



**Astex Environmental Services, Inc.**  
123 Catalpa · San Antonio, TX 78209  
Phone: (210) 828-9800 · Fax: (210) 829-4927

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June 19, 2007

Ms. Rachel Pena  
San Antonio Housing Authority  
818 S. Flores  
San Antonio, Texas 78204  
Phone: (210) 477-6004  
Email: rachel\_pena@saha.org

RE: Limited Mold Inspection, 139 Villa Arboles, San Antonio, Texas  
Astex Project #AES-07-C-4263

Dear Ms. Pena,

Pursuant to your request, on June 7, 2007, Mr. Ron Greenberg of Astex Environmental Services, Inc. (AES), Texas Department of State Health Services (TDSHS) Mold Assessment Consultant MAC 0509 conducted a Limited Mold Inspection within the unoccupied home at 139 Villa Arboles, San Antonio, Texas to investigate the general microbial conditions in the home prior to sale.

***Scope of Work***

The scope of work for this limited inspection included the collection of the following samples:

- Air samples (Allergenco brand cassettes) were collected in the following locations for the analysis of Total Bioaerosols:
  1. inside – at the return air intake - 1 sample
  2. inside – in bedroom with damage at window - 1 sample
  3. outside comparison/control sample - 1 samples (see note above)

- Surface sample (swab)
  1. inside – on windowsill in bedroom with damaged window - 1 sample

Note: These samples were delivered to the contract lab, Aerotech P&K, 1501 W. Knudsen Drive, Phoenix, AZ 85027, for analyses in accordance with the American Industrial Hygiene Association (AIHA) Environmental Microbiology Laboratory Accreditation Program (EMLAP) as well as following the Food and Drug Administration (FDA) Good Laboratory Practice Guidelines.

### ***Visual and Moisture Inspection Results***

Small dots of visible mold and evidence of water intrusion were observed along the windowsill within the bedroom with a broken window. Only the perimeter wall with the broken window was found to have elevated moisture levels.

### ***Temperature and Humidity Levels***

Temperature readings within the house were from 81.3 to 82.4 degrees Fahrenheit and humidity was noted to be between 69.9 and 79.3 percent

### ***Analytical Results***

The Air-O-Cell Samples were collected by Astex personnel on the afternoon of June 7, 2007 and were delivered to the contract lab for analysis of total bioaerosols with the results being made a part of this report. The data generated in this report is based on the samples and accompanying information provided and represents concentrations at a point in time under the conditions sampled. Keep in mind, sample values fluctuate widely and single point-in-time samples can be highly variable.

Currently, there are no regulations, federal or state, establishing action limits for mold spores and mold particulates in indoor air. Also, there are no species of molds identified to be hazards to public health. Current practice is to compare interior to exterior samples, noting the species present and the contrasting levels of spores and particle.

During this limited investigation, the following observations were noted:

#### **Air-O-Cells (Fungal Spores - Air-O-Cells):**

- Outdoor air had typical levels of total fungal spores, dominated by *Cladosporium* and *Basidiospores*. There were only moderate levels of *Aspergillus/Penicillium*-like spores.
- Indoor air in general had very low levels of total fungal spores (920 to 1,693 count/M<sup>3</sup>) compared to outdoor air (4,853 count/M<sup>3</sup>) and the distribution of spores was typical of the outdoor air with *Cladosporium*, *Aspergillus/Penicillium*-like spores, and *Basidiospores* being dominant.

#### **Surface sample (swab):**

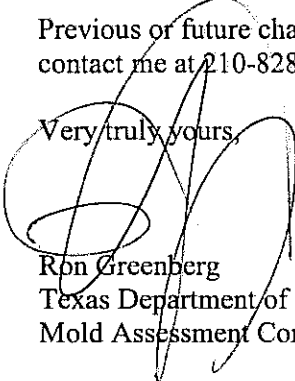
- The swab sample taken on the windowsill located along the perimeter wall with the broken window was laboratory analyzed to contain high levels of *Aspergillus/Penicillium*-like spores (541,880 count/swab).

***Conclusions/Recommendations***

- Fungal spore counts within the residence were below the outside level on the day of sampling and the distribution of spores was typical of the outdoor air.
- Bedroom #2 was observed to have a broken window with a plywood covering. The swab sample taken on the window sill was identified as containing high levels of *Aspergillus/Penicillium*-like spores (541,880 count/swab) therefore additional investigation is warranted or the window should be repaired and the wall surrounding it should be removed by a Texas licensed mold contractor and the area sanitized.

Previous or future changes in mold concentrations cannot be inferred from these sample results. Please contact me at 210-828-9800 with any questions.

Very truly yours,



Ron Greenberg  
Texas Department of State Health Services (TDSHS)  
Mold Assessment Consultant No. MAC 0509

Attachments:           Chain of Custody  
                                  Laboratory Results



**AEROTECH P&K**  
An Affiliate of Severn Trent Laboratories, Inc.

Project Name: 139 Villa Arboles  
Project Number: AES-07-C-4263  
Date Received: 06/08/2007  
Date Reported: 06/13/2007

Lab Number: 915-706-0663  
ATHA EMLAP No. 102297  
Total Fungal Spore, Mycelia and Pollen Counts-Air  
Aerotech Method: A001.7 Other

Astex Environmental Services, Inc.  
123 Catalpa  
San Antonio, TX 78209  
Attn: Ron Greenberg

Sample Number	1		2		3	
	O-1 Outside Front		I-1 Return		I-2 BR W/ Damage	
Sample Identification	6/13/2007		6/13/2007		6/13/2007	
Date Analyzed	0.0750		0.0750		0.0750	
Volume(M <sup>3</sup> )	100% of Trace at 600x Magnification		100% of Trace at 600x Magnification		100% of Trace at 600x Magnification	
Percent Of Trace Analyzed	3		3		3	
Debris Rating	3		3		3	
Analyte	Count/M <sup>3</sup>		Count/M <sup>3</sup>		Count/M <sup>3</sup>	
	Total Count	%	Result	DL	Result	DL
Mycelial Fragments	4	n/a	53	13	67	13
Pollen	6	n/a	80	13	27	13
Total Fungal Spores	364	100	4,853	13	1,593	13
<b>Fungal Spore Identification</b>						
<i>Alternaria</i>	11	3	147	13	40	13
<i>Aspergillus</i>	19	5	253	13	80	13
<i>Aspergillus/Penicillium-Like</i>	37	10	493	13	440	13
<i>Basidiospores</i>	116	32	1,547	13	307	13
<i>Bipolaris/Drechslera</i>	10	3	133	13	27	13
<i>Botrytis</i>						
<i>Chaetomium</i>						
<i>Cladosporium</i>	147	40	1,960	13	613	13
<i>Curvularia</i>	9	2	120	13	93	13
<i>Epicoccium</i>	1	<1	13	13		
<i>Fusarium</i>						
<i>Memnoniella</i>						
<i>Nigrospora</i>						
<i>Odium/Peronospora</i>						
<i>Pitheomyces</i>						
<i>Rusts</i>	1	<1	13	13		
<i>Smuts/Myxomycetes/Periconia</i>	13	4	173	13	93	13
<i>Stachybotrys</i>						
<i>Stemphylium</i>						
<i>Tortula</i>						
<i>Ulocladium</i>						
Unclassified Conidia						
<b>Data Qualifier</b>						

Laboratory Manager: *[Signature]* Project Manager: *[Signature]*

Project Name: 139 Villa Arboles  
Project Number: AES-07-C-4263  
Date Received: 06/08/2007  
Date Reported: 06/13/2007

Lab Number: 915-706-0663  
AIHA EMLAP No. 102297  
Total Fungal Spore and Mycelia Counts-Surface  
Aerotech Method: S001

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Attn: Ron Greenberg

Sample Number	4			
Sample Identification	S-1 Window Sill At Damage			
Date Analyzed	6/13/2007			
Diluent Volume (mL)	1.0			
Area (cm <sup>2</sup> )	6.4500			
Analyte	Count/Swab	Count/cm <sup>2</sup>		%
	Result	DL	DL	
Mycelial Fragments	157,320	24,391	71	n/a
Total Fungal Spores	559,820	86,794	71	100
Fungal Spore Identification				
<i>Alternaria</i>	11,960	1,854	71	2
<i>Aspergillus</i>				
<i>Aspergillus/Penicillium-Like</i>	541,880	84,012	71	97
<i>Basidiospores</i>	1,380	214	71	<1
<i>Bipolaris/Drechslera</i>				
<i>Botrytis</i>				
<i>Chaetomium</i>				
<i>Cladosporium</i>	2,300	357	71	<1
<i>Curvularia</i>				
<i>Epicoccum</i>				
<i>Fusarium</i>				
<i>Memnoniella</i>				
<i>Nigrospora</i>				
<i>Odium/Peronospora</i>				
<i>Pithomyces</i>				
<i>RUSTS</i>				
<i>Smuts/Myxomycetes/Periconia</i>				
<i>Stachybotrys</i>				
<i>Stemphylium</i>				
<i>Tonilia</i>				
<i>Ulocladium</i>				
Unclassified Candida	2,300	357	71	<1
Data Qualifier	D97.D118			

Laboratory Manager: *Roger Beck* Project Manager: *Steve Gaudreau*

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 Total Fungal Spore and Mycelia Counts-Surface  
 Aerotech Method: S001

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**Data Qualifiers**

Listed below are the data qualifiers included in the analytical report to explain any analytical or quality control issues.

Data Qualifier Number	Description
D97	Yeast observed on slide.
D118	Excessive debris. Reported results could be low.

Laboratory Manager: *Ron Greenberg*

Project Manager: *Ron Greenberg*

Wednesday, June 13, 2007

Ron Greenberg  
Astex Environmental Services, Inc.  
123 Catalpa  
San Antonio, TX 78209



Re: Laboratory Number: 915-706-0663

Dear Ron Greenberg:

Aerotech Phoenix is pleased to provide the enclosed report of analyses for samples received June 08, 2007. This cover letter and accompanying pages are an integral part of this report. All analyses are performed in our AIHA EMLAP accredited laboratory under the FDA Good Laboratory Practice Guidelines and the parameters outlined in the most current version of the American Conference of Governmental Industrial Hygienists Bioaerosol Guidelines. The data generated in this report are based on the samples and accompanying information provided and represent concentrations at a point in time under the conditions sampled. Results can vary with site conditions. Aerotech Phoenix employees did not collect samples for this project, and may provide limited interpretation of this data as it relates to the overall investigation.

#### **Quality Assurance**

Aerotech Laboratories is staffed with over 200 professionals, including PhD's, chemists, and registered microbiologists with over 40 years of experience. The reliability of test results depends on many factors such as the personnel performing the tests, environmental conditions, selection and validation of test methods, equipment functioning, measurement traceability, as well as the sampling, storage and handling of test items, all of which are a reflection of the laboratories overall quality system.

Aerotech Laboratories, Inc. has modeled its quality system after ISO 17025 guidelines, one of the most stringent sets of standards in the industry, to ensure that its customers receive the high standard of accuracy, reliability, and impartiality that they have come to expect from a leader in the environmental industry. Aerotech Laboratories' adherence to the standards set forth in the ISO 17025 guidelines has been validated and formally recognized through accreditations granted by two independent outside agencies, and the American Industrial Hygiene Association (AIHA). As an additional measure to demonstrate its competency to perform the analyses it offers to its clients, Aerotech Laboratories also participates in a variety of different proficiency testing programs, including the Environmental Microbiology Proficiency Analytical Testing Program (EMPAT) sponsored by the American Industrial Hygiene Association.

As part of its continuous commitment to excellence, Aerotech Laboratories is also inspected, licensed and/or accredited by a number of governmental agencies and independent associations in addition to those already mentioned above. The scope document, accreditation certificates, and proficiency results can all be accessed at [www.aerotechlabs.com](http://www.aerotechlabs.com). Below you will find additional information regarding the specific analyses requested for this project.

**Spore Trap Device**

Spore traps are a unique sampling device designed for the rapid collection and analysis of a wide range of airborne particles, including fungal spores. Samples are analyzed via light microscopy at 600X magnification, with the entire slide (100% of the sample) being analyzed. The results are reported as **total**, meaning they include both viable and non-viable fungal spores. This technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores. Specific genera of greater than 500 spores per slide are difficult to count accurately due to overcrowding and are therefore estimations. Similarly, excessive non-microbial particulates can mask the presence of fungal spores, thereby reducing counting accuracies. All slides are graded with the following debris scale for data qualification.

**Debris Rating Scale**

Non-Microbial Particulate Debris Rating	Description	Interpretation
0	No particles detected in impaction line area.	No particulates on slide in impaction line area. The absence of particulates could indicate improper sampling or a blank sample, as most air samples typically contain some particulates.
1	Minimal non-microbial debris present.	Reported values are not affected by debris.
2	Up to 25% of the trace occluded with non-microbial particulates.	Non-microbial particulates can mask the presence of fungal spores. As a result, actual values could be higher than the numbers reported. Higher debris ratings increase the probability of this bias.
3	26% to 75% of the trace occluded with non-microbial particulates.	
4	76% to 90% of the trace occluded with non-microbial particulates.	
5	Greater than 90% of the trace occluded with non-microbial particulates.	<p>*Air-O-Cell or LARO Cassettes - Sample could not be read due to excessive debris. Reported concentrations are estimations calculated from the number of spores observed on the perimeter of debris. The sample should be collected at shorter time interval, or other measures taken to reduce the collection of non-microbial debris.</p> <p>*Other Cassettes - Sample could not be read due to excessive debris. The sample should be collected at shorter time interval, or other measures taken to reduce the collection of non-microbial debris.</p>

### Microscopic Screen

A microscopic screen is a rapid analytical technique for confirming the presence and identity of fungi in or on the surface of a sample. Bulk, swab, and dust samples undergo an aqueous extraction and subsequent microscopic analysis and the counts are therefore subject to a dilution factor. Tape samples are analyzed directly and spores are counted. All samples are analyzed via light microscopy at 600X magnification. The results are reported as **total**, meaning they include both viable and non-viable fungal spores. This technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores.

### Data Qualifiers

The *Data Qualifiers* identify issues or events that are relevant to your analytical results. A data qualifier includes information about the validity, the source of the data whether calculated, entered or estimated, and the value of an observation. In each case the data qualifiers provide significant information vital to the interpretation of the laboratory data.

This communication is intended only for the individual or entity to which it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately by telephone at 800.651.4802, and delete this message and all attachments thereto.

For additional information, or if you have any questions regarding this report, please do not hesitate to call.

Sincerely,



Lori Litwiller  
Project Manager  
Aerotech Phoenix  
800-651-4802

### Analytical References

1. Medically Important Fungi: A Guide to Identification, 3rd ed., ASM, 1995.
2. Standard Methods for the Examination of Water and Wastewater, 19th ed., APHA, 1995.
3. Sampling and Identifying Allergenic Pollens and Molds, Blewstone, 1990.
4. Identifying Filamentous Fungi: A Clinical Laboratory Handbook, Star, 1996.
5. Manual of Clinical Microbiology, 7th ed., ASM, 1999.
6. A Laboratory Guide to Common *Aspergillus* Species and their Teleomorphs, CSIRO, 1994.
7. Bioaerosols: Assessment and Control, ACGIH, 1999.

# AEROTECH P&K

An Affiliate of Severn Trent Laboratories, Inc.

www.AerotechPK.com

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Account Number **1135** Page 1 of 1

Client Name **Astex Environmental Services, Inc.**

Address **123 Catalpa**

City, State, Zip **San Antonio, TX 78209**

Contact **Ron Greenberg** Sample **ROWG**

Phone **210-828-9800** Project Name **139 VILLA ARBOLES**

FAX **210-829-4927** Project Number **AES-07-C-4263**

P.O. Number Fax Results  Y  N

E-mail **rong@astexinc.com** E-mail Results  Y  N

**WEATHER** Fog Rain Snow Wind Cloud

R/H	LEVEL	None				
Temp		Light				
		Moderals				
		Heavy				

**Sample Type Codes**

A - Air B - Bulk D - Dust S - Swab T - Tape  
W - Water WC - WallChek Other \_\_\_\_\_

**Analyses Requested**  
\*Rush fees apply, please indicate time required.

	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush	<input type="checkbox"/> Rush
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## Sample Information

#	Sample Identification	Date	Type	Area/Volume
1	0-1 OUTSIDE FRONT			0.075 m <sup>3</sup>
2	1-1 RETURN			11
3	1-2 BR WY DAMAGES			11
4	<del>1-3</del>			
5	1 WINDOW SILL AT DAMAGE		X	1 SQ IN

Instructions/Special Requirements:

On Account (must have preapproved credit)

Check Enclosed

Credit Card Payment - (please circle one) VISA MC AMEX Discover

Card Number \_\_\_\_\_ Expiration Date \_\_\_\_\_ Signature \_\_\_\_\_

Date	Time	Samples Relinquished By	Samples Received By
07/01/08	6:00 AM	[Signature]	[Signature]

Analysis performed is subject to the Terms & Conditions available at www.aerotechpk.com or call 800.651.4802 to request a copy.