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May 23, 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 01275.007

RE: Indoor Air Quality Testing, Springfield District Courthouse, 50 State Street, Springfield, MA

Dear Mr. Lane,

At your request, Axiom Partners, Inc. (AXIOM) performed indoor air quality (IAQ) testing at the referenced courthouse building. The testing was performed on April 26, 2022 by AXIOM Industrial Hygienist, Ryan Burns. The IAQ survey consisted of the following:

I. INDOOR AIR TESTING PROCESS**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 IAQ parameters throughout the building using a direct reading Q-Trak™ IAQ Monitor which continuously measures and records levels of carbon monoxide (CO), carbon dioxide (CO₂), temperature and relative humidity (rH).

AXIOM positioned the Q-Trak in 37 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 were compared with established indoor air quality guidelines which are used to assess the adequacy of IAQ and ventilation.

3. Air Testing for Total Volatile Organic Compounds (TVOCs)

A calibrated TSI GM460™ Gas Monitor was used to take real-time spot readings for TVOCs¹ 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 ppb.

¹ Includes a library of over 600 common VOCs



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

4. Air Testing for Total Dust

AXIOM performed 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 units 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 10 air samples from inside the building and 2 outdoor baseline/control samples (12 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 FINDINGS

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 areas investigated
3. Water damaged ceiling tiles that were observed in previous visits have since been replaced (excluding basement areas)
4. HVAC diffusers appear to have been surface cleaned at the time of ceiling tile replacement (excluding basement areas)

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

Table 1 provides a summary of the Q-Trak, SidePak and GM460 indoor air quality testing. In addition to taking regular measurements and recording them on a field form, the Q-Trak and SidePak units were operated in the data logging mode where they 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)	54.3 ^f / 77.9 °F	74.1 °F	68 – 75 °F ^{a,b} 73 – 79 °F (summer)
Relative Humidity (rH)	25.7 / 68.8 %	35.2 %	30 – 60% ^{a,b}
Carbon Dioxide (CO ₂)	448 / 693 ppm	532 ppm	≤ 800 ppm ^{b,c}
Carbon Monoxide (CO)	0.0 / 2.1 ppm	0.0 ppm	9 ppm ^{a,b} /50 ppm ^d
Total Volatile Organic Compounds (TVOC)	0 / 0.192 ppm	0.011 ppm	0.3 ppm ^{b, e}
Total Airborne Particulate	0.002 / 0.079 mg/m ³	0.008 mg/m ³	15.0 mg/m ³ ^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, ppb = parts per billion, mg/m³ = 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.

^f A minimum temperature of 54.3° F was recorded at the building exterior, prior to building interior inspection.

Attachment 1 includes the field recording forms. The Q-Trak and SIDEPAK data summaries 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. The complete laboratory report is provided in Attachment 3.

TABLE 2
SUMMARY OF AIRBORNE FUNGAL SPORE TESTING RESULTS

SAMPLE NUMBER	LOCATION	TOTAL FUNGI (S/m ³) ¹	MOLD SPORE TYPE
4541417	4th Floor, Judges Lobby Entry	280	Aspergillus/Penicillium, Basidiospores, Myxomycetes
4541408	4th Floor, Court Room #4	40	Myxomycetes
4541523	3rd Floor, District Attorney's Office - Room 355	40	Basidiospores
4541489	3rd Floor, Secretary Pool	100	Aspergillus/Penicillium
4541411	2nd Floor, Hallway Outside Room 210	40	Basidiospores
4541410	2nd Floor, Court Room #10	90	Cladosporium
4541538	1st Floor, Clerk of Criminal Court	40	Basidiospores
4541459	1st Floor, Employee Lounge 168	0	None Detected
4541492	Basement, File Room G40	80	Basidiospores, Cladosporium
4541543	Basement, Janitorial Office G02	0	None Detected

SAMPLE NUMBER	LOCATION	TOTAL FUNGI (S/m ³) ¹	MOLD SPORE TYPE
4541438	Building Exterior by Main Entrance	180	Basidiospores, Myxomycetes
4541540	Building Exterior Entrance to Parking Garage	80	Ascospores, Cladosporium

¹S/m³ = spore counts per cubic meter of air

Airborne fungi below 250 S/m³ are normally not a concern for indoor environments². Airborne levels outdoors are normally between 500 and 1,000 S/m³ but can easily exceed 10,000 S/m³ during the spring and summer months. Indoor airborne levels between 250 and 1,000 S/m³ are typically considered to be moderate and levels that exceed 1,000 S/m³ are often considered elevated³ 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.

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 for indoor air quality.

Although the TVOC levels are considered acceptable, it should be noted that due to increased cleaning and sanitizing inside building due to Covid-19, reports of higher-than-normal levels of TVOCs 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.
Industrial Hygienist



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

² New York Committee for Occupational Safety and Health

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

ATTACHMENT 1

FIELD DATA FORMS

IAQ READINGS

Date: 04/26/22
 Project No.: 01275.007
 Industrial Hygienist(s): Ryan Burns

Location: 50 State St, Springfield MA
 Project Name: Air Quality Investigation,

TIME	LOCATION	TEMP (°F)	RH (%)	CO ₂ (PPM)	CO (PPM)	VOCs (PPB)	PART. (MG/M ³)
0820	outside	54.9	57	463	0	0	0.055
8:32	Judges Lobbies / 428	73.1	29.4	644	0	8	0.007
8:44	Court room #4 – 4 th floor	74.5	27.5	484	0	0	0.005
8:56	441 / 442	74	28	547	0	1	0.009
9:07	Employee Lounge	73.6	29.6	542	0	0	0.008
9:19	Registry of Deed / 400	73.3	27.4	497	0	0	0.003
9:30	Registry of Deeds / 411 - 412	73.9	28.4	516	0	2	0.004
9:40	Judges Lobbies / 416	75.7	28.4	557	0	6	0.015
9:53	Court Room #2	75.6	29.8	505	0	7	0.008
10:05	District Attorney's Office / 355	75.6	29.4	515	0	7	0.007
10:16	Employees Lounge / 371	74.2	31.2	520	0	7	0.013
10:30	Probation Court Office Space / 337 - 336	75.1	30.7	539	0	8	0.013
10:50	Secretary Pool / 307	75.3	30	554	0	7	0.007
11:02	Law Library	75.7	25.9	490	0	4	0.008
11:14	Court room #4 – 3 rd floor	75.5	32.9	494	0	10	0.004
11:30	Court Room #3 – 2 nd floor	75.6	34.1	496	0	10	0.004
11:41	Room 210	74.4	34.5	572	0	11	0.008
11:55	Clerk of Civil Court Offices - 211	77.4	32.5	620	0	21	0.008
12:07	Security Office / 253	77	34	521	0	17	0.012
12:40	Court Room #10	76.1	35.3	487	0	15	0.011
12:52	Room 242	74.1	35.9	517	0	12	0.003
13:03	Witness Advocate / 224	75.9	36.6	620	0	15	0.004
13:17	Employee's Lounge – 110C	74	37.5	587	0	18	0.002
13:28	Clerk of Criminal Court / 110B	75	35.5	573	0	16	0.003
13:41	District Attorney's Office 114A	72.5	37.4	504	0	10	0.002

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m³ = milligrams per cubic meter

IAQ READINGS

Date: 04/26/22
Project No.: 01275.007
Industrial Hygienist(s): Ryan Burns

Location: 50 State St, Springfield MA
Project Name: Air Quality Investigation,

[illegible]

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m³ = milligrams per cubic meter

ATTACHMENT 2

**QTRAK SUMMARY REPORT & GRAPH,
SIDEPAK PARTICULATE REPORT,
GM460 REPORT & GRAPH**

Test 004

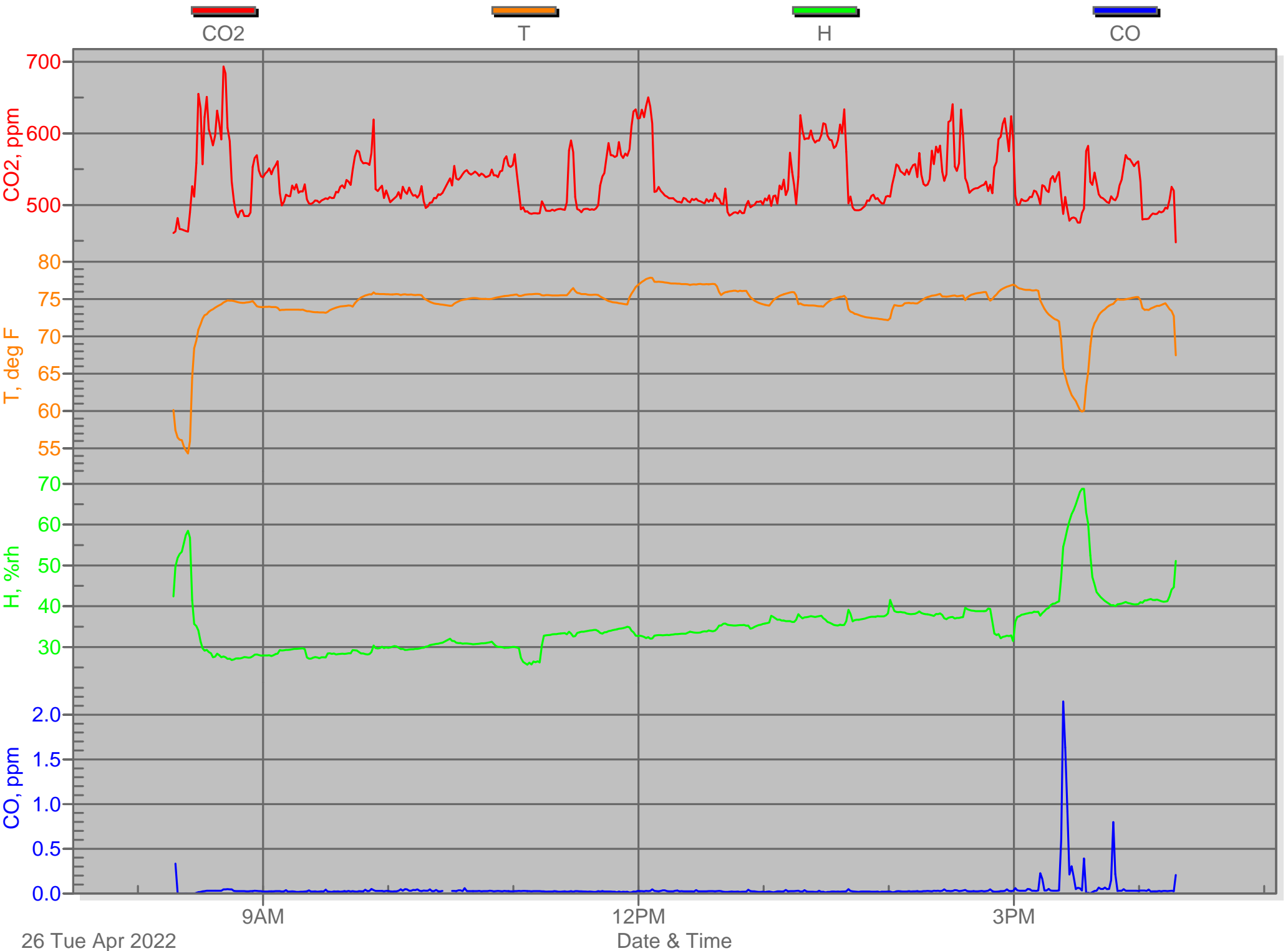
Test 004

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	04/26/2022
Meter S/N	7575X1910009	Start Time	08:16:01
Probe Model	982	Stop Date	04/26/2022
Probe S/N	P19140039	Stop Time	16:17:40
Meter Cal Date	03/21/2022	Total Time	0:08:01:39
		Logging Interval	60 seconds

Statistics				
	CO2	T	H	CO
Avg	532 ppm	74.1 deg F	35.2 %rh	0.0 ppm
Max	693 ppm	77.9 deg F	68.8 %rh	2.1 ppm
Max Date	04/26/2022	04/26/2022	04/26/2022	04/26/2022
Max Time	08:41:01	12:05:40	15:32:40	15:23:40
Min	448 ppm	54.3 deg F	25.7 %rh	0.0 ppm
Min Date	04/26/2022	04/26/2022	04/26/2022	04/26/2022
Min Time	16:17:40	08:24:01	11:06:41	08:20:01
TWA (8 hr)	531			0.0
TWA Start Date	04/26/2022			04/26/2022
TWA Start Time	08:16:01			08:16:01
TWA End Time	16:17:40			16:17:40

Main Title

Sub Title





UNDERSTANDING, ACCELERATED

Test 3 Report

Name: Test 3

Description: None

Location: Unknown

Instrument Name: SidePak Aerosol Monitor

Device Model Number: AM520

Device Serial Number: 5201912003

Firmware Version: A.08

Last Factory Calibration: 3/23/2022

Data Properties	
Start Date	4/26/2022
Start Time	8:18 AM
End Date	4/26/2022
End Time	4:18 PM
Test Length	00:08:00:00
Logging Interval	60 second(s)
Number of Data Points	480

Additional Information	
Threshold Alarms	2
STEL event(s)	True

Test Statistics					
Channel	Average	Minimum	Maximum	Cal Factor	TWA
Aerosol (mg/m ³)	0.008	0.002 04/26/2022 02:14:06	0.079 04/26/2022 08:22:06	1 Factory 03/30/2022	0.008

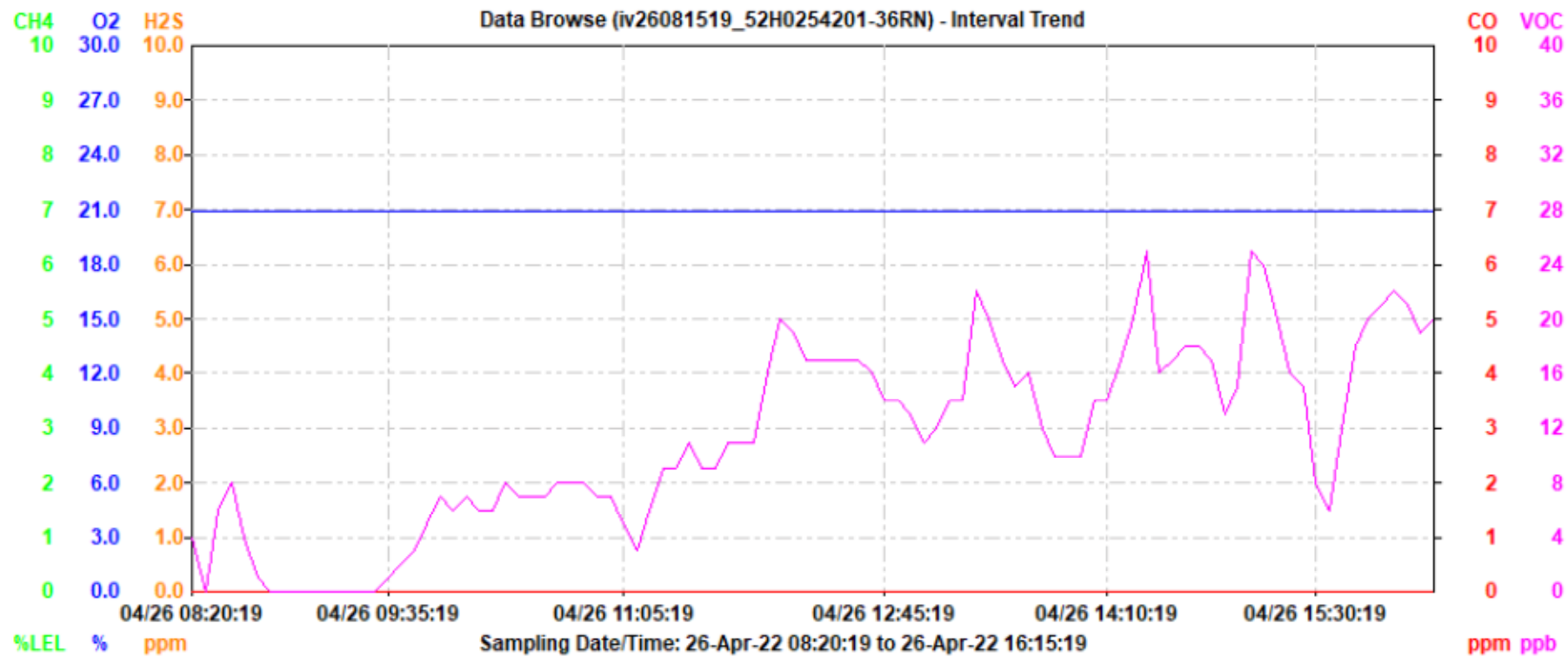
GM460 Data Sample (Interval Trend)

Property Value
 Name iv26081519_52H0254201-36RN
 Sampling Date/Time 2022/04/26 08:15:19 to 2022/04/26 16:17:58
 Serial No. 52H0254201-36RN
 Station ID STATION_ID_001
 User ID USER_ID_001

Data Count 96
 Interval Time (sec) 300

Gas(FullScale)	Avg	Max	Max Date/Time	Min	Min Date/Time	Warning	Alarm	STEL	TWA
CH4(100%LEL)	0 %LEL	0 %LEL	4/26/2022 8:15	*****	*****	10 %LEL	50 %LEL	*****	*****
O2(40.0%)	20.90%	20.90%	4/26/2022 8:15	20.90%	4/26/2022 8:15	19.50%	23.50%	*****	*****
H2S(100.0ppm)	0.0 ppm	0.0 ppm	4/26/2022 8:15	*****	*****	5.0 ppm	30.0 ppm	5.0 ppm	1.0 ppm
CO(500ppm)	0 ppm	2 ppm	4/26/2022 15:22	*****	*****	25 ppm	50 ppm	200 ppm	25 ppm
VOC(50000ppb)	11 ppb	192 ppb	4/26/2022 8:15	*****	*****	5000 ppb	10000 ppb	*****	*****
----(---)	----	----	----	----	----	----	----	----	----

No	Date/Time	CH4(100% O2(40.0%)	H2S(100.0 CO(500ppm)	VOC(5000(----(---)
1	4/26/2022 8:20	0 %LEL	20.90% 0.0 ppm	0 ppm 4 ppb
2	4/26/2022 8:25	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
3	4/26/2022 8:30	0 %LEL	20.90% 0.0 ppm	0 ppm 6 ppb
4	4/26/2022 8:35	0 %LEL	20.90% 0.0 ppm	0 ppm 8 ppb
5	4/26/2022 8:40	0 %LEL	20.90% 0.0 ppm	0 ppm 4 ppb
6	4/26/2022 8:45	0 %LEL	20.90% 0.0 ppm	0 ppm 1 ppb
7	4/26/2022 8:50	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
8	4/26/2022 8:55	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
9	4/26/2022 9:00	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
10	4/26/2022 9:05	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
11	4/26/2022 9:10	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
12	4/26/2022 9:15	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
13	4/26/2022 9:20	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
14	4/26/2022 9:25	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
15	4/26/2022 9:30	0 %LEL	20.90% 0.0 ppm	0 ppm 0 ppb
16	4/26/2022 9:35	0 %LEL	20.90% 0.0 ppm	0 ppm 1 ppb



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: 132202970

Customer ID: AXIO80

Customer PO:

Project ID:

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

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 04/26/2022
Received Date: 04/28/2022
Analyzed Date: 05/05/2022

Project: 01275.007 / SHOJ 50 State Street

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132202970-0001 4541438 75 Building Exterior - Main Entry			132202970-0002 4541417 75 4th Floor, Judges Lobby Entry			132202970-0003 4541408 75 4th Floor, Court Room #4		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m²	% of Total	Raw Count	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	3	100	35.7	-	-	-
Basidiospores	2	90	50	2	90	32.1	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	2	90	50	2	90	32.1	1	40	100
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	4	180	100	7	280	100	1	40	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	2	90	-	-	-	-	1	40	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	-	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	-	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	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.

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. 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. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

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

Initial report from: 05/05/2022 11:01 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

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Collected Date: 04/26/2022

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Project: 01275.007 / SHOJ 50 State Street

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132202970-0004 4541523 75 3rd Floor, District Attorney's Office -			132202970-0005 4541489 75 3rd Floor, Secretary Pool			132202970-0006 4541411 75 2nd Floor, Hallway outside Room 210		
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	-	-	-	3	100	100	-	-	-
Basidiospores	1	40	100	-	-	-	1	40	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	1	40	100	3	100	100	1	40	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.

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

Initial report from: 05/05/2022 11:01 AM

Steve Grise, Laboratory Manager
or other Approved Signatory

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: 132202970

Customer ID: AXIO80

Customer PO:

Project ID:

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

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 04/26/2022
Received Date: 04/28/2022
Analyzed Date: 05/05/2022

Project: 01275.007 / SHOJ 50 State Street

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132202970-0007 4541410 75 2nd Floor, Court Room #10			132202970-0008 4541538 75 1st Floor, Clerk of Criminal Court			132202970-0009 4541459 75 1st Floor, Employee Lounge 168		
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	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	2	90	100	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	90	100	1	40	100	-	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	-	-	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.

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

Initial report from: 05/05/2022 11:01 AM

Steve Grise, Laboratory Manager
or other Approved Signatory

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EMSL Order: 132202970
Customer ID: AXIO80
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Attention: Evan MacArthur
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 04/26/2022
Received Date: 04/28/2022
Analyzed Date: 05/05/2022

Project: 01275.007 / SHOJ 50 State Street

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132202970-0010 4541492 75 Basement, File Room G40			132202970-0011 4541543 75 Basement, Janitorial Office G02			132202970-0012 4541540 75 Building Exterior - Entry to Parking		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	1	40	50
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	1	40	50	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	50	-	-	-	1	40	50
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	80	100	-	None Detected	-	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	-
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

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

Initial report from: 05/05/2022 11:01 AM

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EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

132202970

EMSL ANALYTICAL, INC.
5 CONSTITUTION WAY, UNIT A
WOBBURN, MA 01801

PHONE: (781) 933-8411

FAX: (781) 933-8412

Company Name: Axiom Environmental Partners			EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**				
Street: 50B Salem St			Third Party Billing requires written authorization from third party				
City: Lynnfield	State/Province: MA 01940		Zip/Postal Code:		Country:		
Report To (Name): Evan MacArthur			Telephone #:				
Email Address: emacarthur@axiomenv.com			Fax #:		Purchase Order:		
Project Name/Number: #01275.007 / SHOJ 50 State St.			Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email				
U.S. State Samples Taken: MA		Zip Code Sample Taken:		Connecticut Samples: <input type="checkbox"/> Commercial <input type="checkbox"/> Residential			
*Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements							
Sterile, Sodium Thiosulfate Preserved Bottle Used: <input type="checkbox"/> Biocide Used in Source (specify): <input type="checkbox"/>							
Public Water Supply Samples: <input type="checkbox"/> Note: All results may automatically be reported to DOH if required by state.							
Turnaround Time (TAT) Options * - Please Check							
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour	<input type="checkbox"/> 96 Hour	<input checked="" type="checkbox"/> 1 Week	<input type="checkbox"/> 2 Week
Microbiology Test Codes							
M001 Air-O-Cell M030 Micro 5 M041 Fungal Direct Examination M168 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 <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count) M007 Culturable fungi - Surface Samples (Genus ID & Count) M008 Culturable fungi - Surface Samples (Includes <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count) M009 Bacteria Culture Gram Stain & Count M010 Bacteria Count & ID - 3 Most Prominent M011 Bacteria Count & ID - 5 Most Prominent M012 <i>Pseudomonas aeruginosa</i> (P/A***)		M174 MoldSnap M032 Allergenco-D M024 <i>Pseudomonas aeruginosa</i> (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*) M133 Methicillin-resistant Staph. aureus (MRSA) M031 Rapid-growing non-TB Mycobacteria Detection & Enumeration M014 Endotoxin Analysis M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite) Other See Analytical Price Guide Legionella Analysis Please use EMSL Legionella COC			
*MFT= Membrane Filtration Technique **MPN= Most Probable Number ***P/A= Presence/Absence							
Name of Sampler: Ryan Burns			Signature of Sampler:				
Sample #	Sample Location/Description	Sample Type	Potable/NonPotable (only for waters)	Test Code	Volume/Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	<input type="checkbox"/> P <input type="checkbox"/> NP	M017	100 mL	9/1/13 4:00 PM	
4541438	Bldg. Exterior - Main Entry	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
4541417	4 th Floor, Judges Lobbies Entry	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
4541408	4 th Floor, Court Room #4	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
4541523	3 rd Floor, District Attorney's Office - Room 355	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
4541489	3 rd Floor, Secretary Pool	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
4541411	2 nd Floor, Hallway Outside Room 210	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75 mL	4/26/22	
Client Sample # (s): -		Total # of Samples: 12		Samples Received Chilled? Yes / No			
Relinquished (Client):		Date: 4/27/22		Time: 1:30			
Received (Lab):		Date:		Time:			
Comments/Special Instructions:							

SM 940 (2/2)

REC'D EMSL-BOSTON APR 28 2022

FX 2724-9075-5238

132202970

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

[illegible]

ATTACHMENT 4

SAMPLE LOCATION FLOOR PLANS

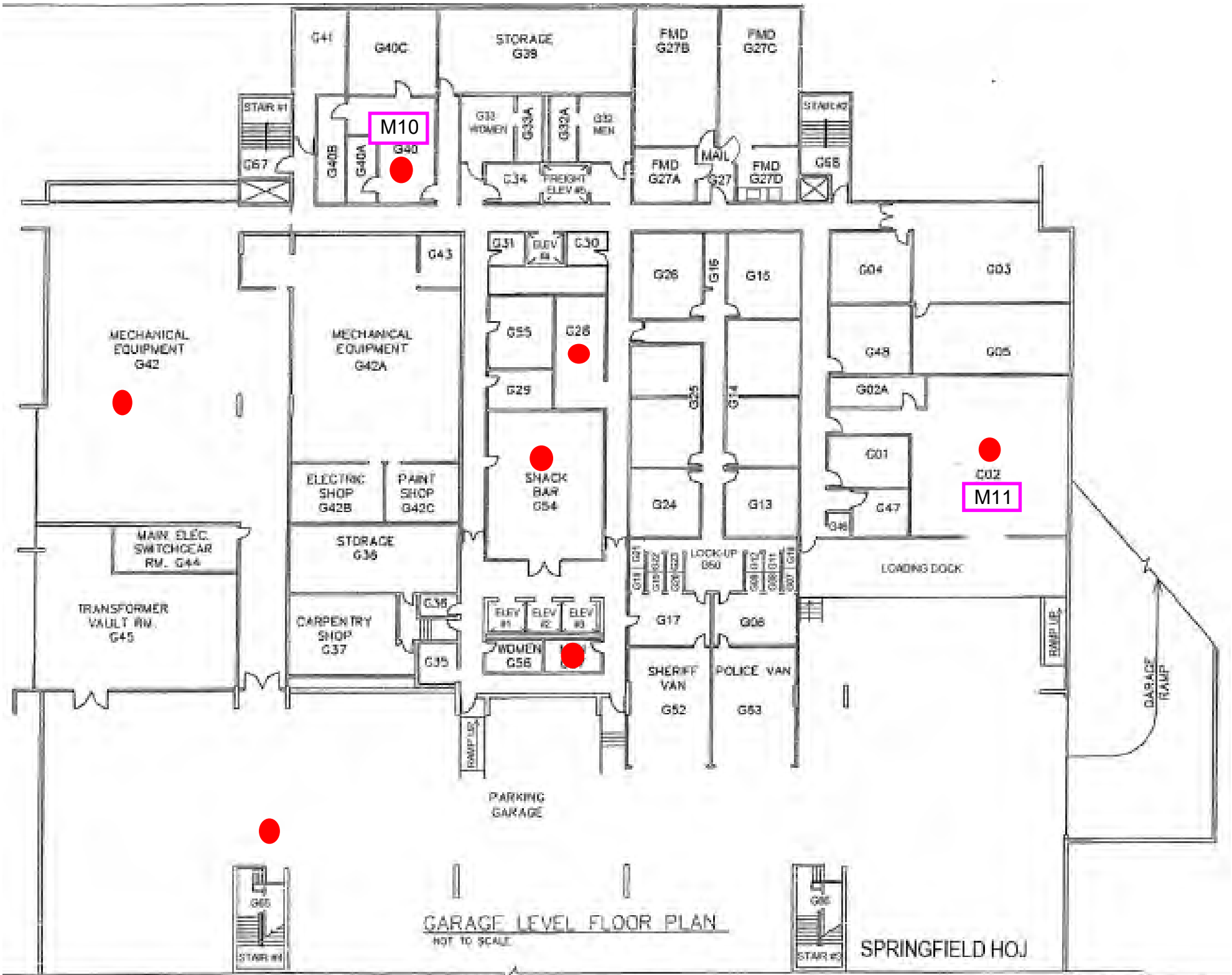
LEGEND

● IAQ Sample Location

M10
Mold Sample Location

Monthly IAQ Survey
Round 9
April 26, 2022

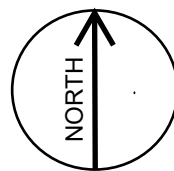
1 SPRINGFIELD HOJ
BASEMENT PLAN



GARAGE LEVEL FLOOR PLAN
NOT TO SCALE

SPRINGFIELD HOJ

PLAN NOT FOR
CONSTRUCTION



50 State Street, Springfield MA

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

DRAWING TITLE
Springfield HOJ
Basement Plan

PROJECT TITLE
SHOJ IAQ Survey
50 State St, Springfield MA

DATE
04/26/22
PROJECT NO.
01275.007

DRAWING NO.
IAQ 1
DWG. 1 OF 5



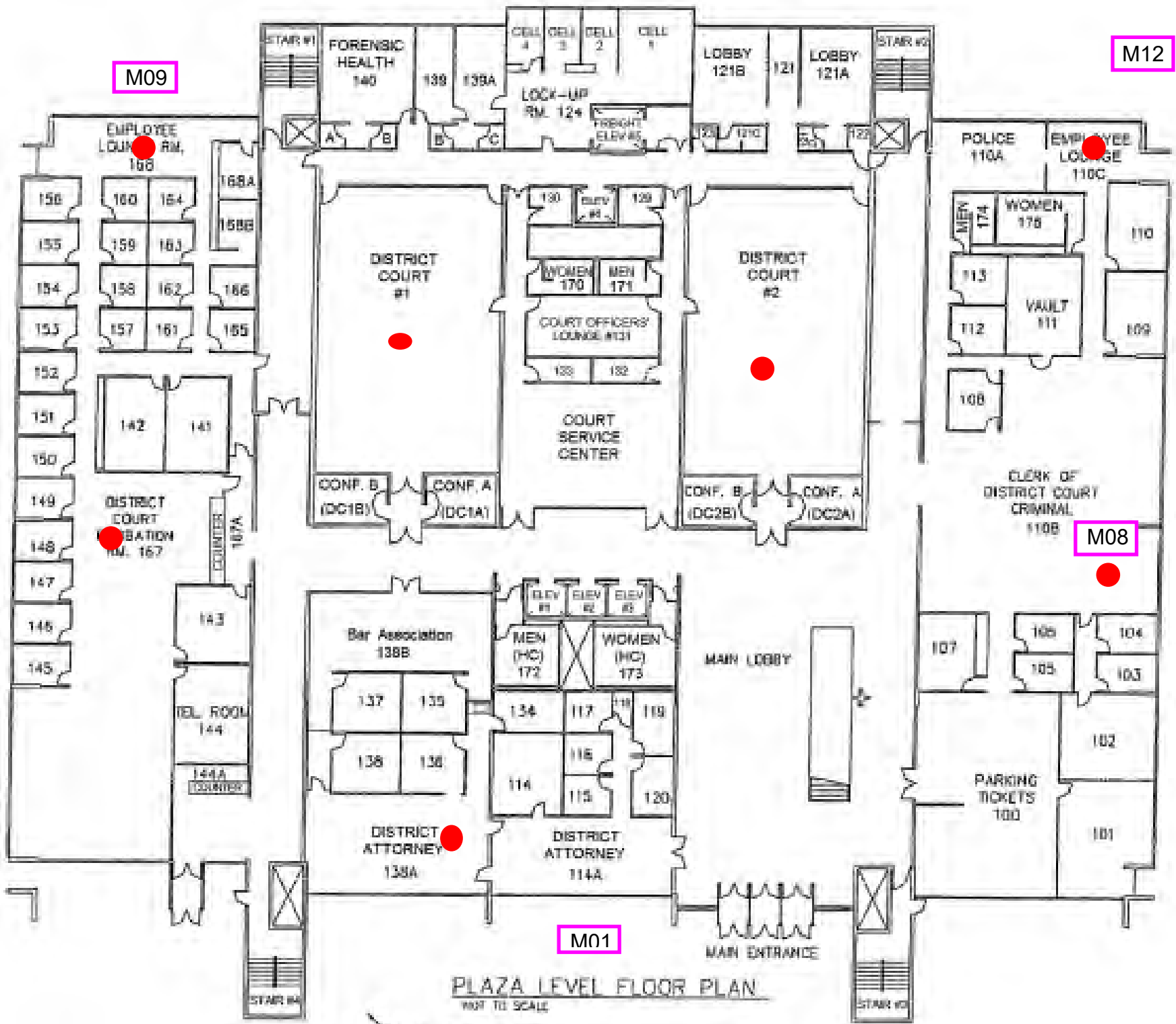
LEGEND

● IAQ Sample Location

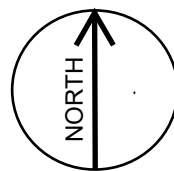
M07 Mold Sample Location

Monthly IAQ Survey
Round 9
April 26, 2022

2 SPRINGFIELD HOJ
FIRST FLOOR PLAN



PLAN NOT FOR
CONSTRUCTION



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Lynnfield, MA 01940
(781) 213-9198
www.axiomenv.com

Springfield HOJ
First Floor Plan

SHOJ IAQ Survey
50 State St, Springfield MA

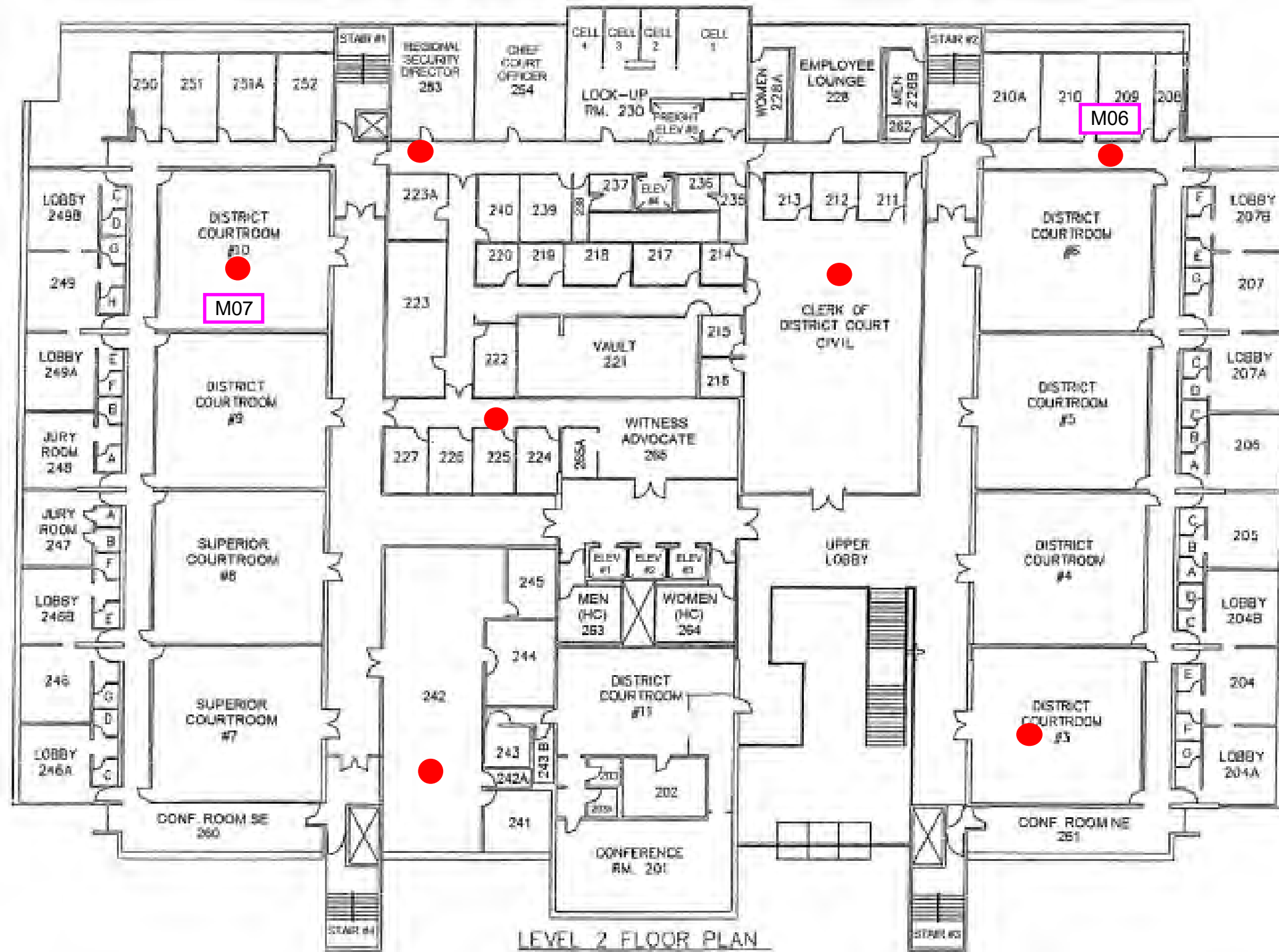
DATE 04/26/22

PROJECT NO. 01275.007

DRAWING NO. IAQ 2


DWG. 2 OF 5





LEGEND

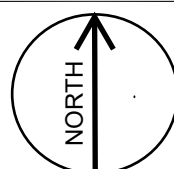

IAQ Sample Location


Mold Sample Location

Monthly IAQ
Survey
Round 9
April 26, 2022

3 SPRINGFIELD HOJ
SECOND FLOOR PLAN

PLAN NOT FOR
CONSTRUCTION



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Lynnfield, MA 01940
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DRAWING TITLE
Springfield HOJ
Second Floor Plan

APPROVED:
APPROVED:

PROJECT TITLE
SHOJ IAQ Survey
50 State St, Springfield MA

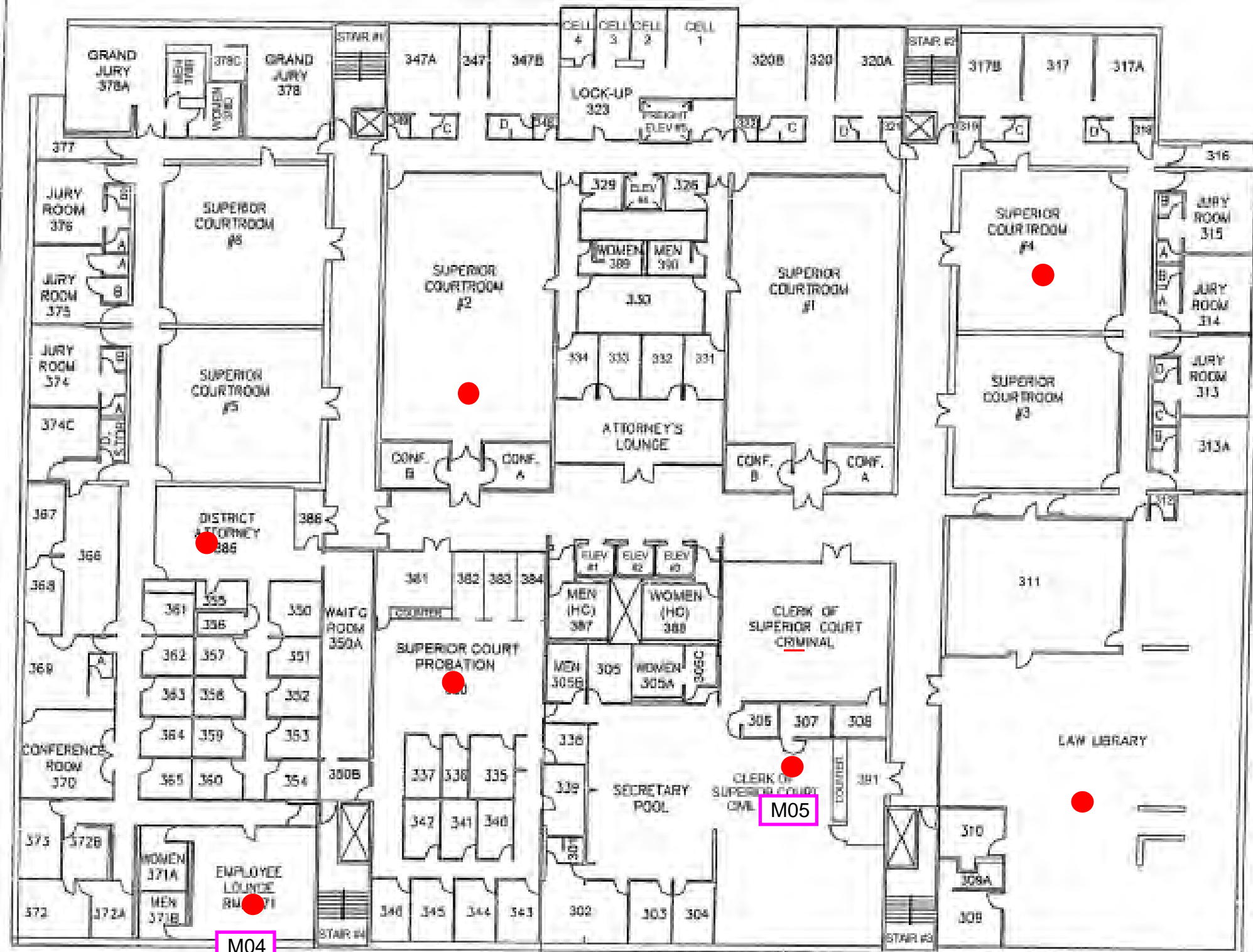
BUILDING NUMBER
CHECKED
DRAWN
LOCATION

DATE
04/26/22

PROJECT NO.
01275.007

DRAWING NO.
IAQ 3
DWG. 3 OF 5





LEVEL 3 FLOOR PLAN

LEGEND

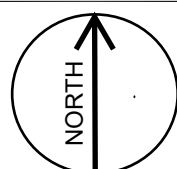
● IAQ Sample Location

M08 Mold Sample Location

Monthly IAQ Survey
Round 9
April 26, 2022

4 SPRINGFIELD HOJ
THIRD FLOOR PLAN

PLAN NOT FOR
CONSTRUCTION



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Lynnfield, MA 01940
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DRAWING TITLE
Springfield HOJ
Third Floor Plan

APPROVED:

APPROVED:

PROJECT TITLE
SHOJ IAQ Survey
50 State St, Springfield MA

BUILDING NUMBER

LOCATION

DATE
04/26/22

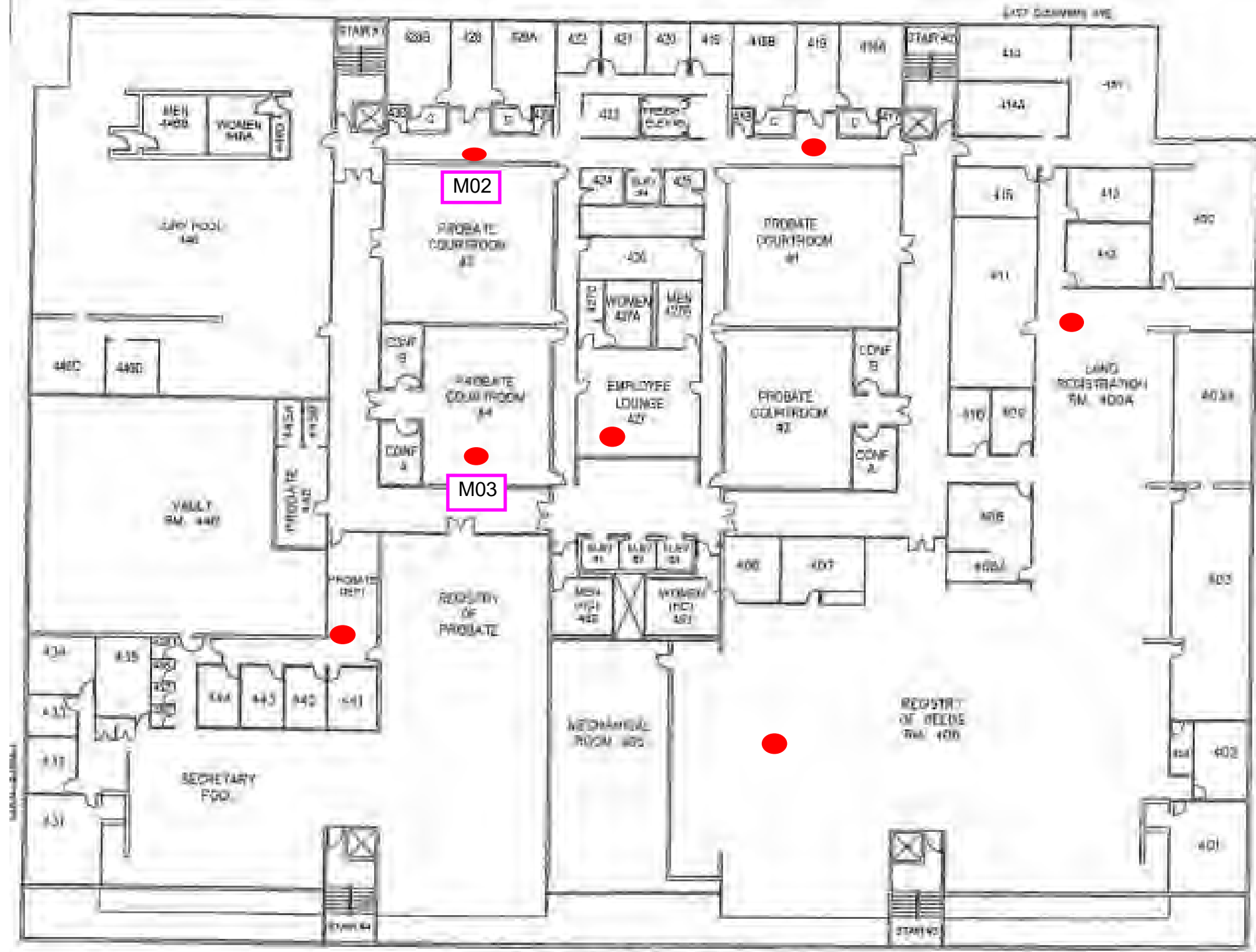
PROJECT NO.
01275.007

DRAWING NO.

IAQ 4

DWG. 4 OF 5





LEGEND

● IAQ Sample Location

M01 Mold Sample Location

Monthly IAQ Survey
Round 9
April 26, 2022

5 SPRINGFIELD HOJ
FOURTH FLOOR PLAN

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