LEW CORPORATION
*The Environmental Company℠*
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181 US Hwy 46
Mine Hill, NJ 07803
(908) 654-8068
(800) 783-0567
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# MICROBIAL INVESTIGATION REPORT

***Performed At:***
Clinton Middle School
34 Grayrock Road
Clinton, NJ 08809

***Performed For:***
Clinton Township Schools
P.O. Box 6
Annandale, NJ 08801

***Prepared By:***
LEW Corporation
181 US Hwy 46
Mine Hill, NJ 07803

(908) 654-8068 Phone
(908) 654-8069 Fax

Date of Inspection: 9/19/18
Project Number: 181023

# TABLE OF CONTENTS

## CONTACT INFORMATION

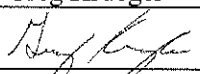
Site:

| | |
|---|---|
| Name | Clinton Middle School |
| Street Address: | 34 Grayrock Road Clinton, NJ 08809 |
| Date Inspected | 9/19/2018 |

Owner:

| | |
|---|---|
| Name: | Clinton Township Schools |
| Street: | P.O. Box 6<br>Annandale, NJ 08801 |
| Phone Number: | (908) 236-7235 |

Microbial Consultant:

| | |
|---|---|
| Consultant Name: | Greg Krueger |
| Signature: |  |
| Date: | September 24, 2018 |
| Email: | gkrueger@lewcorp.com |

Consultant Information:

| | |
|---|---|
| Organization: | LEW Corporation |
| Street: | 181 US Hwy 46 |
| City, State & Zip: | Mine Hill, NJ 07803 |
| Phone number: | 908-654-8068 |
| Web address: | www.LEWCorp.com |

Laboratory Information:

| | |
|---|---|
| Organization: | Environmental Hazards Services, LLC |
| Street: | 7469 White Pine Rd. |
| City, State & Zip: | Richmond, VA 23237 |
| Phone number: | 800-347-4010 |
| AIHA Lab ID #: | 100420 |

## INTRODUCTION TO FUNGI

### Background Information About Fungi

Fungi can be found almost anywhere; they can grow on virtually any organic substance, as long as moisture and oxygen are present. There are fungi that can grow on wood, paper, carpet, foods, and insulation. When excessive moisture accumulates in buildings or on building materials, fungal growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. It is impossible to eliminate all fungi and fungal spores in the indoor environment. However, fungi growth can be controlled indoors by controlling moisture indoors.

Fungi reproduce by making spores that usually cannot be seen without magnification. Spores waft through the indoor and outdoor air continually. When fungal spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. Fungi gradually destroy the things they grow on. Many types of fungi exist. All fungi have the potential to cause health effects. Fungi can produce allergens that can trigger allergic reactions or even asthma attacks in people allergic to fungi. Some Genius of fungi are known to produce potent toxins and/or irritants. Potential health concerns are an important reason to prevent fungal growth and to remediate/clean up any existing indoor fungal growth.

Since fungi require water to grow, it is important to prevent moisture problems in buildings. Moisture problems can have many causes, including uncontrolled humidity. Some moisture problems in buildings have been linked to changes in building construction practices during the 1970s, 80s, and 90s. Some of these changes have resulted in buildings that are tightly sealed, but may lack adequate ventilation, potentially leading to moisture buildup. Building materials, such as drywall, may not allow moisture to escape easily. Moisture problems may include roof leaks, landscaping or gutters that direct water into or under the building, and poorly vented combustion appliances. Delayed maintenance or insufficient maintenance is also associated with moisture problems.

When fungal growth occurs in buildings, some building occupants, particularly those with allergies or respiratory problems, may report adverse health problems. Remediators should avoid exposing themselves and others to fungal-laden dusts as they conduct their cleanup activities. Caution should be used to prevent fungi and fungal spores from being dispersed throughout the air where building occupants can inhale them.

### Fungi Prevention Tips

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.

- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60% relative humidity (RH), ideally 30-50%, if possible.
- Perform regular building/HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 24 - 48 hours.
- Don't let foundations stay wet. Provide drainage and slope the ground away from the foundation.

## SCOPE OF WORK

LEW Corporation performed air sampling at Clinton Middle School, 34 Grayrock Road, Clinton, NJ 08809 to determine the presence or absence of elevated airborne mold spore concentrations. Specifically, LEW Corporation sampled the auditorium. LEW Corporation will have the samples analyzed and based on all the data collected provide a written report discussing the results and recommendations.

## PROCEDURES

### General

The inspection protocols were based on the guidelines of the EPA "Building Air Quality Guide for Building Owners and Facility Managers", ISBN-0-16-035919-8, published in December 1991, *Bioaerosols: Assessment and Control*, published by the American Conference of Governmental Industrial Hygienists in 1999 and Recognition, Evaluation and Control of Indoor Mold, published by the American Industrial Hygiene Association in 2008. These guides describe a process of building inspection and evaluation, information exchange and problem solving to enhance occupant health, comfort and productivity. The process involves the assessment of numerous air quality issues, including thermal comfort, emission sources, biological contamination, fresh air ventilation, and energy management.

### Airborne Fungi

Air sampling for non-viable fungi (spores) is conducted with Air-O-Cell cassettes manufactured by Zefon Analytical Accessories of Ocala, Florida. These cassettes are also known as spore traps. A high-volume sampling pump is connected to the cassette and at least fifteen liters of air per minute are pulled through the cassette. The sampling time

varies from two minutes to ten minutes depending upon the site conditions and the investigator's best judgment. The goal is to not overload the cassette.

## INSPECTION

LEW Corporation was requested to perform air sampling of the auditorium. Spore trap air samples were collected from two locations in the auditorium and one from the stage. One comparison sample was collected from the exterior front of the building.

The laboratory results of the air sample collected from the east side of the auditorium (181023-2) did not indicate the presence of significantly amplified concentrations of airborne mold spores when compared to the outdoor air sample.

The laboratory results of the air sample collected from the west side of the auditorium (181023-3) did not indicate the presence of significantly amplified concentrations of airborne mold spores when compared to the outdoor air sample.

The laboratory results of the air sample collected from the stage (181023-4) did not indicate the presence of significantly amplified concentrations of airborne mold spores when compared to the outdoor air sample.

## DISCUSSION AND RECOMMENDATIONS

The laboratory results from all the samples did not indicate the presence of significantly elevated airborne mold spore concentrations. Based on this information, it is LEW Corporation's opinion that the air quality of the auditorium at the Clinton Middle School was not being negatively impacted by mold growth at the time of the sampling.

APPENDIX A
Laboratory Results

EHS Laboratories

# Non-Viable Spore Trap Analysis Report

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Client: LEW Corp
181 US Hwy 46
Mine Hill, NJ 07803

Report Number: 18-09-02567

Received Date: 09/20/2018
Analyzed Date: 09/20/2018
Reported Date: 09/20/2018

Project/Test Address: 34 Grayrock Road; Clinton, NJ

Client Number:
201327

Fax Number:
Ext 18

## Laboratory Results

| Lab # : | 18-09-02567-001 | | 18-09-02567-002 | | 18-09-02567-003 | | 18-09-02567-004 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID : | 181023-1 | | 181023-2 | | 181023-3 | | 181023-4 | | | |
| Date Collected : | 9/19/2018 | | 9/19/2018 | | 9/19/2018 | | 9/19/2018 | | | |
| Collection Location : | OUTDOOR | | AUDITORIUM 1 | | AUDITORIUM 2 | | STAGE | | | |
| Sampling Media : | Air-O-Cell | | Air-O-Cell | | Air-O-Cell | | Air-O-Cell | | | |
| Analytical Sensitivity (spores/m3) : | 13.3 | | 13.3 | | 13.3 | | 13.3 | | | |
| Volume (L) : | 75 | | 75 | | 75 | | 75 | | | |
| Spore ID | Raw Count | Results (Spores/m3) | Raw Count | Results (Spores/m3) | Raw Count | Results (Spores/m3) | Raw Count | Results (Spores/m3) | Raw Count | Results (Spores/m3) |
| Cladosporium spores | 248 | 3300 | 5 | 67 | 1 | 13 | 2 | 27 | | |
| Penicillium/Aspergillus group spores | 2 | 27 | | | | | 58 | 770 | | |
| Alternaria spores | 7 | 93 | | | | | | | | |
| Pyricularia spores | 2 | 27 | | | | | | | | |
| Curvularia spores | 4 | 53 | | | | | | | | |
| Stachybotrys spores | | | | | | | 1 | 13 | | |
| Torula spores | 1 | 13 | | | | | | | | |
| Epicoccum spores | 1 | 13 | | | | | | | | |
| Cercospora spores | 3 | 40 | | | | | | | | |
| Nigrospora spores | 2 | 27 | | | | | | | | |
| smuts, Periconia, myxomycetes | 15 | 200 | 4 | 53 | 1 | 13 | | | | |
| ascospores | 36 | 480 | | | 1 | 13 | 1 | 13 | | |
| basidiospores | 55 | 730 | | | 1 | 13 | 2 | 27 | | |
| TOTAL SPORES(Spores/m3) | | 5000 | | 120 | | 53 | | 850 | | |
| Analyst: | Kathy Fletcher | | Kathy Fletcher | | Kathy Fletcher | | Kathy Fletcher | | | |

# Environmental Hazards Services, L.L.C

Client Number: 201327 Report Number: 18-09-02567

Project/Test Address: 34 Grayrock Road; Clinton, NJ

Method: Non-Culturable Spore Trap Examination

Reviewed By Authorized Signatory: Tasha Eaddy

*Tasha Eaddy*
QA/QC Clerk

EHS Laboratories
Environmental Hazards Services, LLC

# Mold Chain-of-Custody Form

SHIP TO: 7469 Whitepine Rd. Richmond, VA 23237
Phone: (800) 347-4010 FAX: (804) 275-4907
ONLINE CLIENT PORTAL AVAILABLE FOR ANALYSIS RESULTS AT:
www.leadlab.com

18-09-02567

Due Date:
09/20/2018
(Thursday)
AE

Company Name: Lew Corporation  Account Number: 201327

Address: 181 US Highway 46  City/State/Zip: Mine Hill NJ 07803

Phone: (908) 654-8068  Email: labresults@lewcorp.com  Fax:  P.O. #: 181023

Testing Address: 34 Grayrock Road  City/State (Required): Clinton, NJ

Collection Date: 9/19/18  Time Collected: 2:15  AM / (PM)  Collected by: Greg Krueger

Outside Air Temperature: 80 °F  Indoor Air Temperature: 74 °F  Was There any Precipitation (Rain, Sleet, or Snow) 2 Hours or Less Before Taking the Samples? ☐ Yes ☑ No

**TURN AROUND TIME: IF NO TAT IS SPECIFIED, SAMPLE(S) WILL BE PROCESSES AND CHARGED AS 3 DAY TAT.**

| | 1-Day | | 2-Day | | 3-Day |
|---|---|---|---|---|---|
| ℓ | Same Day | | | Weekend – Must Call Ahead | |

**Sample Type Codes**

| Air/Non Viable | Spore Trap | Swab Sample Surface |
|---|---|---|
| Bulk = B | Air-O-Cell = AOC | Non-Porous = NP |
| Swab = S | Cyclex D = C | Semi-Porous = SP |
| WallCheck = W | BioSIS = B | Porous = P |
| Bio Tape = T | MicroS=MS | |

| Sample No. | Sample Type | Sample Location | Air Samples: Spore Trap Type | Air Samples: Air Volume (Total Liters) | Swab Samples: Surface Type (NP/SP/P) | Swab Samples: Area of Mold (In Square Feet - ft²) | Qualitative Particulate Analysis (Additional $10.00 per sample) | Comment |
|---|---|---|---|---|---|---|---|---|
| 181023-1 | Air | Outdoor | AOC | 75 | | | | |
| -2 | | Auditorium 1 | ↓ | ↓ | | | | |
| -3 | | Auditorium 2 | ↓ | ↓ | | | | |
| -4 | | Stage | ↓ | ↓ | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Released by: [signature]  Signature: Greg Krueger  Date/Time: 9/19/18

Received by: T. Mahon  Signature: [signature]  Date/Time: 9/20/18 10:45