

Crystal Lake School District 47  
Lundahl Middle School  
Crystal Lake, IL 60014  
Mold Indoor Air Quality Study  
Boys' Locker Room and Lab 6

PREPARED FOR:

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PREPARED ON: July 21, 2025

PREPARED BY:

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## 1. INTRODUCTION

Pepper Environmental Technologies, Inc. (PET) is pleased to provide you with this letter summarizing the laboratory results from the indoor air quality testing for mold/fungus spores at Lundahl Middle School, located at 560 Nash Rd, Crystal Lake, Illinois 60014.

This study was performed on Monday July 14, 2025. The building was occupied during the time of the study. Mold air samples were collected in the Boys' Locker Room and in Lab 6. Samples were also collected outdoors, for comparison purposes.

## 2. SAMPLING

The mold air sampling was conducted using a Calibrated High Volume Air Sampling Pump (Zefon Bio Pump Plus) and Air-O-Cell cassettes. Both indoor and outdoor samples were collected. All samples were collected at a flow rate of 15 liters per minute at a rate of 5 minutes each. Samples were hand delivered under a chain of custody to Sterling Laboratories in Chicago, Illinois, for laboratory analysis. The laboratory results can be found in Attachment A.

The primary purpose of the sampling was to determine mold spore concentrations within the Boy's Locker Room, and in Lab 6. Mold spores are like microscopic seeds. Virtually all molds produce spores. Each species of mold produces spores that are unique to its species. This morphology is used to identify the mold specie types and quantities that may be present. Mold spores are found both indoors and outdoors.

Currently there are no federal, state, or local standards regulating exposure to molds. Mold air sample results from this study can be found on the following pages and in the attached laboratory report.

## 3. FINDINGS / AIR-O-CELL TEST RESULTS

| AREA / ROOM SAMPLED    | TOTAL FUNGAL SPORES RAW COUNTS | SPORE COUNTS PER CUBIC METER OF AIR | IDENTIFICATIONS      |
|------------------------|--------------------------------|-------------------------------------|----------------------|
| 1<br>Boys' Locker Room | 1                              | 13                                  | <i>Basidiospores</i> |

| AREA / ROOM SAMPLED                         | TOTAL FUNGAL SPORES RAW COUNTS | SPORE COUNTS PER CUBIC METER OF AIR | IDENTIFICATIONS                                                                                                                 |
|---------------------------------------------|--------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 2<br>Lab 6                                  | 2                              | 27                                  | <i>Aspergillus/Penicillium, Basidiospores</i>                                                                                   |
| 3<br>Outdoors,<br>South Side of<br>Building | 209                            | 2,787                               | <i>Alternaria, Ascospores, Aspergillus/Penicillium, Basidiospores, , Cercospora, Cladosporium, Epicoccum, Smuts/Myxomycetes</i> |
| 4<br>Outdoors,<br>North Side of<br>Building | 301                            | 4,013                               | <i>Alternaria, Ascospores, Aspergillus/Penicillium, Basidiospores, , Cercospora, Cladosporium, Smuts/Myxomycetes</i>            |

#### 4. METHODOLOGIES / SUMMARY OF RESULTS

Currently, there are no governmental standards for acceptable levels of mold spores. In lieu of any standard, mold air samples are usually evaluated in one of two ways. The first is by comparing the total airborne concentration of spores found inside the building to those found outside the building. Typically, inside concentrations are less than outdoor concentrations. If the opposite occurs, it may be an indication of a concern. The second method is to evaluate the genus/species of the mold spores identified. In general, airborne mold specie-types identified inside a building should be similar to those found outside the building. If significant variations are observed, it may also be an indication of a potential concern.

Mold concentrations found inside the building during this study ranged from 13 to 27 spores per cubic meter of air (sp/m<sup>3</sup>). The outdoor comparison samples ranged from 2,787 to 4,013 sp/m<sup>3</sup>.

The mold specie-types found on the indoor samples during this study included one to two specie types, which were also found in higher abundance on the outdoor samples. The outdoor specie-types were more numerous than those found indoors, which is a desirable finding. According to the Centers for Disease Control (CDC), the most common indoor molds specie-types are *Cladosporium* and *Aspergillus/Penicillium*, and these specie-types can also be found outdoors. The National Institute of Health reports the *Aspergillus* species is a ubiquitous mold which can be found in many structures, with some literature suggesting that airborne spores should generally be less than 1,500 sp/m<sup>3</sup>, with *Aspergillus/Penicillium* spores being on average less than 700

sp/m<sup>3</sup>. *Ascospore* concentrations over 5,000 sp/m<sup>3</sup> may be a concern to a susceptible population. *Aspergillus/Penicillium* and *Ascospore* concentrations found indoors during this study were well below these theoretical thresholds. Average outdoor mold spore concentrations during this study were 3,400 sp/m<sup>3</sup>, which is 125 to 161 times higher than the indoor concentrations, which is also a desirable finding.

## 5. CONCLUSION

At the time of air testing, no musty or damp odors and no standing water were noted in the test locations. In general, the mold specie-types found inside the building during this study were similarly present in the specie types found outdoors, which is a normal finding. Indoor spore concentrations were also much lower than the outdoor concentrations, which is a normal and desirable finding.

Please find the attached Laboratory Report (Attachment A), and Sample Location Map (Attachment B) outlining the mold air sampling results and sampling locations, respectively. PET's Environmental Credentials can be found in Attachment C.

PET appreciates the opportunity to perform this IAQ study for Crystal Lake Elementary School District 47. If you have any questions or concerns, please do not hesitate to contact us.

Sincerely,

**PEPPER ENVIRONMENTAL TECHNOLOGIES, INC.**



Steve Soloma, PM-ASP  
Senior Project Manager



Michael J. Grant, CIEC, CMI  
Vice President

# **ATTACHMENT A**

# **ANALYTICAL LABORATORY RESULTS**



2242 West Harrison St., Suite 200, Chicago, IL 60612-3766  
Tel: (312) 733-0551 Fax: (312) 733-2386 Info@TheSterlingLab.com

July 17, 2025

Pepper Environmental Technologies  
411 Lake Zurich Road  
Barrington, IL 60610  
Telephone: (847) 304-1326  
Fax: (847) 304-0121

Analytical Report for Work Order: 25070139 Revision 0  
RE: 2400913 MMM, D47 Lundahl IAQ, Crystal Lake, IL

Dear Pepper Environmental Technologies:

Sterling Labs received 4 samples for the referenced project on 7/14/2025 10:30:00 AM. The analytical results are presented in the following report.

Enclosed are the analytical results for the above referenced project. The samples were analyzed as per the enclosed chain of custody.

All analyses were performed in accordance with established microbiology methodology. All Quality Control criteria as specified in the methods have been met. QA/QC documentation and raw data will remain on file for future reference. Sample acceptance criteria has been met unless noted in the Case Narrative or Sample Receipt Checklist. If required, an estimate of uncertainty for the analyses can be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions about the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

A solid black rectangular box redacting the signature of Daniel Mikos.

Daniel Mikos  
Microscopist

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples as received and tested. Sterling labs is not responsible for customer provided information found in the report that is used to calculate final results. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, Sterling Labs will be under no obligation to support, defend or discuss the analytical report.*



**Analytical Report for Microbiological Analysis - Fungal Spores in Air**

Client: Pepper Environmental Technologies  
 Project ID: 2400913 MMM, D47 Lundahl IAQ, Crystal Lake, IL  
 STAT Project No.: 25070139

Date/Time Received: 7/14/25 10:30  
 Date Analyzed: 7/17/2025  
 Analyzed By: DM  
 QC By: ZN

| Client Sample No.:             | 1                 |                      |    |       | 2            |                      |    |      | 3                |                      |    |      | 4                |                      |    |      |
|--------------------------------|-------------------|----------------------|----|-------|--------------|----------------------|----|------|------------------|----------------------|----|------|------------------|----------------------|----|------|
| Sample Description:            | Boy's Locker Room |                      |    |       | Lab 6        |                      |    |      | Outdoors S. Side |                      |    |      | Outdoors N. Side |                      |    |      |
| Date Sampled:                  | 7/14/2025         |                      |    |       | 7/14/2025    |                      |    |      | 7/14/2025        |                      |    |      | 7/14/2025        |                      |    |      |
| STAT Sample No.:               | 25070139-001      |                      |    |       | 25070139-002 |                      |    |      | 25070139-003     |                      |    |      | 25070139-004     |                      |    |      |
| Volume (m <sup>3</sup> ):      | 0.075             |                      |    |       | 0.075        |                      |    |      | 0.075            |                      |    |      | 0.075            |                      |    |      |
|                                | Total Count       | Count/m <sup>3</sup> | DL | %     | Total Count  | Count/m <sup>3</sup> | DL | %    | Total Count      | Count/m <sup>3</sup> | DL | %    | Total Count      | Count/m <sup>3</sup> | DL | %    |
| <b>Total Fungal Spores:</b>    | 1                 | 13                   | 13 | 100   | 2            | 27                   | 13 | 100  | 209              | 2,787                | 13 | 100  | 301              | 4,013                | 13 | 100  |
| <i>Alternaria</i>              |                   |                      |    |       |              |                      |    |      | 3                | 40                   |    | 1.4  | 2                | 27                   |    | 0.7  |
| <i>Ascospores</i>              |                   |                      |    |       |              |                      |    |      | 45               | 600                  |    | 21.5 | 90               | 1,200                |    | 29.9 |
| <i>Aspergillus/Penicillium</i> |                   |                      |    |       | 1            | 13                   |    | 50.0 | 5                | 67                   |    | 2.4  | 3                | 40                   |    | 1.0  |
| <i>Basidiospores</i>           | 1                 | 13                   |    | 100.0 | 1            | 13                   |    | 50.0 | 60               | 800                  |    | 28.7 | 70               | 933                  |    | 23.3 |
| <i>Botrytis</i>                |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Cercospora</i>              |                   |                      |    |       |              |                      |    |      | 2                | 27                   |    | 1.0  | 1                | 13                   |    | 0.3  |
| <i>Chaetomium</i>              |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Cladosporium</i>            |                   |                      |    |       |              |                      |    |      | 85               | 1,133                |    | 40.7 | 130              | 1,733                |    | 43.2 |
| <i>Curvularia</i>              |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Drechslera/Bipolaris</i>    |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Epicoccum</i>               |                   |                      |    |       |              |                      |    |      | 1                | 13                   |    | 0.5  |                  |                      |    |      |
| <i>Fusarium</i>                |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Nigrospora</i>              |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Oidium/Erysiphe</i>         |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Periconia</i>               |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Phoma</i>                   |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Pithomyces</i>              |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Pleospora</i>               |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Polythrincium</i>           |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Rhizopus/Mucor</i>          |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Rusts</i>                   |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Smuts/Myxomycetes</i>       |                   |                      |    |       |              |                      |    |      | 8                | 107                  |    | 3.8  | 5                | 67                   |    | 1.7  |
| <i>Stachybotrys</i>            |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Stemphylium</i>             |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Torula</i>                  |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| <i>Ulocladium</i>              |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| Unidentified Fungi             |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| Other                          |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| Mycelial Fragments             |                   |                      |    |       |              |                      |    |      |                  |                      |    |      |                  |                      |    |      |
| Debris Level                   | Moderate          |                      |    |       | Moderate     |                      |    |      | Moderate         |                      |    |      | Moderate         |                      |    |      |
| Organic Material               | Present           |                      |    |       | Present      |                      |    |      | Present          |                      |    |      | Present          |                      |    |      |

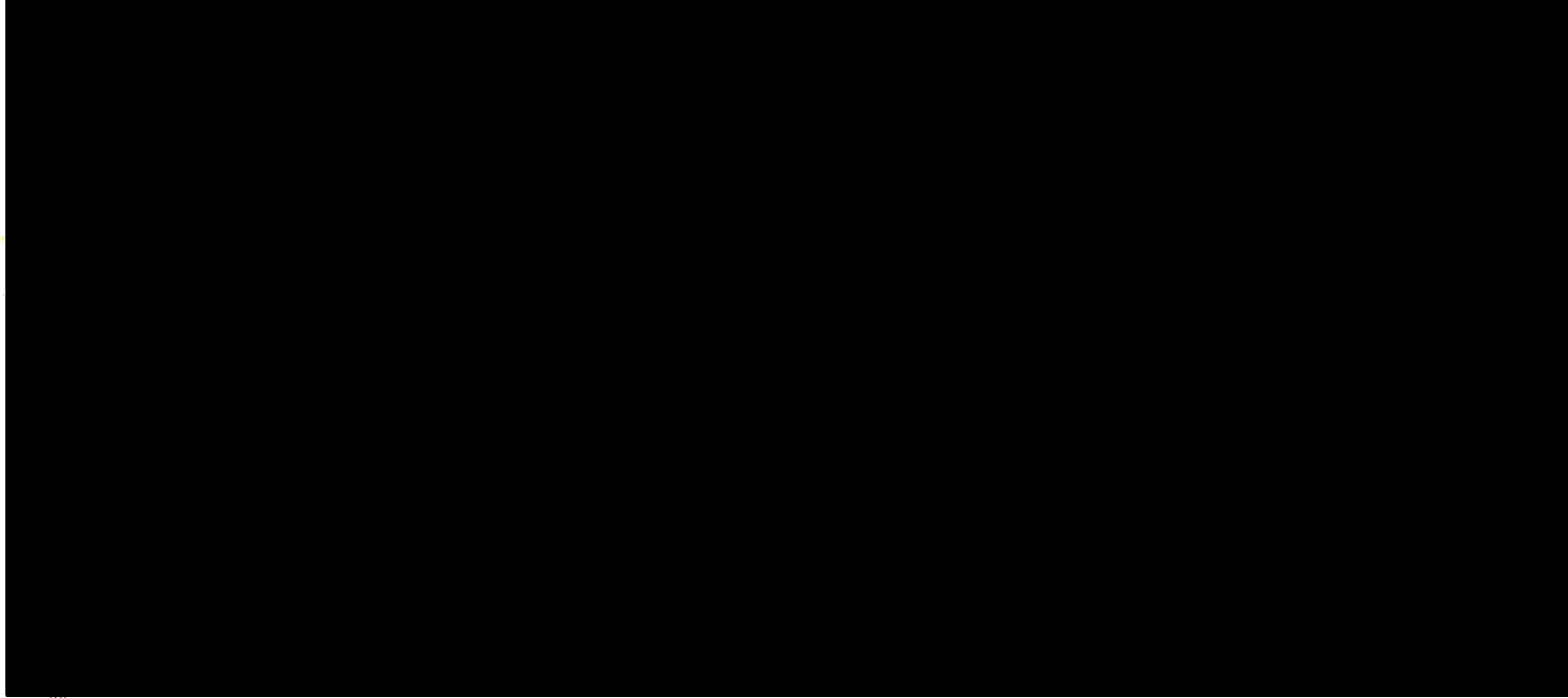


# **ATTACHMENT B**

## **SAMPLE LOCATIONS**

# JULY 14, 2025

## MOLD INDOOR AIR QUALITY SAMPLING LOCATIONS

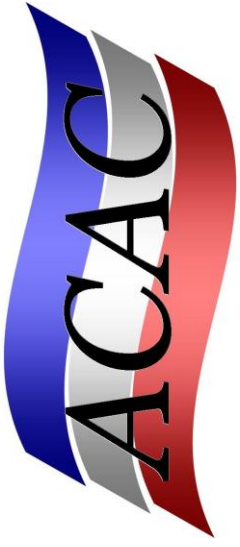


 LOWER LEVEL FLOOR PLAN  
SCALE: 1/16" = 1'-0"

C:\Revit\22-19144-00\_Lundahl\_AR\_2019\_mschmid@dlrgrp.com.rvt  
1/14/2023 3:56:57 PM

# **ATTACHMENT C**

# **ENVIRONMENTAL CREDENTIALS**



# American Council for Accredited Certification

hereby certifies that

**Michael J. Grant**

has met all the specific standards and qualifications of the re-certification process,  
including continued professional development, and is hereby re-certified as a

**CIEC**

**Council-certified  
Indoor Environmental Consultant**

This certificate expires on August 31, 2025

1108018

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Charles F. Wiles, Executive Director

Certificate Number

This certificate remains the property of the American Council for Accredited Certification.

# CERTIFICATE OF COMPLETION

THIS CERTIFICATE DEMONSTRATES THAT

**MICHAEL GRANT**

COMPLETED THE FOLLOWING COURSE TAUGHT BY INDOOR SCIENCES INC.:

**CERTIFIED MICROBIAL INVESTIGATOR (CMI)**

THE COURSE WAS ATTENDED ON **AUGUST 20 – 21, 2012** AND  
INCLUDED **16 HOURS** OF INDOOR AIR QUALITY TRAINING.



**IndoorSciences**



IAN CULL, PE, CIEC  
PRESIDENT  
INDOOR SCIENCES, INC.

8/22/2012

DATE