

## MOLD TESTING REPORT

CLIENT: Fairfield Public Schools

SITE: Osborn Hill School  
Fairfield, CT

INSPECTOR: Ted Tio, MS, CIEC

TEST DATE: August 15, 2013

SITE DESCRIPTION: Elementary School

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### BACKGROUND

Hygenix Inc. was contracted by Fairfield Public Schools and asked to perform airborne mold testing at the above mentioned site. The testing was conducted by Ted Tio on August 15, 2013. At client's request, the testing was conducted in Classrooms 5 and 6.

### MOLD TESTS

Sampling was conducted to measure airborne mold in each of the classrooms. The air samples were collected using Air-O-Cell™ spore traps in accordance with the manufacturer's recommended sampling protocol. In addition to the indoor air samples, one outdoor reference air sample was collected. The air sample was sent overnight to Pure Earth Environmental Laboratory, where they were analyzed for mold by direct optical microscopy.

Test results are summarized in Table 1 below, and presented in detail in the attached laboratory reports.

**TABLE 1 - AIRBORNE MOLD SPORE COUNTS**

SAMPLE LOCATION	TOTAL COUNT	MOLD TYPES COUNTED	
Outdoors	1093 CTS/M <sup>3</sup>	907 CTS/M <sup>3</sup> 107 CTS/M <sup>3</sup>	<i>Cladosporium</i> <i>Basidiospores</i>
Classroom 5	293 CTS/M <sup>3</sup>	133 CTS/M <sup>3</sup> 107 CTS/M <sup>3</sup>	<i>Cladosporium</i> <i>Aspergillus/Penicillium like spores</i>
Classroom 6	133 CTS/M <sup>3</sup>	53 CTS/M <sup>3</sup> 27 CTS/M <sup>3</sup>	<i>Aspergillus/Penicillium like spores</i> <i>Cladosporium</i>

*There are no government standards that set an "acceptable" or "safe" level of airborne mold in buildings. Most often, the results are interpreted by comparing the indoor and outdoor counts for total mold and for the individual species of mold. Substantially higher counts indoors (total or individual species) are viewed as an indication of a mold amplification (growth) inside the building.*

**Mold Testing Report  
Osbron Hill School**

**Test Date:  
August 15, 2013**

Airborne mold counts are affected by a wide variety of environmental factors, and the air test results should be considered together with visual observations, moisture levels, and the building history. Each air sample represents a ten-minute "snapshot" of the airborne mold levels that can vary by an order of magnitude at the same location over the course of a single day.

The following typical indoor mold spore concentration ranges were suggested as a "guide to evaluating the relative degree of indoor airborne mold spore amplification" by Daniel Baxter, the inventor of the Air-O-Cell mold spore trap, the most widely used bioaerosol sampling device:

**Table 2**

<b>Description</b>	<b>Spores(CTS/M3)</b>	<b>Predominant Types</b>
"Clean" building	less than 2,000	Total for all spores
	less than 700	<i>Penicillium, Aspergillus</i>
Possible Indoor Amplification	1,000-5,000	<i>Penicillium, Aspergillus, Cladosporium</i>
Indoor Amplification likely present	5,000-10,000	
Chronic Indoor Amplification	10,000-500,000	<i>Penicillium, Aspergillus, Cladosporium</i>
Inadequate flood cleanup or active indoor demolition of contaminated surfaces	50,000-10,000,000	<i>Penicillium, Aspergillus, Stachybotrys, Cladosporium, Chaetomium, Basidiomycetes, Trichoderma, Ulocladium, etc.</i>

**CONCLUSIONS / RECOMMENDATIONS**

The airborne mold counts recorded on August 15 are not elevated. The counts at both test locations were in the "clean building" range described in Table 2 of this report.

Further information about mold and guidance for remediation can be found in the US EPA publication, "Mold Remediation in Schools and Commercial Buildings", which can be downloaded from the website, [www.epa.gov](http://www.epa.gov).



Ted Tio, Inspector

August 22, 2013

Report Date

LABORATORY TEST RESULTS



T. J. Passon Jr., PhD., Laboratory Director

Pure Earth Environmental Lab, Inc. | 866.486.1177 | www.pureearthlab.com | info@pureearthlab.com

Hygenix, Inc.  
 49 Woodside Street  
 Stamford CT 06902  
 203-324-2222

Job Number 13081625  
 Date Collected 8/15/2013  
 Date Received 8/16/2013 11:42:09 AM  
 Date Analyzed 8/16/2013

Site: OSBORN HILL SCHOOL

**SPORE TRAP STANDARD**

Accession #	13081625-001		13081625-002		13081625-003	
Sample ID #	19310090		19310069		19310073	
Sample Location	ROOM 6		ROOM 5		OUTDOOR	
Air Volume (Liters)	150		150		150	
Results	Raw Ct	Cts/m <sup>3</sup>	Raw Ct	Cts/m <sup>3</sup>	Raw Ct	Cts/m <sup>3</sup>
Alternaria	-	-	-	-	-	-
Ascospores	1	27	2	53	3	80
Asp Pen like spores	2	53	4	107	-	-
Basidiospores	1	27	-	-	4	107
Chaetomium	-	-	-	-	-	-
Cladosporium	1	27	5	133	34	907
Curvularia/Pithomyces	-	-	-	-	-	-
Hyphae	-	-	-	-	-	-
Periconia/Smut/Myxo	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-
Unspecified	-	-	-	-	-	-
<b>Total count</b>	<b>5</b>	<b>133</b>	<b>11</b>	<b>293</b>	<b>41</b>	<b>1093</b>
Epithelial cells	125	3333	86	2293	-	-
Fibrous glass	2	53	1	27	-	-
Insect fragments	-	-	-	-	-	-
Other fibers	10	267	13	347	3	80
Pollens	1	27	-	-	-	-
Background	-	Mod	-	Mod	-	Mod
Minimum Detection Limit	1	27	1	27	1	27

Comments:

Sample received in acceptable condition unless otherwise stated.  
 Stated results apply to above sample only  
 Report Date/Time 8/21/2013 8:50:41 AM  
 End of Report



*Thomas J. Passon Jr., Ph.D.*  
 LABORATORY DIRECTOR



Pure Earth Environmental Lab, Inc.  
 7184 North Park Drive, Pennsauken, NJ 08109  
 (856) 486-1177 Fax (856) 486-0005  
 Toll Free: (866) 486-1177  
 Email: info@pureearthlab.com

8/16/2013

Hygenix, Inc.

13081625

SPA Normal

13081625-001 - 003 (3)

1stody  
est Form

Project #: \_\_\_\_\_

PO. #: \_\_\_\_\_

PLEASE

FORMATION CLEARLY. PRESS FIRMLY.

1. Client's Name / Address / Phone No. / Contact Person <b>HYGENIX.INC-T.TIO</b>				2. Sampling Site Address and/or Project <b>Osborn Hill School Fairfield, CT</b>				Indicate Analysis Requested						
3. Sampled By <b>T. Tio</b>			4. # of Samples in Shipment <b>3</b>		5. Date of Sample Shipment <b>8/15/13</b>					Air - O - Cell Sticky-tape				
Lab Use Only	Sample No.	Station Location / Sample ID	Matrix					Flow Rate	Min.			Sampling Date/Time		
			(W) Water	(S) Soil	(A) Air	(SL) Sludge	(O) Other							
↓	↓	↓	W	B	A	SL	O	↓	↓			↓		
1	19310040	Room 6.			✓			15	10			8/15/13	✓	13081625-001 SPA Hygenix, Inc
2	19310069	Room 5			✓			15	10			8/15/13	✓	13081625-002 SPA Hygenix, Inc
3	19310073	OUTDOOR			✓			15	10			<del>8/17/13</del> 8/15/13	✓	13081625-003 SPA Hygenix, Inc
4														
5														
6														
7														
8														
9														
10														
11														
12														
Released By <i>[Signature]</i>		Date / Time <b>8/15/13</b>		Delivery Method <b>UPS</b>		Received By <i>[Signature]</i>		Company <b>PAO</b>		Date / Time <b>8-16-13</b>		Condition <b>OK</b>		
Comments <b>3 COPY TAT</b>				Reporting Information <b>Email: +Tio@Hygenix.com</b>				Login: <b>8-16-13 CRC</b>						
								Analyzed: <b>8-16-13 mm</b>						

STATE OF CONNECTICUT  
DEPARTMENT OF PUBLIC HEALTH

Jewel Mullen, M.D., M.P.H., M.P.A.  
Commissioner



Dannel P. Malloy  
Governor  
Nancy Wyman  
Lt. Governor

August 15<sup>th</sup>, 2013

Sands Cleary  
Director of Health  
Fairfield Health Department  
725 Old Post Road  
Fairfield, Connecticut 06824

RE: **Workplace Hazard Assessment 13-004**  
Total Volatile Organic Compound Survey  
Osborn Hill Elementary School, Fairfield, CT

Dear Mr. Cleary,

Attached, please find the final report of the Connecticut Department of Public Health Occupational Health Unit's Workplace Hazard Assessment 13-004. In summary, no detectable levels of total volatile organic compounds were recorded in the ambient air.

If you have any questions regarding the enclosed report, please feel free to contact me at (860) 509-7149 or by email at [brian.testut@ct.gov](mailto:brian.testut@ct.gov).

Regards,

Brian Testut, MS, RS  
Occupational Health Investigator

cc: file



*If you require aid/accommodation to fully and fairly enjoy these publications, please contact 860-509-7293 and ask to be connected with the related Program.*

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**CT Department of Public Health  
Environmental and Occupational Health Assessment (EOHA) Program**

**Workplace Hazard Assessment 13-004**

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Report Date: August 15<sup>th</sup>, 2013

Background

On July 31<sup>st</sup>, 2013 Brian Testut from EOHA received a call from Sands Cleary, Director of Health for the Town of Fairfield requesting assistance pertaining to an odor complaint within two classrooms of the Osborn Hill Elementary School. The complaints originated toward the end of the school year and were described as an “earthy” odor by a few educators and other faculty, especially when staff sat close to the floor adjacent to students. An aggressive plan was implemented to identify the source of the odor and out of an abundance of caution both classrooms were relocated to another part of the school. The inspection of several locations and systems within the school resulted in the identification and correction of some potential sources within the roof drainage system and sub slab areas of the building. None of the corrective actions resulted in elimination of the odor. Furthermore, air conditioning units and dehumidifiers were installed in both classrooms to help control humidity levels. Mr. Cleary was inquiring if EOHA staff had knowledge of any other potential source of the odor that could be present which may have been missed. During this conversation the possibility of hiring an Industrial Hygiene consultant to perform mold and volatile organic compound (VOC) sampling was being considered. EOHA offered the use of their photoionization detector to detect total VOC levels within the classrooms as an aid to identify the source of the odor.

Site Visit

On August 13<sup>th</sup>, 2013 Brian Testut from the Occupational Health Unit performed an on-site hazard assessment at the Osborn Hill Elementary School located at 760 Stillson Road, Fairfield, CT.

**SUMMARY OF FINDINGS**

Indoor air quality was assessed to determine carbon dioxide, carbon monoxide, humidity and temperature levels utilizing a field calibrated Kanomax IAQ Monitor Model 2211, serial number 642699 and total volatile organic compound (TVOC) levels utilizing a field calibrated IonScience, Ltd Photoionization Detector (PID), PhoCheck+ 5000, 10.6eV bulb, serial number 10-01405 within classroom 5 and classroom 6 of the school. Additional PID readings were taken outside of the school for comparison. Both classrooms were not occupied at the time of the testing due to summer vacation and comprised of vinyl tile flooring, block walls, and drop ceiling tiles with very little furniture and no personal belongings. These air components were measured to determine the efficacy of the exhaust ventilation system and to identify if any elevations in TVOC levels were present within the classroom air. Sampling for TVOCs were performed in several locations including less than 6 inches off the floor, two feet off the floor and four feet off the floor in the general location where the odor had been previously detected within both classrooms. The PID was bump tested in the field to verify that the detector was functioning. The sampling results are listed below.

<b>Classroom #5</b>	<b>Measured Level</b>	<b>Acceptable Range</b>	<b>Actions</b>
Carbon Dioxide (parts per million)	382-390	<1,000	None
Carbon Monoxide (parts per million)	0	<35	None
Temperature* (Fahrenheit)	75°	70-74°	None
Relative Humidity* (percent)	73%-76%	<60%	None
TVOCs (parts per million)	0.00	N/A	None

<b>Classroom #6</b>	<b>Measured Level</b>	<b>Acceptable Range</b>	<b>Actions</b>
Carbon Dioxide (parts per million)	442-460	<1,000	None
Carbon Monoxide (parts per million)	0	<35	None
Temperature* (Fahrenheit)	74°	70-74°	None
Relative Humidity* (percent)	68%	<60%	None
TVOCs (parts per million)	0.00-0.00	N/A	None

<b>Janitors Closet</b>	<b>Measured Level</b>	<b>Acceptable Range</b>	<b>Actions</b>
TVOCs (parts per million)	0.00-0.00	N/A	None

<b>Exterior of School</b>	<b>Measured Level</b>	<b>Acceptable Range</b>	<b>Actions</b>
TVOCs (parts per million)	0.00-0.00	N/A	None

\*Uncontrolled at the time of testing (air conditioning and dehumidifiers units were off)  
N/A = Not applicable

TVOC concentrations measured within the classrooms did not indicate any level of concern. The PID has limitations and does not specify a particular chemical(s) within the air nor does it identify every chemical considered to be a VOC.

If you have any questions or would like more clarification about the report findings, please feel free to contact me at (860) 509-7149.

Regards,

Brian Testut  
Occupational Health Investigator





# RED THREAD

# FAX

(Formerly BKM Total Office)

340 Woodmont Road  
Milford, CT 06460  
Tel: 203-874-7754  
Fax: 203-876-7915

Date: 8/2

TOTAL PAGES: 2  
(includes this page)

TO: Mike

COMPANY: \_\_\_\_\_

FAX #: 203-255-8246

FROM: Richie

TELE #: \_\_\_\_\_ EXT #: \_\_\_\_\_

COMMENTS: Mike, The test was proven to be OK  
IF we were 90 or ABOVE I would be concern  
→ one point to keep in mind The test is only  
Good The Day we take it, I tell you about next  
month

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# ASTM F 2170 TEST RESULTS

Osborne School Fairfield, CT

Probe No.	1	2				Ambient Air
Location	Kindergarden 1	Kindergarden 2				
Depth	1 3/4	1 3/4				
Date/Time installed	7/30 9 AM	7/30 9 AM				
Date/Time %RH/°F	7/30 12 PM 83/71	7/30 12 PM 85/71				
Date/Time %RH/°F						
Date/Time %RH/°F						

Tested By Jeff Fataum

Company Name Res-Threads

RAPID RH™-Probe Location Map

7/31

Instructions: Indicate probe locations with symbol ⊕ and number of probe. Show doors, rooms, columns or other location indicators.

