWA Start Time	07:18:44			07:18:44	
TWA End Time	14:42:53			14:42:53	


Main Title
Sub Title
CO2
T
H
CO
BP
900
800
700
600
CO2, ppm
80
75
70
65
T, deg F
30
25
20
15
H, %rh
0.6
0.4
0.2
0.0
CO, ppm
30.00
29.95
29.90
29.85
BP, inHg
9AM
12PM
3PM
13 Thu Jan 2022
Date & Time

UNDERSTANDING, ACCELERATED

1/13/22 Report

Name: 1/13/22

Description: Aerosol Data

Location: 80 State St Springfield MA

Instrument Name: SidePak Aerosol Monitor

Device Model Number: AM520

Device Serial Number: 5201834010

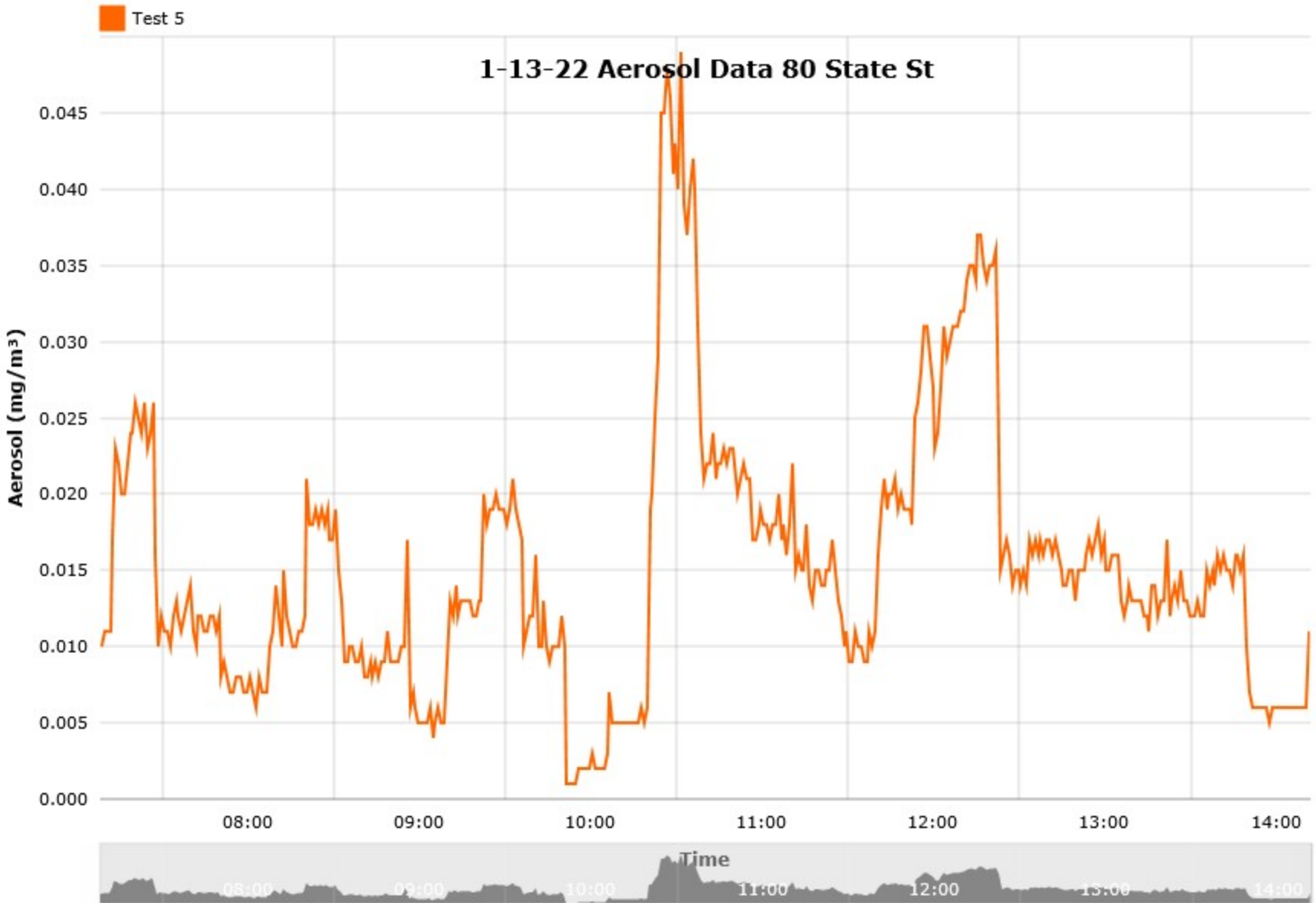
Firmware Version: A.08

Last Factory Calibration: 3/12/2021

Data Properties	
Start Date	1/13/2022
Start Time	7:37 AM
End Date	1/13/2022
End Time	2:41 PM
Test Length	00:07:04:00
Logging Interval	60 second(s)
Number of Data Points	424

Additional Information
There is no metadata related to this test

Test Statistics					
Channel	Average	Minimum	Maximum	Cal Factor	TWA
Aerosol (mg/m³)	0.015	0.001 01/13/2022 10:24:15	0.049 01/13/2022 11:01:15	1 Factory 12/30/2021	0.013

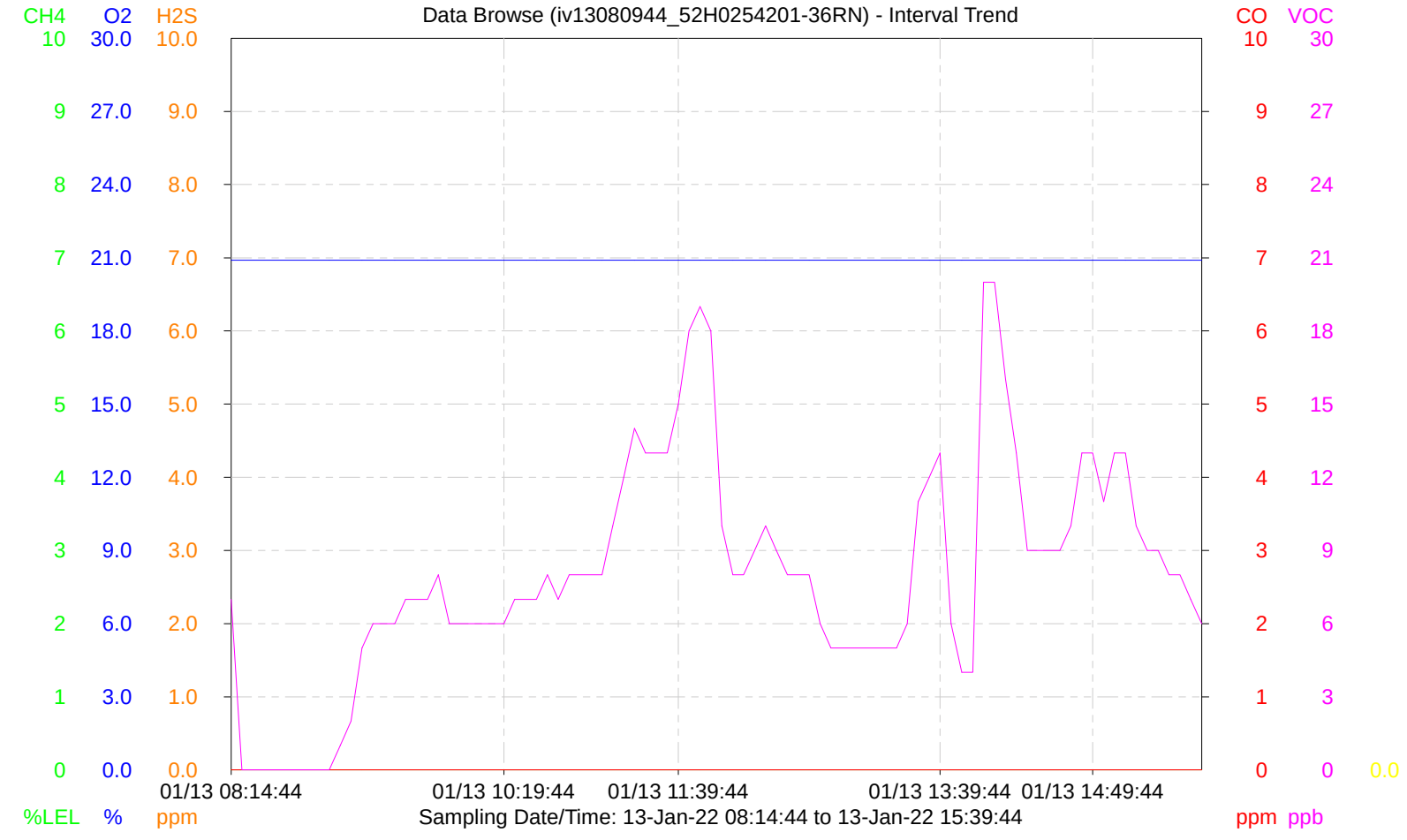

Test 5
1-13-22 Aerosol Data 80 State St
Aerosol (mg/m³)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
08:00
09:00
10:00
11:00
12:00
13:00
14:00
Time

GM460 Data Logger (Interval Trend)

1/13/2022 8:09:48 PM

Property	Value
Name	iv13080944_52H0254201-36RN
Sampling Date/Time	1/13/2022 8:09:44 AM to 1/13/2022 3:42:23 PM
Serial No.	52H0254201-36RN
Station ID	STATION_ID_001
User ID	USER_ID_001
Data Count	90
Interval Time (sec)	300

Gas(FullScale)	CH4(100%LEL)	O2(40.0%)	H2S(100.0ppm)	CO(500ppm)	VOC(50000ppb)	----(---)
Avg	0 %LEL	20.9 %	0.0 ppm	0 ppm	8 ppb	-----
Max	0 %LEL	20.9 %	0.0 ppm	0 ppm	204 ppb	-----
Max Date/Time	01/13 08:09:44	01/13 08:09:44	01/13 08:09:44	01/13 08:09:44	01/13 08:09:44	-----
Min	*****	20.9 %	*****	*****	*****	-----
Min Date/Time	*****	01/13 08:09:44	*****	*****	*****	-----
Warning	10 %LEL	19.5 %	5.0 ppm	25 ppm	5000 ppb	-----
Alarm	50 %LEL	23.5 %	30.0 ppm	50 ppm	10000 ppb	-----
STEL	*****	*****	5.0 ppm	200 ppm	*****	-----
TWA	*****	*****	1.0 ppm	25 ppm	*****	-----



ATTACHMENT 3

EMSL MOLD AIR SAMPLING LABORATORY REPORT

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132200377
Customer ID: AXIO80
Customer PO:
Project ID:

Attention: Michael Keady
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Project: 80 State Street

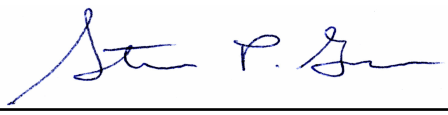
Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 01/13/2022
Received Date: 01/14/2022
Analyzed Date: 01/21/2022

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132200377-0001			132200377-0002			132200377-0003		
Lab Sample Number:									
Client Sample ID:	4509189			4509174			4509104		
Volume (L):	75			75			75		
Sample Location:	Lounge 307			Stairwell Outside 321			Juvenile Courtroom 2		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	None Detected	-	-	None Detected	-	-	None Detected	-
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	-	-
Fibrous Particulate (1-4)	-	-	-	-	1	-	-	-	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA-LAP, LLC-EMLAP Accredited #180179

Initial report from: 01/21/2022 09:07 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
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Collected Date: 01/13/2022
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Analyzed Date: 01/21/2022

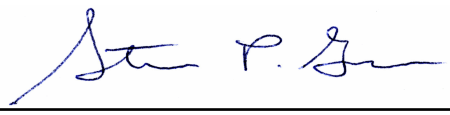
Project: 80 State Street

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132200377-0004			132200377-0005			132200377-0006		
Lab Sample Number:									
Client Sample ID:	4509187			4509183			4509121		
Volume (L):	75			75			75		
Sample Location:	Housing, Jury Deliberation Room 208			B58, File Storage			B30, Conference Room		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	None Detected	-	-	None Detected	-	-	None Detected	-
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	-	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

Initial report from: 01/21/2022 09:07 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132200377
Customer ID: AXIO80
Customer PO:
Project ID:

Attention: Michael Keady
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Project: 80 State Street

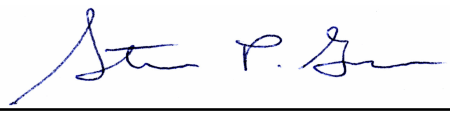
Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 01/13/2022
Received Date: 01/14/2022
Analyzed Date: 01/21/2022

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132200377-0007			132200377-0008			132200377-0009		
Lab Sample Number:									
Client Sample ID:	4509107			4509193			4509191		
Volume (L):	75			75			75		
Sample Location:	Housing Court Stairwell			Juvenile Court 3			Building Exterior, Juvenile Entrance		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	1	40	100	1	40	50
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	1	40	50
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	100	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**1**	**40**	**100**	**1**	**40**	**100**	**2**	**80**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA-LAP, LLC-EMLAP Accredited #180179

Initial report from: 01/21/2022 09:07 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
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EMSL Order: 132200377
Customer ID: AXIO80
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Attention: Michael Keady
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50B Salem Street, Suite 103
Lynnfield, MA 01940

Project: 80 State Street

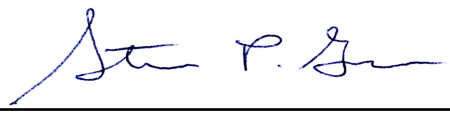
Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 01/13/2022
Received Date: 01/14/2022
Analyzed Date: 01/21/2022

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	**132200377-0010**		
Client Sample ID:	**4509190**		
Volume (L):	**75**		
Sample Location:	**Building Exterior, Housing Entrance**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	1	40	50
Bipolaris++	-	-	-
Chaetomium++	-	-	-
Cladosporium	-	-	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium++	-	-	-
Ganoderma	-	-	-
Myxomycetes++	1	40	50
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Total Fungi	**2**	**80**	**100**
Hyphal Fragment	1	40	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	43	-
Analyt. Sensitivity 300x	-	13*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	1	-
Background (1-5)	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA-LAP, LLC-EMLAP Accredited #180179

Initial report from: 01/21/2022 09:07 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

OrderID: 132200377

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

132200377

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnMicroLab@emsl.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:
Company Name: Axiom Partners
Contact Name: Michael Keady
Street Address: 50b Salem St
City, State, Zip: Lynnfield, MA, 01940 Country: USA
Phone: 781-690-4044
Email(s) for Report: MKeady@axiomenv.com and emacarthur@axiomenv.com

Billing Information

Billing ID:
Company Name:
Billing Contact:
Street Address:
City, State, Zip: Country:
Phone:
Email(s) for Invoice:

Project Information

Project Name/No: 01275.008 - 80 State St
Purchase Order:
EMSL LIMS Project ID: (If applicable, EMSL will provide)
State Samples Collected:
Zip Code Samples Collected::
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-taxable)
Sampled By Name: Michael Keady
Sampled By Signature:
No. of Samples In Shipment: 10
Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)
Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32* Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☑ 1 Week ☐ 2 Week

MICROBIOLOGY TEST CODES

M001 Air-O-Cell
M174 MoldSnap
M030 Micro 5
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi-Air Samples (Genus ID & Count)
M006 Viable Fungi-Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)
M008 Culturable Fungi-Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. Coli* (Colilert P/A***)
M018 Total Coliform & *E. Coli* (MFT*)
M114 Total Coliform & *E. Coli Enumeration (Colilert MPN**)*
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci (Enterolert P/A***)*
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen - Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M730 *Methicillin-resistant Staph, aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M095 *Bacteroides*
Other - See Analytical Price Guide for Test Code
Legionella Analysis Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
4509189	Lounge 307	Air		M032	75 L	1/13/22 7:35	
4509174	Stairwell Outside 321					7:50	
4509104	Juvenile Courtroom 2					9:45	
4509187	Housing, Jury Deliberation Room 205					10:31	
4509183	B58, File Storage					11:00	
4509121	B30, Conference Room					12:05	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:
Sample Condition Upon Receipt: Chilled
RECD EMSL-BOSTON JAN 14 2022

Relinquished by:	Date/Time:	Received by:	Date/Time
Michael Keady	1-14-21/8:00	dropbox	
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

OrderID: 132200377

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only
132200377

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnMicroLab@emsl.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
4509107	Housing Court Stairway	Air		M032	75L	1/13/20 13:00	
4509193	Juvenile Court 3	↓		↓	↓	13:45	
4509191	Building Exterior, Juvenile Entrance					14:50	
4509190	Building Exterior, ~~Juvenile~~ Housing Entrance	↓		↓	↓	15:05	

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Michael Keady	Date/Time: 1-14-22/8:00	Received by: REC'D EMSL-BOSTON JAN 14 2022 0830	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-34 Micro R13 3/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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ATTACHMENT 4

SAMPLE LOCATION FLOOR PLANS

LEGEND

IAQ Sample Location

M06 Mold Sample Location

Bi-Weekly IAQ Survey

Round 6 of 6
January 13th, 2022

1 HAMPDEN SUP CT
BASEMENT FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

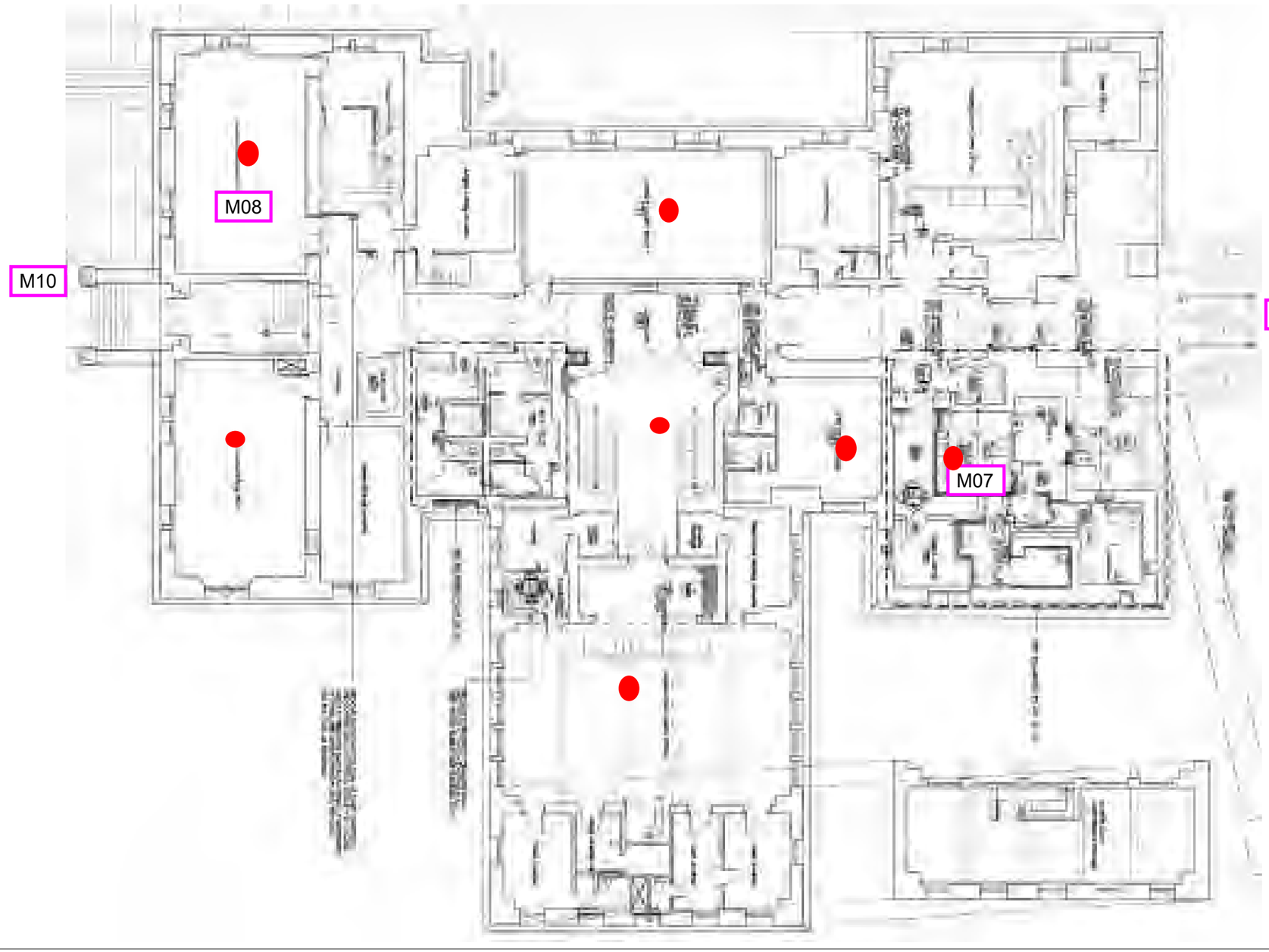
NORTH

80 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Hampden Superior Ct Basement Floor Plan
PROJECT TITLE: Hampden Sup. Ct IAQ Survey 80 State St, Springfield MA
DATE: 01/13/22
PROJECT NO.: 01275.008
APPROVED: | BUILDING NUMBER | CHECKED | DRAWN
APPROVED: | LOCATION
DRAWING NO.: IAQ 1
DWG. 1 OF 4

axiom PARTNERS environmental engineers



LEGEND

IAQ Sample Location

M09 Mold Sample Location

Bi-Weekly IAQ Survey

Round 6 of 6
January 13th, 2022

2 HAMPDEN SUP CT
FIRST FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

NORTH

80 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Hampden Superior Ct 1st Floor Plan
PROJECT TITLE: Hampden Sup. Ct IAQ Survey 80 State St, Springfield MA
DATE: 01/13/22
PROJECT NO.: 01275.008
APPROVED:
BUILDING NUMBER | CHECKED | DRAWN
APPROVED:
LOCATION
DRAWING NO.: IAQ 2
DWG. 2 OF 4

axiom partners environmental engineers

LEGEND

IAQ Sample Location

M03 Mold Sample Location

Bi-Weekly IAQ Survey

Round 6 of 6
January 13th, 2022

3 HAMPDEN SUP CT
SECOND FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

NORTH

80 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Hampden Superior Ct 2nd Floor Plan
PROJECT TITLE: Hampden Sup. Ct IAQ Survey 80 State St, Springfield MA
DATE: 01/13/22
PROJECT NO.: 01275.008
APPROVED:
BUILDING NUMBER | CHECKED | DRAWN
APPROVED:
LOCATION
DRAWING NO.: IAQ 3
DWG. 3 OF 4

axiom partners environmental engineers

LEGEND

IAQ Sample Location

M01 Mold Sample Location

Bi-Weekly IAQ Survey

Round 6 of 6
January 13th, 2022

4 HAMPDEN SUP CT
THIRD FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

NORTH

80 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Hampden Superior Ct 3rd Floor Plan
PROJECT TITLE: Hampden Sup. Ct IAQ Survey 80 State St, Springfield MA
DATE: 01/13/22
PROJECT NO.: 01275.008
DRAWING NO.: IAQ 4
DWG. 4 OF 4
APPROVED:
BUILDING NUMBER
CHECKED
DRAWN
APPROVED:
LOCATION

ATTACHMENT 5

TVOC CONCENTRATION REFERENCE TABLE

TVOC Indoor Air Concentration Reference Guide

TVOC Level *ug*/m3	Level of Concern	Symptoms	Comments
<300 (0.3 ppm)	Low	No irritation or discomfort is expected	There is a low likelihood that specific VOC sources are present
300 to 500 (0.3 to 0.5 ppm)	Acceptable	Occasional irritation or discomfort may be possible with sensitive individuals	There is a low to moderate likelihood that specific VOC sources are present
500 to 1,000 (0.5 to 1.0 ppm)	Marginal	Complaints about irritation and discomfort are possible in sensitive individuals	A moderate likelihood that specific VOC sources are it is recommended that steps be taken to identify the sources
1,000 to 3,000 (1.0 to 3.0 ppm)	High	Irritation and discomfort are very likely	A high likelihood that specific VOC sources are present and it is highly recommended that steps be taken to identify them
>3,000 (>3.0 ppm)	Very High	Irritation and discomfort are very possible	These levels are usually found in an industrial environment where workers are exposed to chemicals