

CTI Environmental Consultants
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1.0 INTRODUCTION

1.1. Scope of Investigation

On December 29, 2009, CTI Environmental Consultants conducted a limited microbial bioaerosol (airborne) survey that was conducted in classrooms 130, 132 and 134, including an ambient sample, at the Daniel Street School. The main objective of the limited survey was to identify conditions which may be affecting occupant health.

1.2. Survey Backgrounds

The *Bioaerosol Microbial Survey* is conducted to identify the types and numbers of microbial organisms (bacterial and fungal) that may be airborne in the areas tested. Fungal organisms are capable of producing allergic reactions in sensitive individuals. Fungal sources include, but are not limited to, dust or soil laden floors, carpets, air ventilation supply and return ducts which may be moisture-laden environments.

2.0 METHODS

2.1 Bioaerosol Microbial Survey

The Bioaerosol samples are taken with an emsE6 Single Stage Viable Microbial Air Sampler. The air sampler draws airborne microorganisms onto an agar plate, which is then incubated for 7 to 10 days. After incubation, the samples are analyzed to identify and quantify both bacterial and fungal organisms. Bioaerosol results are evaluated using the *American Conference of Governmental Industrial Hygienists (ACGIH)* guidelines and those of the American Academy of Allergy and Immunology (AAAI).

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3.0 EVALUATION GUIDELINES

3.1 Bioaerosol Microbial Survey

The American Conference of Governmental Industrial Hygienists (ACGIH) guidelines states that decisions on whether Bioaerosol bacterial and fungal organisms are elevated should be based upon the relative indoor and outdoor (ambient) concentrations levels. However, the American Academy of Allergy and Immunology has found that greater than 1,000 colony forming units per cubic meter of total fungal organisms may be the mean threshold for allergy symptoms. The results are illustrated in Table A.

TABLE A
Bioaerosol Microbial Survey Results
Airborne Fungal Identification and Quantification

Sample Number	Sample Location	Comparison to ACGIH Recommendations		
		Guidelines for Air Contamination levels		
		Total Fungal	Fungal Organisms	Contamination levels
1	classroom 130	67	Cladosporium Yeast	Acceptable Levels
2	Classroom 132	22	Cladosporium	Acceptable Levels
3	Classroom 134	89	Cladosporium Acremonium Penicillium	Acceptable Levels
4	Ambient	244	Cladosporium Penicillium Aspergillus Alternaria	Ambient

4.0 CONCLUSIONS

The results of the bioaerosol microbial survey indicates that the fungal levels were within acceptable guideline levels in all of the classrooms tested and less than the ambient levels.



SanAir Technologies Laboratory, Inc.

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SanAir ID Number

09013030

FINAL REPORT

Name: CTI Environmental Consultants
Address: 10D Beech Street
Islip, NY 11751

Project Number:
P.O. Number:
Project Name: Daniel St. School

Collected Date: 12/29/2009
Received Date: 12/30/2009 10:20:00 AM
Report Date: 1/6/2010 9:28:21 AM
Analyst: Zhang, Ph.D, Richard

Culture Analysis

SanAir ID: 09013030-001 Sample #: 1 ID: Classroom 130

C1-AP-Culture Analysis on Air Plate using STL 101

Culture for Mold Only - AP

Volume: 45 Liters
Limit of Detection: 22 CFUs/M³

Fungi	Raw Count	CFUs/M ³	% of Total
Cladosporium species	2	44	67
Yeast species	1	22	33
Total	3	67	

SanAir ID: 09013030-002 Sample #: 2 ID: Classroom 132

C1-AP-Culture Analysis on Air Plate using STL 101

Culture for Mold Only - AP

Volume: 45 Liters
Limit of Detection: 22 CFUs/M³

Fungi	Raw Count	CFUs/M ³	% of Total
Cladosporium species	1	22	100

SanAir ID: 09013030-003 Sample #: 3 ID: Classroom 134

C1-AP-Culture Analysis on Air Plate using STL 101

Culture for Mold Only - AP

Volume: 45 Liters
Limit of Detection: 22 CFUs/M³

Fungi	Raw Count	CFUs/M ³	% of Total
Acremonium species	1	22	25
Cladosporium species	1	22	25
Penicillium species	2	44	50
Total	4	89	

Certification

Signature:
Date: 1/6/2010

Reviewed:
Date: 1/6/2010



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Culture Analysis





SanAir ID: 09013030-004 Sample #: 4

ID: Ambient Taken From Classroom 132


C1-AP-Culture Analysis on Air Plate using STL 101


Culture for Mold Only - AP

Volume: 45 Liters
Limit of Detection: 22 CFUs/M³

Fungi	Raw Count	CFUs/M ³	% of Total
Alternaria species	1	22	9 
Aspergillus species	3	67	27 
Cladosporium species	4	89	36 
Penicillium species	3	67	27 
Total	11	244	

Certification

Signature: 
Date: 1/6/2010

Reviewed: 
Date: 1/6/2010