January 25, 2023

Mr. Alfredo DiMauro, AssocAIA
Associate Dean of Campus Facilities
Asnuntuck Community College
170 Elm Street, Enfield, CT 06082

Re: Inspection and Testing for Indoor Air Quality - 109 Suite and Classroom 128
Asnuntuck Community College
Atlas/ATC Project No. 4762623001

Dear Mr. DiMauro:

At the request of Asnuntuck Community College facilities personnel (Asnuntuck), Atlas Technical Consultants, LLC (Atlas) has completed the indoor air quality (IAQ) inspection and testing for a reported chemical odor in the 109 Suite and a reported mildew odor in Classroom 128, located at Asnuntuck Community College, 170 Elm Street in Enfield, Connecticut. The purpose of this inspection and testing was to determine the cause/source of the reported odors and evaluate the indoor air quality in the 109 Suite and in Classroom 128. The IAQ inspection and testing for this evaluation was completed on January 19, 2023 by Douglas Rhoads, CHMM of Atlas. The weather at the time of the inspection was clear and approximately 34 degrees Fahrenheit.

**109 Suite Inspection and Testing (January 19, 2023)**

Atlas was on-site to inspect and test the 109 Suite for the recent reported acetone-like odors, which were reported most prevalent in the entry (open area) of the 109 Suite. High efficiency particulate air (HEPA) filtration units were run during the time of the reported odor, but did not seem to mitigate the issue. No sources/cause of the odor could be determined. The odor was noticed for approximately 1 week and then was not present in the space roughly on January 18, 2023.

No odors were present on January 19, 2023 when Atlas did the inspection and testing. The supply and return vents for the forced air system in the 109 Suite were inspected with no accumulated dust on the diffusers. The plenum above the ceiling tiles did not show any signs of leaks or water intrusions. The return vent in the 109 Suite in the open area was drawing air out of the room. The unit ventilators for the perimeter offices in the 109 Suite were operationally and no leaks were observed for these units. Lysol, “Febreze” (air freshener) and Hand Sanitizer were observed in the 109 Suite space for use.

Atlas tested the Suite (all rooms in the 109 Suite) for comfort parameters: temperature, relative humidity, carbon monoxide (CO), carbon dioxide (CO₂), also for lower explosive limit (LEL), oxygen (O₂), hydrogen sulfide (H₂S) and volatile organic compounds (VOCs). All readings were obtained using real time data instruments, which were calibrated prior to use.
The table below shows the real time data testing results for January 19, 2023 for the 109 Suite.

**TABLE 1: 109 Suite (January 19, 2023)**

<table>
<thead>
<tr>
<th>SAMPLE LOCATION</th>
<th>TEMPERATURE Degrees Fahrenheit</th>
<th>RELATIVE HUMIDITY %</th>
<th>CO₂ ppm</th>
<th>CO ppm</th>
<th>H₂S ppm</th>
<th>LEL %</th>
<th>O₂ %</th>
<th>VOCs ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Sample 1</td>
<td>34.0</td>
<td>57.0</td>
<td>424</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.9</td>
<td>0.1</td>
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<tr>
<td>109 Open</td>
<td>70.7</td>
<td>26.3</td>
<td>520</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.8</td>
<td>0.0</td>
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<tr>
<td>109A</td>
<td>71.5</td>
<td>24.8</td>
<td>575</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.8</td>
<td>0.0</td>
</tr>
<tr>
<td>109B</td>
<td>72.0</td>
<td>24.0</td>
<td>490</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.8</td>
<td>0.0</td>
</tr>
<tr>
<td>109D</td>
<td>72.1</td>
<td>23.7</td>
<td>468</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.8</td>
<td>0.0</td>
</tr>
<tr>
<td>109C</td>
<td>72.4</td>
<td>23.3</td>
<td>460</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>20.8</td>
<td>0.0</td>
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<td>0.0</td>
<td>0</td>
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<td>109E</td>
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<td>23.1</td>
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<td>20.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Acceptable Level Indoors</td>
<td>67-83</td>
<td>30-65</td>
<td>1,024</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>19.5-23.5</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1 Notes:

ppm = parts per million

The comfort parameters in the rooms for the 109 Suite were all within the acceptable ASHRAE guidelines, with the exception of relative humidity, which was below 30%. No levels of LEL were present in the 109 Suite. Oxygen was 20.8% in all the rooms which complies with the OSHA standards. Hydrogen Sulfide was none detected (ND). VOCs were none detected (0.0 parts per million).

No visible signs of a source of the past odor could be found or determined. Chemicals in the 109 Suite were hand sanitizer, “Febreze” and Lysol. These chemicals could contribute to short term odors in the spaces when used.

Based on the inspection and real time data testing by Atlas on 1/19/23, the 109 Suite does not show any levels of concern for the parameters tested. The space can be re-occupied.

**Classroom 128 Inspection and Testing (January 19, 2023)**

Classroom 128 was reported to have musty/mildew odors. No odors were present in Classroom 128 on January 19, 2023 during Atlas’ inspection. The unit ventilator in the room was running, but the thermostat was not working properly and the room was noticeably cool. The return vent in the room is connected to the adjacent hallway and was observed to be drawing air out of Classroom 128. The inside of the vent was observed to have accumulated dust. Pads were observed at the interior window sill in the room due to recent leaks at the window during rain events.

See Attachment A for the site photographs.

**Temperature, Relative Humidity (RH), Carbon Dioxide (CO₂) and Carbon Monoxide (CO) - Table 2**

Temperature, RH, CO, and CO₂ readings were obtained using a calibrated Q-Trak Indoor Air Quality Meter (Model 7565). The Q-Trak was factory calibrated prior to use at the Site. The following assessment methods were utilized during the indoor environmental assessment.
Comfort parameters – Temperature and Relative Humidity conditions were monitored inside of the building and compared to the outside conditions. Direct reading samples were measured with a TSI Q-Trak model 7565 Indoor Air Quality Meter.

Carbon Dioxide - Carbon dioxide conditions were monitored inside of the building and compared to the outside conditions. Direct reading samples were measured with a TSI Q-Trak model 7565 Indoor Air Quality Meter.

Carbon Monoxide - Carbon monoxide conditions were monitored inside of the building and compared to the outside conditions. Direct reading samples were measured with a TSI Q-Trak model 7565 Indoor Air Quality Meter.

**TABLE 2 – Temperature, Relative Humidity, CO and CO₂ Readings - Q-Track Indoor Air Quality Meter – Classroom 128 (1/19/23)**

<table>
<thead>
<tr>
<th>SAMPLE LOCATION</th>
<th>TEMPERATURE Degrees Fahrenheit</th>
<th>RELATIVE HUMIDITY %</th>
<th>CO₂ ppm</th>
<th>CO ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Sample 2</td>
<td>40.4</td>
<td>44.9</td>
<td>416</td>
<td>0.0</td>
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<tr>
<td>Classroom 128</td>
<td>67.4</td>
<td>24.7</td>
<td>495</td>
<td>0.0</td>
</tr>
<tr>
<td>Acceptable Level Indoors</td>
<td>67-83</td>
<td>30-65</td>
<td>1,016</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 2 Notes:
ppm = parts per million

Airborne Mold Spore Sample Results – Classroom 128 (January 19, 2023)

Atlas/ATC collected air samples using a portable high flow sampling device using Air-O-Cell cassettes for fungal spores and particulate analysis by Optical Microscopy. Air was drawn into the cassette with the calibrated portable sampling device at 15 liters per minute. The portable sampling device was calibrated prior to collection using the flow indicator cassette. Each sampling point was run for a total time of 5 minutes. Atlas/ATC collected non-culturable bioaerosol samples to evaluate airborne fungal (mold) spore types and concentrations. The non-culturable bioaerosol samples were submitted to EMSL Analytical, Inc., an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory in Meriden, CT, and analyzed microscopically for predominant spore types and concentrations. Table 3 presents spore types, count per cubic meter (C/M³), and total fungi for each sample collected. A copy of the Laboratory Report for the fungal spores and particulates by Optical Microscopy can be found in Attachment B.

**Table 3: Air-O-Cell Analysis Fungal Spores and Particulates (1/19/23)**

<table>
<thead>
<tr>
<th>Species</th>
<th>Classroom 128 (Sample #01)</th>
<th>Outside Sample 2 (Sample #02)</th>
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<tbody>
<tr>
<td></td>
<td>Spores/m³</td>
<td>Spores/m³</td>
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<tr>
<td>Ascospores</td>
<td>-</td>
<td>200</td>
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<tr>
<td>Basidiospores</td>
<td>80</td>
<td>2,300</td>
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<tr>
<td>Cladosporium</td>
<td>-</td>
<td>200</td>
</tr>
<tr>
<td>TOTAL SPORES/m³</td>
<td>80</td>
<td>2,700</td>
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</table>

Table 3 shows that the total mold (fungi) air sample collected in Classroom 128 is much lower than the outside total mold air sample.
RECOMMENDATIONS

The following recommendations are being made based on the inspection and testing performed for the odor complaints in the 109 Suite and Classroom 128:

- Remove chemicals in the spaces that potentially could contribute to odors.
- Clean the return vent in Classroom 128 with HEPA filtered vacuum equipment and disinfect with an EPA-approved cleaning product.
- Remove the pads at the interior window sill in Classroom 128, which could contribute to musty odors.
- Fix the unit ventilator in Classroom 128 to provide adequate heat into the space.

LIMITATIONS

This report has been prepared to assist Asnuntuck Community College in evaluating the reported odors for the inspected and tested areas on January 19, 2023, located at Asnuntuck Community College, 170 Elm Street in Enfield, CT. Atlas/ATC provided these services consistent with a level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. This statement is in lieu of other statements either expressed or implied.

This report is intended for the sole use of Asnuntuck Community College. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

Additionally, the passage of time may result in a change in the environmental characteristics at these sites. This report does not warrant against future operations or conditions that could affect the conclusions made in this report. The results, findings and conclusions expressed in this report are based only on conditions that were observed during Atlas/ATC’s site visit. A survey, sampling and analysis of asbestos-containing materials and lead-based paint was not performed by Atlas/ATC for this assessment.

If you have any questions, please do not hesitate to contact me at (860) 549-7495. Thank you for selecting Atlas/ATC to assist you with this important project.

Sincerely,

Atlas Technical Consultants, LLC

Douglas Rhoads, CHMM
Manager of Compliance Services
Direct Line: 860-466-6014
Email: doug.rhoads@oneatlas.com

Michael Matilainen CIH, CSP
Certified Industrial Hygienist
Cell Phone: 413-522-8833
Email: michael.matilainen@oneatlas.com
Attachment A

Site Photographs
Photo 1: Classroom 128.

Photo 2: Classroom 128 - window leaks (note pads on window sill).

Photo 3: Classroom 128 – return vent connected to adjacent hallway.

Photo 4: Classroom 128 – return vent with accumulated dust.
Attachment B

Laboratory Reports and Chain of Custody
### Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

#### Lab Sample Number: 242300292-0001
#### Client Sample ID: 242300292-0001
#### Volume (L): 75
#### Sample Location: ROOM 128

<table>
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<th>Spore Types</th>
<th>Raw Count</th>
<th>Count/m³</th>
<th>% of Total</th>
<th>Raw Count</th>
<th>Count/m³</th>
<th>% of Total</th>
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<tr>
<td>Alternaria (Ulocladium)</td>
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<td>Basidiospores</td>
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<td>Chaetomium++</td>
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<td>Scopulariopsis/Microascus</td>
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<td>Stachybotrys/Memnoniella</td>
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<td><strong>Total Fungi</strong></td>
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<td>13*</td>
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<td>Background (1-5)</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

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

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

Gloria V. Oriol-Aguilar, Microbiology Director
or other Approved Signatory

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 6 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. Meriden, CT AIHA LAP, LLC-EMILAP Accredited #165118

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

**MIC_M001_0002_0002**

Printed: 01/23/2023 11:13 AM
**Microbiology Chain of Custody**

**EMSL Order Number (Lab Use Only):**

OrderID: 242300292

**Company:** Atlas

**Street:** 290 Roberts St. Suite 301

**City:** East Hartford

**State/Province:** CT

**Zip/Postal Code:** 06108

**Country:** USA

**Report To (Name):** Doug Rhodes

**Telephone #:** 860-549-7419

**E-mail Address:** doug.rhodes@earthlink.com

**Project Name/Number:** Armuchuck 00 - Room 18B

**Please Provide Results:**

**State Samples Taken:**

**Turnaround Time (TAT) Options** - Please Check

- [ ] 3 Hours
- [ ] 6 Hours
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 3 Days
- [ ] 4 Days
- [ ] 5 Days
- [ ] 10 Days
- [ ] 2 Weeks

*Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements.

**Non Culturable Air Samples (Spore Traps):**

- M001 Air-O-Cell
- M003 Burkard
- M011 Bacterial Count and ID - 5 Most Prominent
- M012-10 Legionella Detection
- M012-2015 Air Sample
- M013-9 Allergen Testing
- M029 Enterooccus
- M029 Group Allergen
- M030 Micro 5
- M014 Fungal Direct Examination
- M015 Heterotrophic Plate Count
- M016 Viability Fungi ID and Count (Posterior)
- M017 Fungal Fungi ID and Count (Pantophot)
- M018 Total Coliform (Membrane Filtration)
- M019 Fecal Streptococcus
- M020 Fecal Streptococcus (Membrane Filtration)
- M021-215 Air Sample
- M022 Cryptococcus neoformans Detection
- M023-39 Allergen Testing
- M024 Group Allergen (Cat, Dog, Cockroach, Dustmite)
- M025 Allergen Analysis
- M026 Anaphylactic Water Screen
- M027 Mycotoxin Analysis

**Other Microbiology Test Codes:**

- M030 Micro 5
- M031 Moldsnap
- M032 Allergenoc-D
- M033-215 Air Sample
- M172 Versa Trap
- M173 Allegro M2
- M174 MoldSnap
- M176 Railie Smart
- M178 Versa Trap

**Preservation Method (Water):** WIA

**Name of Sampler:** Doug Rhodes

**Signature of Sampler:** DCD

<table>
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<tr>
<th>Sample #</th>
<th>Sample Location</th>
<th>Sample Type</th>
<th>Test Code</th>
<th>Volume/Area</th>
<th>Date/Time Collected</th>
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<tbody>
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<td>Room 18B</td>
<td>Air</td>
<td>M001</td>
<td>75L</td>
<td>1/19/23 8:10AM</td>
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<td>02</td>
<td>Outside Sample</td>
<td>Air</td>
<td>M001</td>
<td>75L</td>
<td>1/19/23 9:03AM</td>
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</table>

**Client Sample # (s):** 01, 02

**Total # of Samples:** 2

**Relinquished (Client):** 2/07

**Received (Client):**

**Date:** 1/19/23

**Comments:**

**Page 1 of 1 pages**