Environmental Resources Group
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May 13, 2025

Mr. Brian Lieber
Director of Operations
Okemos Public Schools
4000 Okemos Road
Okemos, Michigan 48864

**RE: Post HEPA Air Filtration Sampling-KMS Library, Mrs. Trumpies Office**
**Kinawa Middle School, 1900 Kinawa Drive, Okemos, Michigan**
**ERG Project No.: 240440**

Dear Mr. Lieber:

Environmental Resources Group, LLC. (ERG) is pleased to provide the following report of findings.

As you know, GFL Environmental placed a HEPA filter equipped air filtration device in the office of Mrs. Trumpie at Kinawa Middle School library following the discovery, earlier in the week, of the presence of highly allergenic spores. No visible mold was detected in or in the vicinity of this room and the source of these airborne spores was believed to be the recent mold remediation in the Library. The air filtration device was placed late in the afternoon on March 26th and was allowed to operate overnight.

On the morning of March 27, 2025, ERG staff performed a detailed visual inspection and conducted mold in air sampling in this office and out-of-doors as a point of comparison. The bioaerosol samples were collected using Air-O-Cell cassettes, tubing, a calibrated rotameter and a high-volume vacuum pump. The bioaerosol (air) samples were submitted to and analyzed in the ERG Indoor Air Quality Laboratory pursuant to the requirements of ASTM International Standard D-7391.

Prior to sampling, an inspection was conducted and no visible mold, dust or musty or other odors were observed in Mrs. Trumpie's Office.

**INTERPRETATION OF DATA**

**Fungal Spores**

Indoor airborne spore concentrations in "clean" commercial buildings generally total less than 2,650 s/m$^3$. *Aspergillus*/*Penicillium* together comprise less than 750 s/m$^3$ and spores of the groups Ascospores and Basidiospores generally make up less than 1,000 s/m$^3$. The total of all other spores should not exceed 900 s/m$^3$ (Baxter, Journal of Occupational Environmental Hygiene, January 2005). In addition, highly allergenic

spores (i.e. – *Pithomyces*, *Stemphyllium*, *Stachybotrys*) should not be present in a statistically significant number (a raw count of 10 or more spores).

The bioaerosol air samples from within Mrs. Trumpies Office within Kinawa Middle School were indicative of "clean" conditions and were below the limits established as the Baxter Criteria. In fact, no mold was detected in the air sample collected in Mrs. Trumpie's Office.

The outdoor sample had a spore concentration of 200 spores per cubic meter of air (s/m$^3$), in excess of the zero mold detected indoors.

**Pollen and Other Particulate**

Indoor airborne pollen concentrations in "clean" air-conditioned buildings are generally below 30 s/m$^3$. Individuals with pollen allergy may exhibit symptoms when pollen concentrations exceed approximately 50 s/m$^3$, especially when grass or highly allergenic ragweed pollen are present. Pollen was not detected indoors.

Organic fibers such as cellulose (paper fibers) may be present in "clean" buildings in the range of 0 to 10,000 s/m$^3$. These fibers are not known to cause illness or allergy at these levels, but might suggest inadequate housekeeping or poor ventilation, among other things. Cellulose concentrations were within the normal range (0 to 10,000 s/m$^3$) in the collected indoor air sample.

Inorganic fibers such as mineral wool or fiberglass (fibrous glass) may create dermal irritation when present in concentrations exceeding 1,000 s/m$^3$. Fibrous glass was not detected in the collected samples.

Synthetic fibers include polyester and Dacron and do not generally exceed 1,000 s/m$^3$. The presence of elevated synthetic fiber concentrations suggests degrading synthetic fiber surfaces (clothing, carpet, upholstered furniture) and/or the need for improved housekeeping. Synthetic fibers were detected in the air sample from Mrs. Trumpie's Office in excess of the desired 1,000 s/m$^3$ threshold.

Mineral fibers, such as gypsum, generally do not exceed 1,000 s/m$^3$. Their presence may be indicative of uncontrolled renovation or demolition. Mineral fibers were not detected in the collected air samples.

Opaque particles, including soot, fly ash, binders, copy toner, etc., generally do not exceed 5,000 s/m$^3$. When indoor concentrations exceed 10,000 s/m$^3$, attempts to identify the source of the particles and reduce their number should be made. The opaque particle concentrations did not exceed the 5,000 s/m$^3$ threshold in any collected air sample.

Insect fragments, including antennae, legs, wings, etc., should not be observed in "clean" indoor environments. Detectable quantities of insect fragments, including excrement, may cause allergic reactions in sensitive individuals and suggests the existence of current or past infestation or poor housekeeping. Insect fragments were not detected in the collected air samples.

**Conclusions**

Based on the results of testing, the following conclusions were drawn:

- The inspection revealed no visible mold, no visible dust and no musty or other odors in the office of Mrs. Trumpie.
- The bioaerosol (air) sample collected in the office of Mrs. Trumpie had mold concentrations that were below the limits of the Baxter Criteria, had no allergenic spores detected and were indicative of “clean” conditions. In fact, no mold was detected in this air sample.
- The air sample collected from within Mrs. Trumpies office had an elevated synthetic fiber concentration. ERG speculates that this is a result of ERG staff working in the room (moving the air filtration device, plugging in the air sample pump, setting up the pump stand, etc.) rather than to some underlying condition within the office.
- The office of Mrs. Trumpie may be safely reoccupied.

**Recommendations**

Based on the conclusions above the following recommendations are offered:

1. Remove that air filtration device (this task has already been completed by GFL) and reoccupy the office.

Should you have any questions or need additional information feel free to contact us.

Sincerely,

**ENVIRONMENTAL RESOURCES GROUP**

Phillip A. Peterson
Senior Project Manager

Enc

# IAQ Air Sample Data

# And

# Chain of Custody Form

# IAQ Bioaerosol Analytical Report

**ERG Project Number:** 240440

**Client Name:** Okemos Public Schools

**Project Name:** Kinawa Middle School

Date of Sample Collection: 3/27/2025
Date of Submittal: 3/27/2025
Date of Analysis: 3/27/2025

Report Date: 3/27/2025
Analyst: Kaila Schwanitz
Minimum Reporting Limit: 60 s/m³

| **Sample #** | 1 | | | 2 | | | 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Sample Location** | Field Blank | | | Mrs Trumpie's Office | | | Out-of-doors | | |
| **Spores** | structures/ sample | s/m³ | % trace scanned | structures/ sample | s/m³ | % trace scanned | structures/ sample | s/m³ | % trace scanned |
| *Alternaria* | ND | | | ND | | | ND | | |
| Ascospore | ND | | | ND | | | 10 | 100 | 20.3% |
| *Aspergillus/Penicillium* | ND | | | ND | | | ND | | |
| Basidiospore | ND | | | ND | | | ND | | |
| *Botrytis* | ND | | | ND | | | ND | | |
| *Chaetomium* | ND | | | ND | | | ND | | |
| *Cladosporium* | ND | | | ND | | | 10 | 100 | 20.3% |
| *Curvularia* | ND | | | ND | | | ND | | |
| *Drechslera/Bipolaris* | ND | | | ND | | | ND | | |
| *Epicoccum* | ND | | | ND | | | ND | | |
| *Erysiphae/Oidium* | ND | | | ND | | | ND | | |
| *Fusarium* | ND | | | ND | | | ND | | |
| Hyphal Fragments | ND | | | ND | | | ND | | |
| *Nigrospora* | ND | | | ND | | | ND | | |
| *Periconia/* Myxomycete/Smut | ND | | | ND | | | ND | | |
| *Ulocladium/Pithomyces* | ND | | | ND | | | ND | | |
| Rhizopus | ND | | | ND | | | ND | | |
| *Stachybotrys* | ND | | | ND | | | ND | | |
| *Stemphyllium* | ND | | | ND | | | ND | | |
| *Torula* | ND | | | ND | | | ND | | |
| Miscellaneous/Unidentified Spores | ND | | | ND | | | ND | | |
| **Total** | ND | | | ND | | | 20 | 200 | |
| **Pollen** | | | | | | | | | |
| Grass | ND | | | ND | | | ND | | |
| Tree | ND | | | ND | | | ND | | |
| Other/Unknown Pollen | ND | | | ND | | | 5 | 60 | 20.3% |
| **Total** | ND | | | ND | | | 5 | 60 | |
| **Other Particulate** | | | | | | | | | |
| Cellulose Fibers | ND | | | 10 | 100 | 20.3% | 34 | 400 | 20.3% |
| Fibrous Glass | ND | | | ND | | | ND | | |
| Synthetic Fibers | 5 | | 20.3% | 99 | 1300 | 20.3% | 10 | 100 | 20.3% |
| Mineral Fibers | ND | | | ND | | | ND | | |
| Opaque Particles | 5 | | 20.3% | 54 | 680 | 20.3% | 84 | 1100 | 20.3% |
| Insect Fragments | ND | | | ND | | | ND | | |
| **Total** | 10 | | | 163 | 2080 | | 128 | 1600 | |
| *Debris rating | 1 | | | 1 | | | 1 | | |

Notes:

All samples prepared and analyzed per the modified ASTM D7391-09.

***Comments***

*Debris rating (% obstructed by particulate matter ): 0= no particulate matter detected, 1= >0-5%, 2= 6%-25%, 3= 26%-76%, 4= 75%-90%, 5= >90%. Where debris rating =5, fungal/pollen/other particulate are reported as "present." For debris ratings 2-4, negative bias is expected. The degree of negative bias increases with the percent of the trace that is obstructed.

Samples were received in acceptable condition, unless otherwise indicated. Results relate only to items tested. Results are reported in units of structures per cubic meter of air (s/m³), except blank samples, where the actual number of observed particles are reported. Spore types listed without a count or other data indicate that the specific analyte was not detected during the course of sample analysis. Spores of the genera *Aspergillus* and *Penicillium* are categorized together due to their small size and spherical shape with few distinguishing characteristics. Other similar spores will be categorized as *Aspergillus*/*Penicillium* unless fruiting bodies allow more precise identifications.

ND= none detected (minimum of 20.3% trace scanned) unless otherwise reported .

Minimum Reporting Limit represents the lowest calculated limit in this report.



Flow Rate is in liters per minute. Time is reported in minutes.

The enclosed data from Environmental Resources Group, LLC (ERG) is for sample(s) collected by our client. The client bears all risk relative to the use of this data, including any course of action or inaction. Further, ERG asserts that the data pertains only to the submitted sample(s). ERG makes no representation or guarantee about the source of the material analyzed, the suitability of the sample size, sample frequency or sample distribution, or the relationship of the submitted sample(s) to the area sampled.

Approved Signatory: 

Date: 3/27/2025

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Client Name: Okemos Public Schools
Contact Person: Phil Peterson
Project Name/ Number: 240440
Project Location: Kinawa M.S. Trumpie office
Email Distribution List: Phil
Phone No.:
Purchase Order No.:

| Date | Time | Sample # | Client Sample Descriptor | MATRIX (SEE RIGHT CORNER FOR CODE) | # OF CONTAINERS | PARAMETERS: ASTM 7341 | HOLD SAMPLE | Remarks: |
|---|---|---|---|---|---|---|---|---|
| 3/27 | 10:15 | -01 | Field Blank | A | 1 | / | | |
| | ↓ | -02 | Mrs Trumpie's Office | A | 1 | / | | |
| | | -03 | Out-of-doors | A | 1 | / | | |

Matrix Code

| | | | |
|---|---|---|---|
| S | Soil | GW | Ground Water |
| A | Air | SW | Surface Water |
| O | Oil | W | Wastewater |
| B | Bulks | X | Other: Specify |

Comments:

Samples received in acceptable condition ☑

| Sampled/Relinquished By: | Date/ Time | Received By: |
|---|---|---|
| Kaila Schwanitz | 3/27/25 11:03 | |
| Relinquished By: | Date/ Time | Received By: |
| Relinquished By: | Date/ Time | Received By Laboratory: |

**Turnaround Time** ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

✓ Same day ____ 1 bus. day ____ 2 bus. days ____ 3 bus. days ____ 4 bus. days

____ 5-7 bus. days (standard) Other (specify time/date requirement): _____

**LAB USE ONLY**

ERG project number: 240440

Temperature upon receipt at Lab (if applicable):

Please see back for terms and conditions