

2351 W. Northwest Hwy., Suite 3321

Dallas, Texas 75220 Ph: (214) 350-5469

Fax: (214) 350-2914

September 28, 2012

Lewisville Independent School District 340 Lake Haven Lewisville, Texas 75057 Attn: Mr. Paul Siddall

Re: Mold Assessment Services

Highland Village Elementary School

Room 5D

301 Brazos Blvd. Highland Village, Texas SWG Project No. 0112221A

Introduction

Southwest Geoscience (SWG) conducted limited mold assessment activities for the Lewisville Independent School District (Lewisville I.S.D.) within room 5D at Highland Village Elementary School located at 301 Brazos Blvd. in Highland Village, Texas (hereinafter referred to as the "Site"). The investigation was limited to areas of the Site identified by Lewisville I.S.D. as described below. The assessment was performed by Mr. Clinton S. Jech a State of Texas licensed Mold Assessment Technician (License No. MAT1075) on September 22, 2012. SWG's mold services definitions and limitations are included as an attachment to this report.

Investigation Areas

Lewisville I.S.D. identified the following physical portions of the Site as the target investigation areas ("Investigation Areas") for mold assessment: readily accessible areas within room 5D. SWG's mold assessment services were limited to the Investigation Area(s) identified by Lewisville, I.S.D. Additional areas or portions of the Site were out-of-scope and not included in SWG's mold assessment or this report at this time.

Scope of Work

As set forth in SWG's Mold Assessment Proposal (No. 01121314) dated September 11, 2012, SWG's scope-of-work was to provide visual and/or analytical mold assessment and related services in the Investigation Areas which included:

Visual Reconnaissance: SWG performed a visual reconnaissance of the Investigation Areas for visible indications of moisture intrusion (as indicated by staining or visible moisture) and/or suspect mold growth. SWG's visual reconnaissance only included readily accessible or visible portions of the Investigation Areas.

Suspect Mold Growth Sampling and Analysis: SWG collected limited ambient air samples for nonviable mold spores utilizing Air-O-Cell cassettes. "Air-O-Cell" refers to slit impaction air sampling cassettes manufactured by Zefon Analytical Accessories, St. Petersburg, Florida.

Site Reconnaissance Observations/Findings and Recommendations

SWG's Mold Assessment Site reconnaissance was performed on September 22, 2012 by Mr. Clinton S. Jech. SWG's visual reconnaissance of the Investigation areas revealed the following:

Temperature and Relative Humidity

Temperature readings collected inside the building on September 22, 2012 were reported as 84.3 degrees Fahrenheit while relative humidity was reported 31.8 percent. Temperature readings collected outside the building ranged from 87.6 to 88.7 degrees Fahrenheit while outside relative humidity was ranged from 33.7 to 34.4 percent.



Relative humidity is a measure of the moisture content of air and is closely tied to the comfort of the office/workplace temperature. As with temperature, there are no regulations governing acceptable office/workplace humidity ranges. Humidity levels in the office/work place are not only related to health effects, but also have operational impacts on modern office equipment.

Workplace/office temperatures have historically been considered a subjective factor because the perception of uncomfortable temperature levels is specific to each individual. There are no regulations governing acceptable office/workplace temperature ranges, but significant research has been conducted which indicates that there are temperature ranges that are not only comfortable but also result in optimum performance. ASHRAE (American Society of Heating, Refrigerating & Air Conditioning Engineers) has published guidelines describing thermal environmental conditions that at least 80% of the persons who occupy that environment will find acceptable or "comfortable." Table I below explains the applicable limits and guidelines.

Table I						
Α	Acceptable Ranges Of Temperature And Humidity					
Relative Humidity	Winter Temperatures	Summer Temperatures				
30%	68.5 to 76°F	74 to 80°F				
40%	68.5 to 75.5°F	73 to 79.5°F				
50%	68.5 to 74.5°F	73 to 79°F				
60%	68 to 74°F	72.5 to 78°F				

SWG utilized a Protimeter Moisture Measurement System (MMS) instrument (Model No. BLD2000) to measure and diagnose dampness of the affected drywall. The MMS is a battery powered handheld unit that is equipped with hydrostick probes to measure moisture content in wood, drywall and other and non-conductive materials. The device measures electrical conductivity of building materials and compares the conductivity readings to an internal, electronic standard reading for normal or "dry" materials.

Moisture content readings were obtained by pushing the moisture probe pins into surfaces. The measured values were then displayed on a colored scale depicting if the materials measured were normal (dry), higher than normal but not critical (at risk) or contained excessive moisture levels (wet). Based on the manufacturer's guidelines, the instrument measurement values are described below:

< 5%	Out of Range
> 5% but < 16%	Normal
> 17% but < 20%	Higher than Normal but Not Critical
> 20	Excessive Moisture Levels

Moisture meter readings of the walls collected in the investigation area ranged from 8-15% relative humidity which is considered normal by the manufacturer.

Air Monitoring Results

SWG collected one (1) sample from the interior of the building and two (2) samples from the exterior of the building. The microbial samples were analyzed by Steve Moody Micro Services, L.L.C. (SMMS) in Farmers Branch, Texas; SMMS is a State of Texas licensed mold analysis laboratory and accredited under the AIHA Laboratory Quality Assurance Program for Environmental Microbiology.

Lewisville Independent School District SWG Project No. 0112221A September 28, 2012 Page 3



Air testing performed using spore traps found that airborne mold spores in the investigation areas were considerably lower and were qualitatively similar to those measured outside of the building at the time the sampling was performed. Total interior fungal spore concentration within the investigation area was reported as 5,820 counts/m³ while exterior levels ranged from 19,920 to 24,960 counts/m³.

Three (3) types of mold were identified at higher levels inside room 5D as compared to the exterior of the building. Pithomyces was reported as 40 counts/m³, while no exterior levels were reported. Spegazzinia was reported as 20 counts/m³, while no exterior levels were reported. Stachybotrys was reported as 60 counts/m³, while exterior levels were reported as 40 counts/m³.

The American Conference of Governmental Industrial Hygienists (ACGIH) sets forth assessment criteria related to the "indoor/outdoor" relationship where the indoor air quality should be at or below that of outdoor air quality with regard to fungal spores (see ACGIH Bioaerosols, Assessment and Controls publication, 1999).

Suspect Mold

No visible mold was observed during the assessment.

Conclusions and Recommendations

Due to the presence of Stachybotrys in Room 5D, SWG recommends that the room be cleaned and additional testing performed. If you have any questions regarding this report or if we can assist you with any other matter, please contact the undersigned at (214) 350-5469.

Sincerely.

Southwest Geoscience

Darren G. Bowden Corporate Director

Industrial Hygiene Services

Texas Mold Assessment Consultant

Lic. No. MAC0321

Attachments: Analytical Results/Chain of Custody

Mold Services Definitions & Limitations/Standard of Care and Reliance



Analytical Results/Chain of Custody

Steve Moody Micro Services, LLC

2051 Valley View Lane

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No. 12F-11675

Project: Highland Village ES Room 5D **Report Date** 09/28/2012 9:47 AM

Project #: 0112221A **Sample Date :** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 1 of 3

On 9/27/2012, three (3) samples were submitted by Clint Jech of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #3321, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
1	75	Exterior, East	Agaricus / Agrocybe	120
		,	Alternaria	1400
			Ascospores	280
			Aspergillus / Penicillium	1040
			Basidiospores	4200
			Cladosporium	8600
			Curvularia	160
			Drechslera / Bipolaris group	200
			Fusarium	280
			Hyphal / Spore Fragments	2840
			Myxomycete / Periconia / Rust / Smut	640
			Nigrospora	80
			Stachybotrys	40
			Torula	40
			Total:	19920

Steve Moody Micro Services, LLC

2051 Valley View Lane

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No. 12F-11675

Project: Highland Village ES Room 5D **Report Date** 09/28/2012 9:47 AM

Project #: 0112221A **Sample Date :** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 2 of 3

On 9/27/2012, three (3) samples were submitted by Clint Jech of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #3321, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
2	75	Exterior, North	Agaricus / Agrocybe Alternaria Ascospores Aspergillus / Penicillium Basidiospores Cercospora / Pseudocercospora Cladosporium Coprinus Curvularia Drechslera / Bipolaris group Fusarium Ganoderma Hyphal / Spore Fragments Myxomycete / Periconia / Rust / Smut Nigrospora	160 1160 80 2080 4840 280 11480 240 80 600 80 40 2560 1080 200
3	150	Room 5D * See Analytical Notes report for further details	Alternaria Aspergillus / Penicillium Basidiospores Cladosporium Curvularia Drechslera / Bipolaris group Hyphal / Spore Fragments Myxomycete / Periconia / Rust / Smut Pithomyces Spegazzinia Stachybotrys	24960 320 1120 1020 1340 60 460 900 480 40 20 60
			Total:	5820

Steve Moody Micro Services, LLC

2051 Valley View Lane

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No. 12F-11675

Project: Highland Village ES Room 5D Report Date 09/28/2012 9:47 AM

Project #: 0112221A **Sample Date :** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 3 of 3

On 9/27/2012, three (3) samples were submitted by Clint Jech of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #3321, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter

Results may not be reported except in full. Data contained in this test report relates only to the samples tested. This report does not express or imply interpretation of the results contained herein. Interpretation should be made by a qualified professional.

Steve Moody Micro Services assumes no responsibility for the manner in which these samples were collected or handled prior to being received at this laboratory. SMMS assumes no responsibility for the qualifications of personnel performing sampling and/or interpretations of this data.

Analyst(s): Rob Greene

Lab Director: Steve Moody

Approved Signatory:

Thank you for choosing Steve Moody Micro Services

Steve Moody Micro Services, LLC

Data Detail DSHS License No.: LAB0117 2051 Valley View Lane AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX **Lab Job No.:** 12F-11675

Project: Highland Village ES Room 5D **Report Date :** 09/28/2012 9:47 AM

0112221A Project #: **Sample Date:** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 1 of 2 This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	1		2		3					
Location:	Ex	cterior,	East	Ex	Exterior, North		Room 5D			
Debris Rating:		4		4		5				
Media Expires On:		May 20	13		May 20	13		May 20	13	
Notes Included?:										
Volume:		75			75			150		
	raw ct.	MDL	spores/m³	raw ct.	MDL	spores/m³	raw ct.	MDL	spores/m³	
Agaricus / Agrocybe	3	40.00	120	4	40.00	160				
Alternaria	35	40.00	1400	29	40.00	1160	16	20.00	320	
Ascospores	7	40.00	280	2	40.00	80				
Aspergillus / Penicillium	26	40.00	1040	52	40.00	2080	56	20.00	1120	
Basidiospores	105	40.00	4200	121	40.00	4840	51	20.00	1020	
Cercospora / Pseudocercospora				7	40.00	280				
Chaetomium										
Cladosporium	215	40.00	8600	287	40.00	11480	67	20.00	1340	
Coprinus				6	40.00	240				
Curvularia	4	40.00	160	2	40.00	80	3	20.00	60	
Drechslera / Bipolaris group	5	40.00	200	15	40.00	600	23	20.00	460	
Fusarium	7	40.00	280	2	40.00	80				
Ganoderma				1	40.00	40				
Hyphal / Spore Fragments	71	40.00	2840	64	40.00	2560	45	20.00	900	
Memnoniella										
Myxomycete / Periconia / Rust / Smut	16	40.00	640	27	40.00	1080	24	20.00	480	
Nigrospora	2	40.00	80	5	40.00	200				
Non-specified Fungal Spore(s)										
Pithomyces							2	20.00	40	
Pollen										
Spegazzinia							1	20.00	20	
Stachybotrys	1	40.00	40				3	20.00	60	
Torula	1	40.00	40							
TOTALS	498		19920	624		24960	291		5820	
Analyst	F	Rob Gre	ene	F	Rob Gre	ene	Rob Greene			
Analysis Date		9/27/20	12		9/27/20	12	9/27/2012			

Steve Moody Micro Services, LLC

Data Detail

DSHS License No.: LAB0117

2051 Valley View Lane

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No.: 12F-11675

Project: Highland Village ES Room 5D **Report Date:** 09/28/2012 9:47 AM

Project #: 0112221A **Sample Date :** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile

Page 2 of 2

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Debris Rating Key:

- 0 No debris detected.
- 1 Trace debris.
- 2 Light debris.
- 3 Moderate debris.
- 4 Substantial debris.
- 5 Extensive debris.
- 6 Field blank.

 $NOTE: Debris \ defined \ as \ skin, \ fibers, \ pollen \ grains, \ insect \ parts, \ and/or \ other \ non-fungal \ particles.$

Steve Moody Micro Services, LLC Analytical Notes DSHS License No.: LAB0117 2051 Valley View Lane AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No.: 12F-11675

Project: Highland Village ES Room 5D Report Date: 09/28/2012 9:47 AM

Project #: 0112221A **Sample Date :** 09/22/2012

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile

Page 1 of 1

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Samples Analyzed

Sample No: 3 : Room 5D Notes: 30% Occluded.

Field Blanks

No discernable field blanks were submitted with this set of samples.

NOTE: All remaining samples suitable for analysis.

Methods

Method: ASTM D7391-09: Categorization and Quantification of Airborne Fungal Structures in an Intertial Impaction Sample by Optical Microscopy.

Calculation: Spores/cubic meter = (Raw spore count)*(MDL)

Note: MDL (Minimum Detection Limit) is calculated based upon 1 raw spore count.

Steve Moody Micro Services recommends two significant figures for calculated values based ASTM D7391-09.



LAB # 102577

Chain	0	f Custod	ν

Page	of
8-	~~



Lab Job#	12F-11675	AOC3	
Lab Job#			
Lab Job#			

	ture Samples subject to Culture Curry		uty. **				
	ture Samples subject to Culture Grov	vtn*		.concess	DED #		
ASBESTOS I Bulk	☐1 day ☐2 day ☐3 day	☐5 day ☐Immed Positive Stop	liate	ASBESTOS T Air AHERA M Air 7402 (Moo	1ethod 6 hr	□12hr □2 day	☐24 hr ☐3 day
PCM Air (740	Soil / Wipe	□3 day □5 day		Water Analyze Blan	□1 day	□2 day □2 day □ No	☐3 day ☐3 day
Analyze Blan	Air Standard Profile A	☐2 day ☐Immed ir Expanded Profile	liate	HPC + Gram S HPC + 3 Gram HPC + 5 Gram Fecal Coliform	n Neg ID n Neg ID		□5 day
Billing Comp	oany / City:				# of Samples:	3	
Submitter / Co		5. Jech			Sample Date:	7/22/2	012.
			x2m :5	D.	Project #: 01	12221	A
Contact Info	Highland Villa	JELL			Phone #:		·
	is to: Clint-Dair				Phone #: Mobile #:	2 489-	1571
Invoice Addre	• / /				P.O. #:	· -	
	view paperwork and samples before submit	ting to lab. Unsealed / impro	perly packaged sampl	es or excessive admin	nistrative requests may in	cur additional fee	s
Notes:							
			Vol. / Area		T		
Sample #	Sample Descri	ption	if applicable		Location / No	tes	
1	Exterior Fin		75	1+=.33	716 7		ن۔ا
2	Exterior, No	14/-	75	H = 34	415 T=	876	<u>ن</u>
3	Roan 5D		130		15 T=		D
				M=8-	S Wall	La ling	
				are D.	ywall		
		, , , , , , , , , , , , , , , , , , ,					

				-			
		D-4-/Ti	Danie - J D			Date / Time:	
Released By	2	Date / Time:	Received By:	200		Date / Time:	2:13
Released By:		Y/27/6212 140 Date / Time:	Received By:		1	Date / Time:	0



Mold Services Definitions & Limitations/ Standard of Care and Reliance



Mold Services Definitions & Limitations

"Mold" defined. Mold is a general term used to describe various types of singled-celled naturally occurring biological organisms occurring worldwide. For purposes of this report (and the Texas Mold Assessment & Remediation Rules), the term "mold" is broadly defined to include any living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.

Limited Scope of Mold Assessment. The scope of SWG's mold assessment services as reflected in the Proposal and this report are limited in that (i) they were physically limited to certain portions of the building structure (e.g., the Client identified Investigation Areas); and (ii) limited by accessibility to building materials or components within the Investigation Area(s). In contrast to a Limited Assessment" is a comprehensive assessment, which involves destructive sampling methods and the scope of the assessment typically extending to the entire building structure.

Time sensitive. Mold assessments are essentially a "snap shot in time," and the results are only relevant at the time of site reconnaissance. Because mold, when biologically active, is a living organism, its presence is influenced and controlled by environmental conditions. Mold assessments, therefore, are "time sensitive" in that the presence and concentration of mold and similar organisms in building structures or in the air is directly influenced by environmental conditions (such as humidity, moisture, nutrients and substrates), whether natural or caused by man, which conditions may vary significantly over relatively short periods of time.

Methodologies. Currently, mold assessment methodologies and protocols in Texas are governed by persuasive guidelines (rather than promulgated federal/state or local regulations). Presently, there is no data that supports a threshold limit or dose-response relationship for exposure to mold aeroallergens, individual pathogens, opportunistic pathogens and/or mycotoxins. The Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH) and other non-governmental associations, have not yet established permissible exposure limits (PELs), recommended exposure limits (RELs), or other limit values for aeroallergens. Because no limit values presently exist, SWG will not and cannot represent that the site contains no harmful microbes, mold, fungi, or their metabolites, or other latent conditions beyond those identified by the limited scope of this mold assessment.

Findings limited. Findings from a limited mold assessment are limited because of the nature of the information obtained (e.g., visual reconnaissance of readily accessible areas of building structures, interview information, anecdotal information, and limited sampling data derived from one or more specific sampling events). SWG cannot warrant the accuracy of prior or subsequent information/data, reports and services performed by other firms at the Site. SWG assumes no responsibility or liability for errors in information or data provided by or through the client or third party sources. SWG's services are not to be construed as legal or medical interpretation or advice.



Moisture Intrusion Limitation. SWG performs mold assessment services and is not a moisture intrusion, HVAC, roofing, plumbing or building envelope specialist. However, during the course of conducting its mold assessment services, SWG will report observed areas of apparent moisture intrusion. SWG does not and will not investigate the cause or causes of such observed moisture intrusion. In the event apparent moisture intrusion is observed, SWG will recommend that the client contact a specialist (i.e., plumbing contractor, building envelope specialist, HVAC contractor, water intrusion specialist, etc.) to assist the client in determining the specific cause or causes of the moisture intrusion and remedial options.

Texas Licensing Requirements. SWG (and/or its personnel) will render the services set forth in this proposal in the capacity of a Texas licensed Mold Assessor. SWG is not licensed as a Mold Remediation Contractor and does not perform mold remediation. As of January 1, 2005, Texas law has required that Mold Assessors and Mold Remediation Contractors be licensed.

Mold Remediation Certificate. For mold remediation projects (above certain size thresholds), applicable Texas law (i.e., Texas Occupation Code Section 1958.54 and T.A.C. Section 295.397 (the Texas Mold Assessment and Remediation Rules), requires that a "Certificate of Mold Remediation" be issued by the Mold Remediation Contractor upon successful completion of the project. This certificate must be provided to property owners no later than the 10th day after the date on which the mold remediation is completed at a property. The Mold Remediation Certificate issued by the Mold Remediation Contractor must include a certification by the Mold Assessor that the mold remediation project has been successfully completed in accordance with the mold remediation protocol.

Be advised that SWG's issuance of a Mold Remediation Certificate upon successful completion of a Mold Remediation project does not mean, warrant or otherwise guarantee that mold will not be subsequently found in any portion of the Investigation Area or the Site. In the event that SWG is engaged to render services in connection with a mold remediation project, SWG will require *Client to provide to SWG a signed certificate prepared by Client's moisture intrusion specialist or appropriate contractor stating that all sources of moisture which resulted in the presence of mold in the Investigation Area have been fully remediated and corrected.*

Standard of Care

SWG performed its Services in accordance with generally accepted practices of the profession undertaken in similar services at the same time and in the same geographical area. No other warranties, expressed or implied, apply to the Services hereunder or this report.

Reliance

SWG's proposal for this project, services and this report have been prepared on behalf of and for the exclusive use of Lewisville Independent School District solely for their use and reliance in assessing the presence of mold in the Investigation Areas of the site. Lewisville Independent School District is the only party to which SWG explained the risks and limitations of the services and was solely involved in shaping the scope of services. Accordingly, reliance on this report by any other party may involve assumptions leading to an unintended interpretation of findings and opinions. With the consent of the client, SWG may offer reliance to third parties



or contract with other parties to develop findings and opinions related to such party's unique risk management concerns. Notwithstanding the foregoing, reliance by any and all third parties upon the proposal, the Services or this report shall be limited in the aggregate to all relying parties to the fair market value of the Services provided by SWG.