



March 7, 2011

Mr. Leonard Costable  
Director of Facilities  
Mahopac Central School District  
179 East Lake Boulevard  
Mahopac, NY 10541  
E Mail Address: [costablel@mahopac.k12.ny.us](mailto:costablel@mahopac.k12.ny.us)  
Telephone: (845) 628 3415

**Re: Air Quality Screening Inspection  
Inspection of Gymnasium  
Austin Road Elementary School  
390 Austin Rd, Mahopac, NY**

Dear Mr. Costable:

At the request of the Mahopac Central School District (Mahopac), Louis Berger Group, Inc. (Berger) performed an air quality screening inspection at the above referenced address (hereafter referred to as "the School"). The purpose of the inspection was to assess conditions which could potentially impact classroom and/or School Indoor Air Quality (IAQ) through a combination of real time air testing and visual inspection methods within the above referenced class room. This site inspection was performed on January 19, 2011 by Berger Industrial Hygienist; Ms. Chawinie Miller.

### **History**

The gymnasium is located on the first floor and utilized for physical education. Based on discussions with Austin Road School Head Custodian Mr. Tom Wellington, Berger is not aware of any standard air quality issues related to odor, water infiltration or visible mold. Faculty reported complaints of heavy dust build up within the area, although no student complaints were reported.

### **Methodology**

Berger performed real time testing utilizing a TSI, Inc. (TSI) Q-TRAC<sup>®</sup> IAQ Meter, measuring carbon dioxide, carbon monoxide, relative humidity and temperature. This meter was calibrated/field challenged immediately prior to the site visit as per manufacturer recommendations.

Analytical sampling for mold spores was performed utilizing Air O Cell cassettes fitted to Gast<sup>®</sup> high flow pumps. Samples were collected at a flow rate of approximately fifteen (15) liters per minute such that a total volume of one hundred fifty (150) liters was achieved. Two (2) samples were collected within the gymnasium with one (1) sample on the north and south sides of the room. In addition two (2) reference samples were collected outdoors at the time of the site visit. These results are presented as an attachment at the end of this report for further review.

As a proactive measure, Berger also performed moisture screening of accessible wall and floor surfaces through the use of a Protimeter Moisture Measurement System (MMS). The Protimeter MMS provides percent moisture content values in wood or wood moisture equivalent (WME) and other non-conductive materials (e.g., masonry). The MMS displays the measurements on a

relative scale of 0 – 1,000. Additionally, the instrument indicates whether the material sampled is “dry”, “at risk”, or “wet”. A “dry” result indicates that the material has a WME of  $\geq 5\%$  but  $< 17\%$ . An “at risk” measurement indicates that the material has a WME of  $\geq 17\%$  but  $< 20\%$ . A “wet” result indicates that the material has a WME of  $\geq 20\%$ .

Berger lastly performed a visual screening of the room for additional problems that may play a supporting role in creating conditions conducive to poor building IAQ, such as water damage, microbial growth or neighboring facility processes or activities.

## **Physical Survey Findings**

### ***Gymnasium***

In general, the gymnasium coach’s offices were noted to be clean and well kept. The main area of the gym was confirmed to be visibly impacted by dust on the floor, and particular horizontal surfaces (e.g., wall molding/mats). A large amount of materials were also noted within the storage areas. In addition, Berger also did not observe any plants or animals in this classroom that could potentially be responsible for common or potential IAQ odor or sensitivity complaints.

This room is equipped with three (3) packaged univent/HVAC units (installed in approximately 1967 and located within an upstairs HVAC room) which were inspected by Berger through the assistance of School Maintenance Staff. Maintenance staff removed HVAC/univent access covers (intake and mixing chamber) for inspection, which revealed that filters were noted to be in fair condition and changed at least three (3) times per year.

A thorough inspection of the ceiling plenum (within the coach’s offices) was also performed in this room. The room is equipped with a dropped ceiling and finished with acoustical ceiling tiles, above which is a two (2) foot ceiling plenum space. No odors, rodent droppings, or mold were observed in this area, although two (2) water stained ceiling tile was noted within the Kitterage Coach’s office. Small amounts of rodent droppings were noted within the ceiling plenum of both coach’s offices.

An inspection of the main area of the gym and adjacent storage spaces was performed as well. Berger noted large amounts of standing dust of surfaces within the main gym area. Berger noted two (2) areas of water damaged wood (approximately 5 square feet each) adjacent to the exit doors within the main gym area.

During inspection, Berger did note chemicals within the room; Zep disinfectant, expo cleaner, prestige and heaven sent air freshener. The storage of food was observed and a refrigerator was noted within the coach’s office.

Representative moisture meter readings were taken within this room along the floor and walls at the base, 3 feet high and 6 feet high. Moisture mapping of this area did not reveal any elevated moisture readings.

## Real Time Screening Findings

Please see below for a summary of data:

### QTRAC IAQ Meter:

A QTRAC ® IAQ Meter was utilized to measure carbon monoxide, carbon dioxide, relative humidity and temperature. Data was collected for a twenty four (24) hour period and is summarized in the following table and discussed in the following sections.

Location	Temperature	Relative Humidity	Carbon Monoxide	Carbon Dioxide
Coach's Office (Kitterage)	65.1 to 71.0°F	13.2 to 26.6 %	ND to 0.1 ppm	238 to 700 ppm
	68.1°F (average)	20.6% (average)	0.0 ppm (average)	357 ppm (average)

ND = Not Detected

Please see guidelines on the following page summarizing OSHA, ACGIH and the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 55-1992, Thermal Environmental Conditions for Human Occupancy and ASHRAE Standard 62-1999/2000, Ventilation for Acceptable Indoor Air Quality:

Comfort Parameter	Acceptable Value
Carbon Dioxide	ASHRAE: $\text{CO}_2 \text{ (Outside Air)} + 700 = 1,100 \text{ ppm}$ NIOSH Guideline: 1,000 ppm
Temperature	ASHRAE: 73.0°F – 79.0°F (Summer Season) ASHRAE: 68°F – 75.0°F (Winter Season) OSHA Technical Guideline: 68°F – 76.0°F (Year Round)
Relative Humidity	ASHRAE: 30% – 60% OSHA Technical Guideline: 20% – 60%
Carbon Monoxide	ACGIH TLV: 25 ppm; OSHA TWA: 50 ppm

A review of the data for carbon monoxide, temperature and carbon dioxide, indicate that averaged levels are within the applicable standards, although transient exceedance of carbon dioxide guidelines will occasionally occur in a classroom setting. A review of the relative humidity and temperature data indicated that levels were below OSHA and ASHRAE minimum *recommended* relative humidity and temperature values. Although this is the case, relative humidity conditions are reflective of outside conditions at this time of year and therefore should not be regarded as a cause for concern. Temperature readings below the OSHA and ASHRAE recommended minimum values occurred during period when the room was unoccupied.

### Lighthouse Dust Meter

A Lighthouse dust meter was utilized to measure total dust, respirable dust (PM<sub>10</sub>) and PM<sub>2.5</sub>. Real time readings were collected within the main and coach's offices. Data is summarized in the following table and discussed in the following sections.

#### Gymnasium

Parameter	Peak (ug/m <sup>3</sup> )	Minimum (ug/m <sup>3</sup> )	Average (ug/m <sup>3</sup> )
Total Dust	466.43 or 0.466 mg/m <sup>3</sup>	0.48 or 0.004 mg/m <sup>3</sup>	46.15 or 0.046 mg/m <sup>3</sup>
PM <sub>10</sub>	111.23 or 0.111 mg/m <sup>3</sup>	0.48 or 0.004 mg/m <sup>3</sup>	19.57 or 0.019 mg/m <sup>3</sup>
PM <sub>2.5</sub>	8.68	0.37	4.22

ND = Not Detected above Minimum Detection Limit of Instrument

n/a = Not Applicable

Comfort Parameter	Acceptable Value
Total Dust (PNOC)	ACGIH TLV: 10 mg/m <sup>3</sup> ; OSHA TWA: 15 mg/m <sup>3</sup>
Respirable Dust/PM <sub>10</sub>	ACGIH TLV: 3 mg/m <sup>3</sup> ; OSHA TWA: 5 mg/m <sup>3</sup> USEPA: 150 ug/m <sup>3</sup> (annualized mean)
PM <sub>2.5</sub>	USEPA: 35 ug/m <sup>3</sup> (24 Hour Period)

In summary, observed total particulate average concentrations did not exceed applicable United States Environmental Protection Agency (US EPA) limits for PM<sub>10</sub> or PM<sub>2.5</sub> and Occupational Safety & Health Administration (OSHA) eight hour Time Weighted Average (TWA) limits. Therefore, Standards/Guidelines were not exceeded on this day.

## **Analytical Results/Mold Spores**

At the request of the Mahopac School District Berger collected total mold spore samples did not reveal the presence of particular genera in concentrations that could indicate a concern as compared to outside air or other School classrooms. A copy of laboratory results and Chain of Custody are present at the end of this report in Attachment A.

## **Recommendations**

Although the physical inspection and real time air sampling did not reveal any conditions of concern, and in order to promote good IAQ, Berger would like to offer the following recommendations:

- In an effort to promote good IAQ, Berger recommends the removal of the water damaged wooden floor (approximately 10 square feet) adjacent to the exit door in the main gym area using practices and procedures identified within the United States environmental Protection Agency Document “Mold remediation in schools and Commercial Buildings).
- Based on the visibly noticeable amounts of dust on the floor and elevated surfaces, Berger recommends a through cleaning of the gymnasium area to remove standing dust.
- Based in the visual inspection of the ceiling plenum, Berger recommends the removal of two (2) ceilings tile due to presence of water damage. Use of dust control procedures (e.g., misting of tile, placing immediately in a sealed plastic bag and disposing as contractor waste) is highly recommended. In addition, Berger recommends performing a records search to determine if affected materials in the work areas are asbestos containing. If so, these areas should be addressed as per applicable City, State and Federal guidelines. In addition, Berger recommends the removal of construction debris from ceiling tiles to prevent drop hazards.
- Ensure that the source of the leak responsible for the noted damaged to the ceiling tile are properly repaired.
- Remove rodent droppings from room ceiling plenum of both coach’s offices as necessary as per guidance from the centers from Disease Control (CDC) located at [http://www.cdc.gov/ncidod/diseases/hanta/hps\\_stc/stc\\_clean.htm](http://www.cdc.gov/ncidod/diseases/hanta/hps_stc/stc_clean.htm).
- Consider removal and storage of the excessive amount of materials identified in the storage area. Numerous surfaces allow for the build-up of dust which has the potential of becoming entrained in the air once disturbed.
- Based on the presence of food storage within the offices, Berger recommends the removal, and/or proper containerizing foodstuffs within the classroom. Please also ensure that an Integrated Pest Management program has been implemented at the School designed to limit access, foodstuffs or any other condition which may promote pest habitation on the property.
- Remove chemicals from the classroom if not approved for use. For approved chemicals, and as required by federal regulations; Berger recommends that an accessible copy of each Material Safety Data Sheet (MSDS) for each chemical be kept on site.
- Berger recommends the proper disposal of all chemicals not in compliance with Mahopac Central School District Policy.

If you have any questions concerning this information, please feel free to contact me at (212)-612-7991.

Sincerely,  
LOUIS BERGER & ASSOCIATES, P.C.



Chawinie Miller  
Industrial Hygienist

C: J. Cupriks, R. Almonacy

Attachment

## **Attachment A**

031102220

# Environmental Microbiology Chain of Custody

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

Westmont, NJ  
3 Cooper Street  
Westmont, NJ 08108  
PHONE: 1-800-220-3675  
FAX: (856) 858-4960

EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

Company: the louis berger group		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party	
Street: 199 water st 23rd floor			
City/State/Zip: ny, NY 10038			
Report To (Name): chawinie miller		Fax:	
Telephone: 212 612 7991		Email Address: jcupriks@louisberger.com	
Project Name/Number: KT 710 62			

Please Provide Results: Email		Purchase Order:		State Samples Taken: NY	
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 checked="" type="checkbox"/> 72 Hour	<input type="checkbox"/> 96 Hour
<input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week					

\*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)

- |  |  |  |   |   |
|--|--|--|---|---|
| <ul style="list-style-type: none"> <li>M001 Air-O-Cell</li> <li>M049 BioSIS</li> <li>M030 Micro 5</li> </ul> | <ul style="list-style-type: none"> <li>M173 Allegro M2</li> <li>M003 Burkard</li> <li>M174 MoldSnap</li> </ul> | <ul style="list-style-type: none"> <li>M004 Allergenco</li> <li>M043 Cyclcx</li> <li>M176 Relle Smart</li> </ul> | <ul style="list-style-type: none"> <li>M032 Allergenco-D</li> <li>M002 Cyclcx-d</li> <li>M130 Via-Cell</li> </ul> | <ul style="list-style-type: none"> <li>M172 Versa Trap</li> </ul> |
|--|--|--|---|---|

## Other Microbiology Test Codes

- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>M041 Fungal Direct Examination</li> <li>M005 Viable Fungi ID and Count</li> <li>M006 Viable Fungi ID and Count (Speciation)</li> <li>M007 Culturable Fungi</li> <li>M008 Culturable Fungi (Speciation)</li> <li>M009 Gram Stain Culturable Bacteria</li> <li>M010 Bacterial Count and ID - 3 Most Prominent</li> <li>M011 Bacterial Count and ID - 5 Most Prominent</li> <li>M013 Sewage Contamination in Buildings</li> </ul> | <ul style="list-style-type: none"> <li>M014 Endotoxin Analysis</li> <li>M015 Heterotrophic Plate Count</li> <li>M180 Real Time Q-PCR-ERMI 36 Panel</li> <li>M018 Total Coliform (Membrane Filtration)</li> <li>M020 Fecal Streptococcus (Membrane Filtration)</li> <li>M210-215 Legionella Detection</li> <li>M026 Recreational Water Screen</li> <li>M027 Mycotoxin Analysis</li> </ul> | <ul style="list-style-type: none"> <li>M029 Enterococci</li> <li>M019 Fecal Coliform</li> <li>M133 MRSA Analysis</li> <li>M028 Cryptococcus neoformans Detection</li> <li>M120 Histoplasma capsulatum Detection</li> <li>M033-39 Allergen Testing</li> <li>M044 Group Allergen (Cat, Dog, Cockroach, Dustmites)</li> <li>Other See Analytical Price Guide</li> </ul> |
|---|--|--|

## Preservation Method (Water):

Name of Sampler:		Signature of Sampler:			
Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
247-1	4.5 rm 247	Air	M001	150	1/11 2:30
247-2	"				2:45
out-1	outside 1h>				3:00
out-2	"				3:15
208-1	Austin Rd rm 208				1/13 3:45
208-2	"				4:00
out-3	outside Austin Rd				4:15
out-4	"				4:30
Gym	Austin Rd gym				1/11/17 4:00
Coach office	"				4:15

Client Sample # (s):		Total # of Samples:	
Relinquished (Client):	Date: 1/27	Time:	
Received (Client):	Date: 1/28	Time:	2011 JAN 28 15:37

Comments/Special Instructions: please call 646 660 1263 with any questions; please also e-mail cmiller@louisberger.com as well with results  
Bill To: Josh Cupriks, 199 water st 23rd floor, ny, NY 10038  
Attention: Josh Cupriks Phone: 212 612 7991 Email: jcupriks@louisberger.com



031102220



**ENSL ANALYTICAL, INC.**  
 10000 Highway 40, Suite 200, Houston, TX 77060  
 713/661-1100 • FAX 713/661-1101 • WWW.ENSANAL.COM

## Environmental Microbiology Chain of Custody

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

Westmont, NJ  
3 Cooper Street  
Westmont, NJ 08108  
PHONE: 1-800-220-3675  
FAX: (856) 858-4960

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
out 5	outside custard	air	1001	150	11/27 4:30
out 6	"				↓ 4:45
217 - 1	rm 217				11/28 4:00
217 - 2	"				4:15
out 7	outside custard				4:30
out 8	"				↓ 4:45
22 - 1	rm 22				11/24 4:00
22 - 2	"				4:15
					4:30
out 9	outside custard				↓ 4:45
out 10	"				11/26 4:00
main - 1	main office custard				4:15
main - 2	"				4:30
out 11	out side custard				↓ 4:45
out 12	"				—
FB1	—				—
FB2	—				

**Comments/Special Instructions:** please call 646 660 1263 with any questions; please also e-mail [cmiller@louisberger.com](mailto:cmiller@louisberger.com) as well with results

2011 JAN 28 15:37

Controlled Document – Environmental Microbiology COC – EM1.0 – 11/23/2009

Page \_\_\_\_ of \_\_\_\_ Pages

Ensl. rasone  
1/28.



# EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018

Phone: (212) 290-0051

Fax: (212) 290-0058

Web: <http://www.emsl.com>Email: [manhattanlab@emsl.com](mailto:manhattanlab@emsl.com)**Attn:**

The Louis Berger Group, Inc.  
199 Water Street  
23rd Floor  
New York, NY 10038

EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number:	031102220-0001			031102220-0002			031102220-0003		
Client Sample ID:	247-1			247-2			OWA-1		
Volume (L):	150			150			150		
Sample Location:	H.S RM 247			H.S RM 247			OUTSIE H.S		
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	1	21	33.3
Basidiospores	-	-	-	2	42	50	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	2	42	66.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	2	42	50	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
<b>Total Fungi</b>	-	-	-	<b>4</b>	<b>84</b>	<b>100</b>	<b>3</b>	<b>63</b>	<b>100</b>
Hyphal Fragment	1	21	-	-	-	-	1*	7*	-
Insect Fragment	-	-	-	-	-	-	1*	7*	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

Samples analyzed by EMSL Analytical, Inc. 307 West 38th Street, New York NY AIHA-LAP, LLC--EMLAP Lab 102581

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. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

John McCauley, Laboratory Manager  
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at [www.emsl.com](http://www.emsl.com)



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EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number:	031102220-0004			031102220-0005			031102220-0006		
Client Sample ID:	OWA-2			208-1			208-2		
Volume (L):	150			150			150		
Sample Location:	OUTSIE H.S			AUSTIN RD RM 208			AUSTIN RD RM 208		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	42	66.7	2	42	66.7	1	21	50
Basidiospores	-	-	-	-	-	-	1	21	50
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	21	33.3	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	1	21	33.3	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	3	63	100	3	63	100	2	42	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

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John McCauley, Laboratory Manager  
or Other Approved Signatory

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Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	031102220-0007 OWA-3 150 OUTSIDE AUSTIN RD			031102220-0008 OWA-4 150 OUTSIDE AUSTIN RD			031102220-0009 GYM 150 GUSTINED RD GYM		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	None Detected	-	-	-	-	-	None Detected	-
Hyphal Fragment	-	-	-	1	21	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

Samples analyzed by EMSL Analytical, Inc. 307 West 38th Street, New York NY AIHA-LAP, LLC--EMLAP Lab 102581

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John McCauley, Laboratory Manager  
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307 West 38th Street New York, NY 10018

Phone: (212) 290-0051

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Web: <http://www.emsl.com>Email: [manhattanlab@emsl.com](mailto:manhattanlab@emsl.com)**Attn:**

The Louis Berger Group, Inc.  
199 Water Street  
23rd Floor  
New York, NY 10038

EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	031102220-0010 COUCH OFFICE 150 GUSTINED RD GYM			031102220-0011 OWA-5 150 OUTSIDE AUSTIN RD			031102220-0012 OWA-6 150 OUTSIDE AUSTIN RD		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	None Detected	-	-	None Detected	-	-	None Detected	-
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

Samples analyzed by EMSL Analytical, Inc. 307 West 38th Street, New York NY AIHA-LAP, LLC--EMLAP Lab 102581

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199 Water Street  
23rd Floor  
New York, NY 10038

EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number:	031102220-0013			031102220-0014			031102220-0015		
Client Sample ID:	217-1			217-2			OWA-7		
Volume (L):	150			150			150		
Sample Location:	RM 217			RM 217			OUTSIDE AUSTIN RD		
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	1	21	50
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	1	21	33.3	-	-	-
Cladosporium	1	21	100	2	42	66.7	1	21	50
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
<b>Total Fungi</b>	<b>1</b>	<b>21</b>	<b>100</b>	<b>3</b>	<b>63</b>	<b>100</b>	<b>2</b>	<b>42</b>	<b>100</b>
Hyphal Fragment	-	-	-	1	21	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	1	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

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199 Water Street  
23rd Floor  
New York, NY 10038

EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number:	031102220-0016			031102220-0017			031102220-0018		
Client Sample ID:	OWA-8			22-1			22-2		
Volume (L):	150			150			150		
Sample Location:	OUTSIDE AUSTIN RD			RM 22			RM 22		
Spore Types	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total	Raw Count	Count/m³	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	1	21	100
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	None Detected	-	-	-	-	1	21	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	21	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

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EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	031102220-0019 OWA-9 150 OUTSIDE AUSTIN RD			031102220-0020 OWA-10 150 OUTSIDE AUSTIN RD			031102220-0021 MAIN-1 150 MAIN OFFICE AUSTIN RD		
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	1	21	100	3	63	75
Basidiospores	-	-	-	-	-	-	1	21	25
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	21	100	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
<b>Total Fungi</b>	<b>1</b>	<b>21</b>	<b>100</b>	<b>1</b>	<b>21</b>	<b>100</b>	<b>4</b>	<b>84</b>	<b>100</b>
Hyphal Fragment	-	-	-	1	21	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

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EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	031102220-0022 MAIN-2 150 MAIN OFFICE AUSTIN RD			031102220-0023 OWA-11 150 OUTSIDE AUSTIN RD			031102220-0024 OWA-12 150 OUTSIDE AUSTIN RD		
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	42	100	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	21	100	1	21	100
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
<b>Total Fungi</b>	<b>2</b>	<b>42</b>	<b>100</b>	<b>1</b>	<b>21</b>	<b>100</b>	<b>1</b>	<b>21</b>	<b>100</b>
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	1	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

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Phone: (212) 290-0051

Fax: (212) 290-0058

Web: <http://www.emsl.com>Email: [manhattanlab@emsl.com](mailto:manhattanlab@emsl.com)**Attn:**

The Louis Berger Group, Inc.  
199 Water Street  
23rd Floor  
New York, NY 10038

EMSL Order: 031102220

Customer ID: LOUI56

Collected: 1/11/2011

Received: 1/28/2011

Analyzed: 1/29/2011

**Proj:** KT710G2
**Test Report: Air-O - Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (EMSL Method 05-TP-003)**

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	031102220-0025 FB1 0 FIELD BLANK			031102220-0026 FB2 0 FIELD BLANK					
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total			
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
<b>Total Fungi</b>	-	<b>No Trace</b>	-	-	<b>No Trace</b>	-	-	-	-
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	0	-	-	0	-	-	-	-
Analyt. Sensitivity 300x	-	0*	-	-	0*	-	-	-	-
Skin Fragments (1-4)	-	-	-	-	-	-	-	-	-
Fibrous Particulate (1-4)	-	-	-	-	-	-	-	-	-
Background (1-5)	-	-	-	-	-	-	-	-	-

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum

Myxomycetes++ = Myxomycetes/Periconia/Smut

Samples analyzed by EMSL Analytical, Inc. 307 West 38th Street, New York NY AIHA-LAP, LLC--EMLAP Lab 102581

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. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

John McCauley, Laboratory Manager  
or Other Approved Signatory

For Information on the fungi listed in this report please visit the Resources section at [www.emsl.com](http://www.emsl.com)