



HYGIENETECH

Hygiene Technologies International, Inc.

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April 4, 2012

California State Board of Equalization
450 N Street
Sacramento, California 94279

Document No. 21203001.3

Attention: David Gau

Regarding: Fungal Growth Remediation Monitoring and Clearance Surveys
9th Floor Storage Room 9D

Dear Mr. Gau:

On March 30 and 31 2012, industrial hygienists with Hygiene Technologies International, Inc. (HygieneTech) monitored fungal growth remediation activities and conducted a fungal growth remediation clearance survey in Storage Room 9D of the State of California Board of Equalization (BOE) building located at 450 N Street in Sacramento, California. Fungal growth remediation was performed by JLS Environmental Services, Inc. (JLS) under the direction of LaCroix Davis, LLC (LCD), an industrial hygiene consulting firm contracted with the State of California Department of General Services (DGS). The fungal growth remediation protocols for the project were established by LCD and can be found in their document *State Board of Equalization Generic Floor Remediation Protocol, Rev 1* dated August 3, 2009.

On March 31 2012, a clearance survey was performed in which air and surface samples were collected within the 9th Floor Storage Room 9D remediation enclosure and one additional air sample was collected at an outdoor location on that survey date for comparison purposes. Air samples were collected using a Zefon brand Bio-Pump™ equipped with Zefon Air-O-Cell™ cassettes. Surface samples were collected using cellophane tape segments that were affixed to microscope slides. All such samples were subsequently analyzed for fungi (including yeasts, molds, rusts, smuts, and mushrooms) by trained and experienced microbiologists at a laboratory accredited by the American Industrial Hygiene Association (AIHA) and that successfully participates in the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) Program. The clearance survey analytical data with supporting and background information appear in the enclosed Tables 21203001-6 and 21203001-7.

During the fungal growth remediation in Storage Room 9D, HygieneTech observed and documented the removal of fungal growth-contaminated building materials within the ceiling plenum and decontamination of the remaining materials including but not limited to the exposed interior wall cavity framing, proximate drywall not affected by fungal growth, and flooring. All such work was performed within a controlled negative pressure containment that was monitored with the use of manometer. Those control measures were utilized so that dispersion of airborne spores was limited to the enclosed area. The surface assessment data with supporting and background information regarding the Storage Room 9D fungal growth remediation activities appear in the enclosed Table 21203001-5. As shown in that table, the surface assessment data collected during the remediation activities indicated fungal growth involving *Cladosporium* and *Ulocladium* on various surfaces within the above mentioned remediation enclosure.



Following the completion of the fungal growth remediation activities, an attempt was made to clear the enclosed work area. Prior to the clearance survey, a visual inspection was performed within Storage Room 9D. By observation, all gross quantities of fungal growth had been removed from the fungal growth remediation area. However, note that some of the fungal growth affected gypsum board materials found in Storage Room 9D were not removed during the remediation activities based on DGS's consultation with the Fire Marshall regarding removal of fire rated walls and/or due to walls being considered inaccessible by DGS and/or their consultants. Such walls were instead abraded as needed to remove surface fungal growth, wet wiped with a biocide solution, vacuumed with equipment having high efficiency particulate air (HEPA) filtration, and then encapsulated with Foster[®] Full Defense[™] (40-25) fungicidal protective coating. An area showing minor water staining, but no evidence of fungal growth, was also painted with the Foster[®] Full Defense[™] product.

As presented in Table 21203001-6, the airborne total fungi datum recorded on the March 31, 2012, clearance survey date within the Storage Room 9D remediation enclosure indicated only a low level of smuts. The low level of smuts detected within the enclosure was consistent with the level of smuts detected in the outdoor sample, and the overall total fungi datum recorded within the containment was well below the overall datum recorded outdoors. Similarly, as shown in Table 21203001-7, the surface sample data recorded within the containment showed no evidence of fungal growth or above-background levels of fungal spores on the building material surfaces tested. These data do not represent conditions that are expected to pose a health hazard to occupants above that posed by the outside environment where exposures to airborne and surface-borne fungi are known to exist. Collectively, the results of the clearance survey satisfy the clearance criteria for fungal growth established for this project and notification to that effect was provided to representatives of BOE, JLS, LCD, and DGS.

Be advised that the data provided with this correspondence only represent fungal growth and/or exposure potentials that existed at the time of the surveys and at the precise locations only, the latter of which were selected based on the available background information and visual observation recorded during the surveys. Note that fungal growth and exposure potentials may change due to changes in environmental conditions, such as those caused by water intrusion, use of mechanical systems, or other factors. Also be advised that while no evidence of additional fungal growth was seen at the time of the clearance survey, additional fungal growth may exist at one or more locations in the structure that were not specifically assessed during the surveys. And finally, the exposure data recorded during the clearance survey may not be sufficiently broad to adequately assess the suitability of the indoor air quality for all individuals, particularly those who are extremely sensitive to certain chemical and/or biological substances or for those individuals with immune system deficiencies. Although not expected, if persons entering the 9th floor Storage Room 9D do experience non-specific ill effects, such as eye irritation, allergy symptoms, headache, or skin rash, then those affected should be referred to a medical professional in order to determine or specify the possible cause(s) of such reactions. If additional information becomes available, then further assessment may be warranted.

If you have any comments or questions regarding the information contained in this correspondence, please feel free to contact our offices directly at (310) 370-8370.

Sincerely,

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

Kenny K. Hsi, CIH
Technical Director

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



CLIENT: California State Board of Equalization
450 N Street
Sacramento, California 94279

TABLE 21203001-5
SURFACE FUNGAL GROWTH POTENTIALS
ABATEMENT MONITORING
9TH FLOOR - STORAGE ROOM 9D
SACRAMENTO, CALIFORNIA
MARCH 30, 2012

SAMPLE NUMBER	SAMPLING LOCATION	BACKGROUND DEBRIS	MISCELLANEOUS SPORES PRESENT*	FUNGI SEEN WITH UNDERLYING MYCELIAL AND/OR SPORULATING STRUCTURES**	OTHER COMMENTS	GENERAL IMPRESSION
21203001-5 TL01	Storage Room 9D; within containment; within ceiling plenum; southeastern corner; western partition wall; approximately two feet above ceiling; from vertical surface of gypsum board	Moderate	Very few	4+ <i>Cladosporium</i> species (spores, hyphae, conidiophores) 4+ <i>Ulocladium</i> species (spores, hyphae, conidiophores)	None	Fungal growth
21203001-5 TL02	Storage Room 9D; within containment; within ceiling plenum; southeastern corner western partition wall; cavity; about two feet above ceiling; from vertical surface of second layer gypsum board	Moderate	Very few	4+ <i>Cladosporium</i> species (spores, hyphae, conidiophores) 3+ <i>Ulocladium</i> species (spores, hyphae, conidiophores)	None	Fungal growth

*Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating (indicative of normal trapping).

**Quantities of fungi are graded (from least to greatest) as <1+ to 4+.

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



CLIENT: California State Board of Equalization
450 N Street
Sacramento, California 94279

TABLE 21203001-6
AIRBORNE TOTAL FUNGI RESULTS
CLEARANCE
9TH FLOOR - STORAGE ROOM 9D
450 N STREET
SACRAMENTO, CALIFORNIA
MARCH 31, 2012

Results reported in spores per cubic meter of air (spores/M³)

SAMPLE NUMBER	21203001-6 TM01OUT	21203001-6 TM02		
SAMPLING LOCATION/ACTIVITIES	Outdoors; about 10 feet south of building; approximately five feet above ground/Normal outdoor activities	Storage Room 9D; within containment; about center; approximately five feet above floor/Post abatement; sampling activities only	This column intentionally left blank	This column intentionally left blank
START/STOP	12:09:00/12:14:00	12:28:00/12:33:00		
SAMPLE TIME	5 minutes	5 minutes		
Alternaria	150			
Ascospores	2,600			
Basidiospores	480			
Botrytis				
Chaetomium				
Cladosporium	910			
Curvularia				
Epicoccum				
Fusarium				
Myrothecium				
Nigrospora				
Oidium				
Other colorless				
Penicillium/Aspergillus types	160			
Pithomyces				
Rusts				
Smuts (Periconia, Myxomycetes)	13	13		
Stachybotrys				
Torula				
Ulocladium				
Zygomycetes				
Hyphal fragments	<13	<13		
Background debris*	1+	2+		
TOTAL**	4,300	13		

*Background debris is an indication of the amount of non-biological particulate matter present on the slide and is graded (from least to greatest) as 1+ to 4+.

**Note that all reported counts have been rounded to no more than two significant figures based on the sampling and analytical methods used, and therefore the total count may not equal the sum of the individual counts in a column.

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



CLIENT: California State Board of Equalization
450 N Street
Sacramento, California 94279

TABLE 21203001-7
SURFACE FUNGAL GROWTH POTENTIALS
CLEARANCE
9TH FLOOR - STORAGE ROOM 9D
SACRAMENTO, CALIFORNIA
MARCH 31, 2012

SAMPLE NUMBER	SAMPLING LOCATION	BACKGROUND DEBRIS	MISCELLANEOUS SPORES PRESENT*	FUNGI SEEN WITH UNDERLYING MYCELIAL AND/OR SPORULATING STRUCTURES**	OTHER COMMENTS	GENERAL IMPRESSION
21203001-7 TL01	Storage Room 9D; within containment; ceiling plenum; about two feet west of eastern partition wall and about one foot north of southern partition wall; from vertical surface of metal stud	Light	Very few	None	None	Background
21203001-7 TL02	Storage Room 9D; within containment; flooring; about center; from horizontal surface of tile	Light	Very few	None	None	Background

*Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating (indicative of normal trapping).

**Quantities of fungi are graded (from least to greatest) as <1+ to 4+.



Report for:

Mr. Larry Sandhu, Mr. Ken Tse
Hygiene Technologies International, Inc.: Northern California
3625 Del Amo Boulevard, Suite 180
Torrance, CA 90503-8370

Regarding: Project: 21203001-5
 EML ID: 906390

Approved by:

Lab Manager
Malcolm Moody

Dates of Analysis:

Direct microscopic exam (Qualitative): 04-03-2012

Service SOPs: Direct microscopic exam (Qualitative) (1039)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Larry Sandhu, Mr. Ken Tse
 Re: 21203001-5

Date of Sampling: 03-30-2012
 Date of Receipt: 04-02-2012
 Date of Report: 04-03-2012

DIRECT MICROSCOPIC EXAMINATION REPORT

Background Debris and/or Description	Miscellaneous Spores Present*	MOLD GROWTH: Molds seen with underlying mycelial and/or sporulating structures†	Other Comments††	General Impression
Lab ID-Version‡: 4030558-1, Analysis Date: 04/03/2012: Tape sample 21201001-5 TL01				
Moderate	Very few	4+ <i>Cladosporium</i> species (spores, hyphae, conidiophores) 4+ <i>Ulocladium</i> species (spores, hyphae, conidiophores)	None	Mold growth
Lab ID-Version: 4030559-1, Analysis Date: 04/03/2012: Tape sample 21201001-5 TL02				
Moderate	Very few	4+ <i>Cladosporium</i> species (spores, hyphae, conidiophores) 3+ <i>Ulocladium</i> species (spores, hyphae, conidiophores)	None	Mold growth

* Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

† Quantities of molds seen growing are listed in the MOLD GROWTH column and are graded 1+ to 4+, with 4+ denoting the highest numbers.

†† Some comments may refer to the following: Most surfaces collect a mix of spores which are normally present in the outdoor environment. At times it is possible to note a skewing of the distribution of spore types, and also to note "marker" genera which may indicate indoor mold growth. Marker genera are those spore types which are present normally in very small numbers, but which multiply indoors when conditions are favorable for growth.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



Report for:

Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
Hygiene Technologies International, Inc.: Northern California
3625 Del Amo Boulevard, Suite 180
Torrance, CA 90503-8370

Regarding: Project: 21203001-6&7
EML ID: 906177

Approved by:

Lab Manager
Malcolm Moody

REVISED REPORT

Dates of Analysis:
Spore trap analysis: 04-02-2012

Service SOPs: Spore trap analysis (1038)
AIHA accredited service

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken
Tse
Re: 21203001-6&7

Date of Sampling: 03-30-2012
Date of Receipt: 03-31-2012
Date of Report: 03-31-2012

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	21203001-6 TM01OUT		21203001-6 TM02	
Comments (see below)	None		None	
Lab ID-Version‡:	4029673-2		4029674-2	
Analysis Date:	04/02/2012		04/02/2012	
	raw ct.	spores/m3	raw ct.	spores/m3
Alternaria	11	150		
Ascospores*	48	2,600		
Basidiospores*	9	480		
Chaetomium				
Cladosporium	17	910		
Fusarium				
Myrothecium				
Nigrospora				
Other colorless				
Penicillium/Aspergillus types†	3	160		
Pithomyces				
Rusts*				
Smuts*, Periconia, Myxomycetes*	1	13	1	13
Stachybotrys				
Stemphylium				
Torula				
Ulocladium				
Zygomycetes				
Background debris (1-4+)††	1+		2+	
Hyphal fragments/m3	< 13		< 13	
Pollen/m3	< 13		13	
Skin cells (1-4+)	< 1+		1+	
Sample volume (liters)	75		75	
§ TOTAL SPORES/m3		4,300		13

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample.

* Most of these spore types are not seen with culturable methods (Andersen sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores while the rusts and smuts are plant pathogens.

† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.

†† Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for sample volumes when evaluating dust levels.

The analytical sensitivity is the spores/m3 divided by the raw count. The limit of detection is the analytical sensitivity multiplied by the sample volume divided by 1000.

For more information regarding analytical sensitivity, please contact QA by calling the laboratory.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.



Report for:

Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
Hygiene Technologies International, Inc.: Northern California
3625 Del Amo Boulevard, Suite 180
Torrance, CA 90503-8370

Regarding: Project: 21203001-6&7
EML ID: 906177

Approved by:

Lab Manager
Malcolm Moody

Dates of Analysis:

Direct microscopic exam (Qualitative): 03-31-2012

Service SOPs: Direct microscopic exam (Qualitative) (1039)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

Client: Hygiene Technologies International, Inc.: Date of Sampling: 03-30-2012
 Northern California Date of Receipt: 03-31-2012
 C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse Date of Report: 03-31-2012
 Re: 21203001-6&7

DIRECT MICROSCOPIC EXAMINATION REPORT

Background Debris and/or Description	Miscellaneous Spores Present*	MOLD GROWTH: Molds seen with underlying mycelial and/or sporulating structures†	Other Comments††	General Impression
Lab ID-Version‡: 4029671-1, Analysis Date: 03/31/2012: Tape sample 21203001-7 TL01				
Light	Very few	None	None	Normal trapping
Lab ID-Version: 4029672-1, Analysis Date: 03/31/2012: Tape sample 21203001-7 TL02				
Light	Very few	None	None	Normal trapping

* Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

† Quantities of molds seen growing are listed in the MOLD GROWTH column and are graded 1+ to 4+, with 4+ denoting the highest numbers.

†† Some comments may refer to the following: Most surfaces collect a mix of spores which are normally present in the outdoor environment. At times it is possible to note a skewing of the distribution of spore types, and also to note "marker" genera which may indicate indoor mold growth. Marker genera are those spore types which are present normally in very small numbers, but which multiply indoors when conditions are favorable for growth.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken
Tse
Re: 21203001-6&7

Date of Sampling: 03-30-2012
Date of Receipt: 03-31-2012
Date of Report: 03-31-2012

MoldRANGE™: Extended Outdoor Comparison
Outdoor Location: 21203001-6 TM01OUT

Fungi Identified	Outdoor data	Typical Outdoor Data for: March in California (n‡=17615)†						Typical Outdoor Data for: The entire year in California (n‡=175032)†					
		very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
Generally able to grow indoors*													
Alternaria	150	13	13	27	53	87	47	13	13	27	67	110	55
Bipolaris/Drechslera group	-	7	13	13	27	40	8	7	13	13	27	40	12
Chaetomium	-	7	13	13	27	40	11	8	13	13	27	44	19
Cladosporium	910	100	160	430	1,100	1,700	95	110	210	640	1,700	2,800	97
Curvularia	-	7	10	13	27	40	2	7	13	13	27	53	6
Nigrospora	-	7	10	13	13	27	4	7	13	13	27	53	8
Penicillium/Aspergillus types	160	53	53	160	430	690	81	53	110	210	590	1,000	85
Stachybotrys	-	7	13	13	27	67	3	7	13	13	33	67	4
Torula	-	8	13	13	40	67	8	8	13	13	40	67	12
Seldom found growing indoors**													
Ascospores	2,600	27	53	160	480	810	80	25	53	110	350	690	72
Basidiospores	480	76	140	480	1,500	2,800	97	53	80	270	1,000	2,300	94
Rusts	-	13	13	13	42	80	23	13	13	13	53	80	27
Smuts, Periconia, Myxomycetes	13	13	13	27	67	110	54	13	13	40	110	200	68
§ TOTAL SPORES/m3	4,300												

†The 'Typical Outdoor Data' represents the typical outdoor spore levels for the location and time frame indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

‡n = number of samples used to calculate data.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, EMLab P&K may not have received and tested a representative number of samples for every region or time period. EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
 Re: 21203001-6&7

Date of Sampling: 03-30-2012
 Date of Receipt: 03-31-2012
 Date of Report: 03-31-2012

MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 21203001-6 TM01OUT:

Species detected	Outdoor sample spores/m3				Typical outdoor ranges (North America)	Freq. %
	<100	1K	10K	>100K		
Alternaria				150	7 - 29 - 510	48
Ascospores				2,600	13 - 170 - 5,200	77
Basidiospores				480	13 - 400 - 21,000	92
Cladosporium				910	27 - 480 - 10,000	91
Penicillium/Aspergillus types				160	13 - 160 - 2,600	71
Smuts, Periconia, Myxomycetes				13	7 - 44 - 930	65
Total				4,267		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurrence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: 21203001-6 TM02

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: N/A Result: N/A Critical value: N/A Inside Similar: N/A	Result: 0.2857	dF: 6 Result: -0.1429 Critical value: 0.7714 Outside Similar: No	Score: 103 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Smuts, Periconia, Myxomycetes					13
Total					13

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

** An agreement ratio is a simple method for assessing the similarity of two samples (in this case the indoor sample and the outdoor summary) based on the spore types present. A score of one indicates that the types detected in one location are the same as that in the other. A score of zero indicates that none of the types detected indoors are present outdoors. Typically, an agreement of 0.8 or higher is considered high.

*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken
Tse
Re: 21203001-6&7

Date of Sampling: 03-30-2012
Date of Receipt: 03-31-2012
Date of Report: 03-31-2012

MoldSTAT™: Supplementary Statistical Spore Trap Report

**** MoldSCORE™ is a specialized method for examining air sampling data. It is a score between 100 and 300, with 100 indicating a greater likelihood that the airborne indoor spores originated from the outside, and 300 indicating a greater likelihood that they originated from an inside source. The Result displayed is based on the numeric score given and will be either Low, Medium, or High, indicating a low, medium, or high likelihood that the spores detected originated from an indoor source. EMLab P&K reserves the right to, and may at anytime, modify or change the MoldScore algorithm without notice.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor ranges" are based on the results of the analysis of samples delivered to and analyzed by EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. With the statistical analysis provided, as with all statistical comparisons and analyses, false-positive and false-negative results can and do occur. EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the data contained in, or any actions taken or omitted in reliance upon, this report.

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken
Tse
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Date of Sampling: 03-30-2012
Date of Receipt: 03-31-2012
Date of Report: 03-31-2012

MoldSCORE™: Spore Trap Report

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

†The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods.

††Most of these spore types are not seen with culturable methods (Anderson sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores.

‡Rated on a scale from 100 to 300. A rating less than 150 is low and indicates a low probability of spores originating inside. A rating greater than 250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A rating between 150 and 250 indicates a moderate likelihood of indoor fungal growth. MoldSCORE is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the analysis on other samples (like wall cavity samples) will lead to misleading results.

