



**Environmental
Microbiology
Laboratory, Inc.**

Report for:

Mr. Steve Wallstrom
ENVIRONIX
15213 NE 90th Street
Redmond, WA 98052

Regarding: Project: Sample report
EML ID: 123456

Date of Analysis: 07-06-2006 and 07-06-2006

Approved by:

Dr. Harriet Burge
Director of Aerobiology

Dr. David A. Bell
Laboratory President

Project SOPs: Premium spore trap supplement (100185), Spore trap analysis (100005)

This coversheet is included with your report in order to comply with AIHA and ISO accreditation requirements.

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 corrections of results is not a standard practice. The results relate only to the items tested.

Environmental Microbiology Laboratory, Inc. ("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: 4

Client: ENVIRONIX
 C/O: Mr. Steve Wallstrom
 Re: Sample report

Date of Sampling: 06-29-2006
 Date of Receipt: 07-05-2006
 Date of Report: 07-06-2006

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	1: Outside control		2: Inside	
Comments (see below)	A		None	
Lab ID-Version‡:	1234567-1		1234567-1	
	raw ct.	spores/m3	raw ct.	spores/m3
Alternaria				
Arthrinium				
Ascospores*	12	160	8	107
Aureobasidium				
Basidiospores*	268	3,570	68	907
Bipolaris/Drechslera group				
Botrytis			1	13
Chaetomium				
Cladosporium	4	53	4	53
Curvularia				
Epicoccum				
Fusarium				
Myrothecium				
Nigrospora				
Other brown	2	27	4	53
Other colorless				
Penicillium/Aspergillus types†	36	480	12	160
Pithomyces				
Rusts*				
Smuts*, Periconia, Myxomycetes*	7	93		
Stachybotrys				
Stemphylium				
Torula				
Ulocladium				
Unknown				
Zygomycetes				
Background debris (1-4+)††	3+		3+	
Sample volume (liters)	75		75	
TOTAL SPORES/M3		4,383		1,293

Comments: A) 28 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump.

* 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 actually higher than reported. Background debris also affects the reporting limit for some spore types. The reporting limit is dependent on spore size, background debris, sample volume, and the percentage of the trace analyzed. It is important to account for sample volumes when evaluating dust levels. The minimum reporting limit is based on a raw count of one, which the lowest count that can be detected.

‡ A "Version" greater than 1 indicates amended data.

Client: ENVIRONIX
 C/O: Mr. Steve Wallstrom
 Re: Sample report

Date of Sampling: 06-29-2006
 Date of Receipt: 07-05-2006
 Date of Report: 07-06-2006

MoldRANGE™: Extended Outdoor Comparison

Outdoor Location: 1, Outside control

Fungi Identified	Outdoor data	Typical Outdoor Data by Date†				Typical Outdoor Data by Location			
		Month: June				State: WA			
	spores/m3	low	med	high	freq %	low	med	high	freq %
Generally able to grow indoors*									
Alternaria	-	7	40	370	68	7	20	490	17
Bipolaris/Drechslera group	-	7	13	160	17	7	13	320	5
Chaetomium	-	7	13	110	17	7	13	67	6
Cladosporium	53	53	640	7,500	98	30	320	4,400	87
Curvularia	-	7	20	470	11	7	13	170	2
Nigrospora	-	7	13	130	8	-	-	-	< 1
Other brown	27	7	13	93	39	7	13	110	39
Penicillium/Aspergillus types	480	27	210	2,100	85	52	270	2,800	89
Stachybotrys	-	7	13	250	4	5	13	1,600	2
Torula	-	7	13	130	18	7	13	64	5
Seldom found growing indoors**									
Ascospores	160	13	160	7,100	80	27	450	8,800	88
Basidiospores	3,570	13	270	13,000	93	53	1,600	24,000	96
Rusts	-	7	25	240	33	7	13	290	15
Smuts, Periconia, Myxomycetes	93	12	67	1,200	83	7	27	410	51
TOTAL SPORES/M3	4,383								

† The Typical Outdoor Data by Date represents the typical outdoor spore levels across North America for the month indicated. The last column represents the frequency of occurrence. The low, medium, and high values represent the 2.5, 50, and 97.5 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, 2.5% 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.

‡ The Typical Outdoor Data by Location represents the typical outdoor spore levels for the region indicated. As with the Typical Outdoor Data by Date, the four columns represent the frequency of occurrence and the typical low, medium, and high concentration values for the spore type indicated. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

*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.

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 Environmental Microbiology Laboratory, Inc. 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, Environmental Microbiology Laboratory, Inc. may not have received and tested a representative number of samples for every region or time period. Environmental Microbiology Laboratory, Inc. 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: ENVIRONIX
 C/O: Mr. Steve Wallstrom
 Re: Sample report

Date of Sampling: 06-29-2006
 Date of Receipt: 07-05-2006
 Date of Report: 07-06-2006

MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 1: Outside control

Species detected	Outdoor sample spores/m3				Typical outdoor ranges (North America)	Freq. %
	<100	1K	10K	>100K		
Ascospores				160	13 - 150 - 3,900	77
Basidiospores				3,570	13 - 320 - 12,000	93
Cladosporium				53	53 - 530 - 7,700	95
Other brown				27	7 - 13 - 93	37
Penicillium/Aspergillus types				480	31 - 210 - 2,700	88
Smuts, Periconia, Myxomycetes				93	7 - 40 - 760	70
Total				4,383		

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: 2: Inside

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 29%	dF: N/A Result: N/A Critical value: N/A Inside Similar: N/A	Result: 0.8333	dF: 7 Result: 0.7768 Critical value: 0.6786 Outside Similar: Yes	Score: 118 Result: Low
Species Detected	Spores/m3			
	<100	1K	10K	>100K
Ascospores				107
Basidiospores				907
Botrytis				13
Cladosporium				53
Other brown				53
Penicillium/Aspergillus types				160
Total				1,293

* 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.

Environmental Microbiology Laboratory, Inc.
1400 112th Avenue SE, Suite 100, Bellevue, WA 98004-6997
(650) 829-5800 Fax (650) 829-5852 www.emlab.com

Client: ENVIRONIX
C/O: Mr. Steve Wallstrom
Re: Sample report

Date of Sampling: 06-29-2006
Date of Receipt: 07-05-2006
Date of Report: 07-06-2006

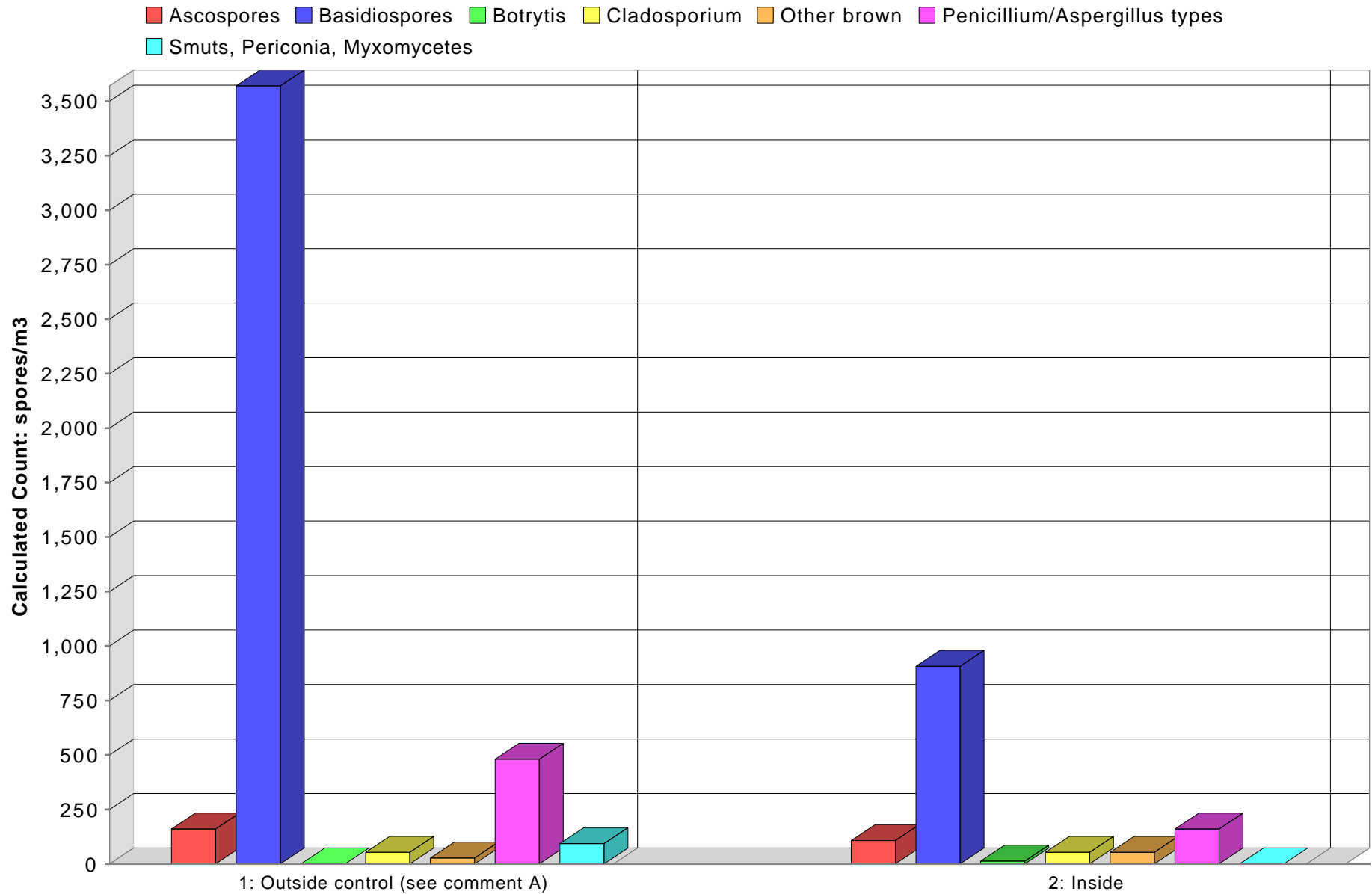
MoldSTAT™: Supplementary Statistical Spore Trap Report

*** 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.

**** 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 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 Environmental Microbiology Laboratory, Inc. 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. Environmental Microbiology Laboratory, Inc. 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.

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY



Comments: A) 28 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump.

Note: Graphical output may understate the importance of certain "marker" genera.

Client: ENVIRONIX
 C/O: Mr. Steve Wallstrom
 Re: Sample report

Date of Sampling: 06-29-2006
 Date of Receipt: 07-05-2006
 Date of Report: 07-06-2006

OTHER BIOLOGICAL PARTICLES REPORT: NON-VIABLE METHODOLOGY

Location:	1: Outside control		2: Inside	
Comments (see below)	None		None	
Lab ID-Version‡:	1234567-1		1234567-1	
	raw ct.	particles/m3	raw ct.	particles/m3
POLLEN:				
Alder (Alnus)				
Ash (Fraxinus)				
Birch (Betula)	1	13		
Cedar/Juniper (Cupressaceae)				
Chenopods (Chenopodiaceae)				
Elm (Ulmus)				
Eucalyptus (Eucalyptus)				
Grass (Poaceae)	5	67		
Mulberry (Morus)				
Oak (Quercus)				
Other	3	40		
Pine (Pinaceae)				
Ragweed (Ambrosieae)				
Sycamore (Platanus)				
OTHER PLANT:				
Algae	8	107	1	13
Diatoms				
Fern, moss, etc. spores	1	13		
Other (wood, trichomes, etc.)	97	1,290	412	5,490
OTHER PARTICLES:				
ANIMAL:				
Epithelial (skin) cells	6	80	828	11,000
Hair				
Insect parts	1	13	1	13
Mites				
FUNGI:				
Hyphal fragments	1	13		
NON-BIOLOGICAL:				
Glass fiber	3	40	16	213
Background debris (1-4+)†	3+		3+	
Sample volume (liters)	75		75	

Comments:

Note: Interpretation is left to the company and/or persons who conducted the field work.

† Background debris is an indication of the amounts of non-biological particulate matter present on the slide (dust in the air) and is graded from 1+ to 4+ with 4+ indicating the largest amounts. To evaluate dust levels it is important to account for differences in sample volume.

‡ A "Version" greater than 1 indicates amended data.