



August 4, 2014

Webster Presbyterian Church
201 W NASA Parkway
Webster 77598
Attn: Melisa Ferguson

**RE: LIMITED MOLD INSPECTION AND SAMPLING FOR AIRBORNE MOLD SPORES -
WEBSTER PRESBYTERIAN CHURCH**

Air sampling and evaluation for moisture and mold growth was conducted in the Webster Presbyterian Church at 201 W NASA Parkway in Webster, TX. The assessment and sampling was conducted on August 1, 2014 by Robert L. Voorhies with A & B Environmental Services, Inc. (A & B). Mr. Voorhies is licensed by the Texas Department of State Health Services (DSHS) as a mold assessment consultant (license # MAC 0358). All samples were analyzed by A & B Environmental Services, Inc, a DSHS licensed mold lab (license # LAB0110).

Building Conditions

The inspection and limited sampling was requested by the Client in response to occupant concerns about suspected mold in certain areas.

1st floor classroom area - a small area of visible mold growth was present on the base of the wall separating the classroom from the HVAC room. At the time of the inspection the moisture level in the sheetrock at the base of the wall was about 15%, slightly elevated above normal but not at the level considered wet and capable of supporting mold growth, about 21%. Water was present on the floor of the HVAC room, possibly from the rain on the previous night. The water intrusion probably has occurred repeatedly and is the moisture source that allowed the mold growth on the adjoining sheetrock wall.

The total area of mold growth is about 2 square feet, well under the 25 square feet that is the minimum regulatory limit under Texas law. The maintenance personnel can apply diluted bleach to the area and, when dry, paint with KILZ or a similar stain blocking primer.

It was reported that previous mold growth has been seen on the exterior walls when something is placed over them, such as a picture. This is caused by moisture traveling through the exterior brick wall and through the void space where it is then absorbed by the sheetrock. The moisture is drawn into the living space through the sheetrock. As long as the wall surface is not obstructed then the moisture evaporates.

Anything placed against the wall surface that impedes the air flow will result in moisture accumulation and mold growth at that location. No pictures, posters, maps or similar can be placed on the exterior walls anywhere in the building. Furniture can be placed near the wall as long as a few inches of clearance is maintained.

A small area of mold was seen on the wall in the janitor's closet. It was less than 1 square foot in size. There was no obvious moisture source but there is a faucet used to fill mop buckets. The mold can be cleaned with bleach and painted as previously described.

Concern was also expressed about an accumulation of dark staining around seams of the vinyl floor tiles. This is not mold but is caused by moisture coming through the slab and dissolving the glue used to attach the tiles to the cement. The water and dissolved glue travels to the edges of the tiles and up, where it dries and deposits the glue. There are also accumulations of material on the tiles that appears to be mineral deposits that may be related to evaporation of the water coming up through the floor. These are not mold.

An upstairs classroom used by teens was checked due to a previous ceiling leak. Slightly elevated moisture levels were found in the exterior walls similar to those seen on the 1st floor. There was no evidence of visible mold growth in that area.

An area of elevated moisture was found in a front building near the offices. There is an active roof leak above a stained glass window. The area to the left of the window had moisture of 20% and greater over an area about 3' wide. At the time of the inspection there was no visible water damage or mold growth.

It was noted that the HVAC filters on the unit adjacent to the children's classrooms are flat fiberglass panels. Outside air is drawn into the room where it mixes with return air from inside the building to be cooled and returned to the rooms. The filters in use do little to remove pollen, mold spores, and fine dust. The use of pleated filters with greater filtering capacity should be considered.

Sampling

One air sample was collected in the 1st floor children's area near the area of mold growth on the base of the wall. The intent of the samples was to determine the mold spore levels and to identify the types of mold spores present in the occupied area of concern.

The sample was analyzed by A & B Labs of Houston, TX using standard microbiological staining techniques. All of the sample area was examined on the cassette using 600X up to 1,000 X magnification.

The air sample was collected using an electric pump calibrated at flow rates of 15 liters per minute for a period of 10 minutes. The sample was collected on an Allergenco brand cassette. This sampling media, along with swab, tape and bulk samples, allows rapid identification of spore types on surfaces and in the air. The quick turnaround time and ability to sample for a wide range of spore types are their primary advantage. The drawbacks in using these media types are:

- 1) the inability to distinguish between viable and non-viable (living and dead) spores;

- 2) the inability to accurately quantify the numbers of spores on surfaces;
- 3) certain spore types cannot be precisely identified. For example, Aspergillus and Penicillium spores appear identical under a microscope, so they are reported together even though the molds are very different and produce different reactions.

Samples for viable mold spores produce more precise identification and quantification, and tell how many of the spores are actually alive. Unfortunately, this test usually takes about 2 weeks to get results from the lab because the mold must be cultured for 1-2 weeks. This long turnaround time makes these tests of limited value in such situations where the quickest reasonable response is essential.

Please be aware that only limited areas were targeted for sampling. The limited inspection cannot insure that additional hidden areas of mold growth are not present in the structure. It is always possible that mold may exist in inaccessible areas, such as inside wall cavities and under flooring, which cannot be detected by the standard sampling and inspection techniques used in this limited inspection. Only those areas that are clearly visible and accessible are included in the visual inspection and moisture readings unless information is provided that indicates past water activity in certain areas. No furniture is moved as part of the inspection and no carpets are lifted. Since mold is a dynamic living organism the types of mold present and their concentrations and locations may change over time.

Mold spores are found inside all houses and buildings in this area because of the high humidity and warm temperatures. They may originate inside the structure or come in from outside through open doors, windows, air conditioners and on clothing. Most people exhibit no effect from them. Some people may experience hay fever symptoms if they have allergies to specific mold types. No clear relationship between the level of mold spores and the severity of the allergy symptoms has been established, but probably varies with the individual. A few mold types can emit chemicals that are suspected of causing possible health effects. Most common mold types in this area are not generally considered to be significant health hazards except to persons with weakened immune systems, chronic illnesses, the very young and elderly persons. Certain species of Aspergillus and Curvularia are reported to be opportunistic pathogens that can cause infections in such cases. There are no regulatory limits for mold spores.

Mold Results

All samples were analyzed by A & B Environmental Services, Inc, a DSHS licensed mold lab (license # LAB0110).

The following values are in spores per cubic meter of air (s/m³) and represent the predominant and most significant mold types found in this area and in these samples:

Location	Total Spores	Aspergillus	Cladosporium	Basidiospores	Ascospores	Curvularia
Children's area	573	420	7	67	13	33

The total spore level in the children's area, 573 s/m³, is within the range considered normal for the Houston area in similar settings. The predominant mold type is the common mold *Aspergillus*, accounting for 73% of the spores. *Aspergillus* is known to cause allergies in persons susceptible to it, but the levels are so low that going outside would have a greater effect on people's allergies. The other mold spore types identified are all at extremely low levels.

The sample found a moderate level of spores called Basidiospores. These are spores that come from a large family of molds called Basidiomycetes, which includes mushrooms, toadstools, puff balls, staghorn mold (looks like leathery antlers), and bracket fungi (flat mold growing on dead trees). These grow exclusively outside. They produce spores from organs called Basidia. On a mushroom the Basidia are located on the gills on the underside of the cap. Spores produced by this structure are called Basidiospores.

The presence of Basidiospores can be an indication that outside air is entering the building, carrying with it mold spores from outside, or that mold spores are being brought in from outside on people's clothing or other items. Its presence in the sample is an indication that air from outside is entering the office and at least some of the other spores found in that area come from outside rather than originating in the area.

Ascospores are another generic mold type that is produced by the mold generally found inside and outside, including *Aspergillus* and *Cladosporium*. Only a trace level of Ascospores was found in the sample. This is an indication that no significant mold growth is occurring inside the area tested.

There is no evidence of current significant or unusual mold growth in the areas tested. The levels seen in the areas tested would be unlikely to result in allergic reaction in most people. Persons sensitive to these levels would be more likely to experience allergy symptoms when exposed to outside air where the levels are generally higher.

Recommendations for Further Actions

- 1) There are no indications of significant mold growth or elevated airborne mold spores in any of the areas tested. The levels of individual airborne mold spores are low and should have no effect on the occupants. At least some of the spores originate outside.
- 2) The minor areas of visible mold on the base of the wall and in the janitor's closet can be cleaned with diluted bleach and painted with KILZ or a similar primer.
- 3) Do not place anything on the exterior walls that will prevent air flow.
- 4) Eliminate the water leak in the front area by the stained glass window
- 5) Consider using pleated filters in the HVAC units
- 6) Based on the findings there are no indications of the need for additional testing for mold.

Thank you for allowing ASTE LLC to assist you with this project. If you have any questions or need additional information please feel free to call me us at 713-627-2780.

Sincerely,

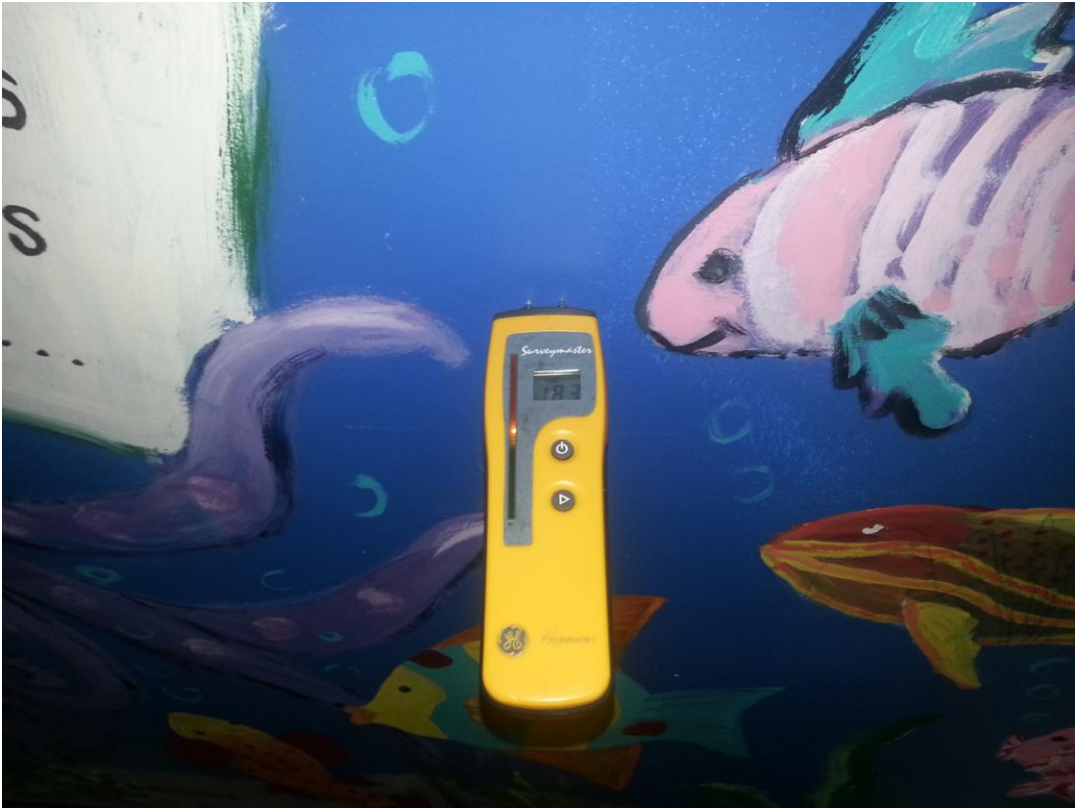


R. L. Voorhies P. G.
TX Mold Consultant License # MAC0358



Standing water on floor of HVAC room, wall with mold is on other side of the brick wall, visible mold on base of wall in classroom, moisture about 17%





Moisture level 18% in exterior wall, mold on wall in janitor's closet





Black material on floor tiles is dissolved glue from underneath, elevated moisture bedside window



LABORATORY ANALYSIS REPORT



A & B Environmental Services, Inc.
10100 East Freeway, Suite 100
Houston, Texas 77029

Report Date : 8/4/2014
Total No of Pages : 4

Texas Department of State Health Services Mold License #LAB0110

ProjectName : 201 W NASA Pkwy

Client :	ASTE Environmental	P.O.#. :	
Contact :	Lane Voorhies	Sample Collected By :	R.L. Voorhies
Address :	4635 S.W. Freeway, Suite 525 Houston, Texas, 77027	Date Received :	08/01/2014 14:15
		Sample Received By :	AHall

A & B Labs has analyzed the following samples . . .

Your Sample ID
1045119

A&B Job Sample ID
14080052.01

Thank you for choosing A & B Labs.

Approved By: Alisha Hughes
Title: Project Manager

Analyst:

This report cannot be reproduced, except in full, without prior written permission of A&B Labs. Results shown relate only to the items tested. Samples are assumed to be in acceptable condition unless otherwise noted. Blank correction is not made unless otherwise noted. Air concentrations reported are based on field sampling information provided by client.

LABORATORY MOLD TEST RESULTS FOR AIR SAMPLES



A&B Job ID: 14080052

Date: 08/04/2014

CLIENT: ASTE Environmental

PROJECT: 201 W NASA Pkwy

Job SampleID :	14080052.01								
Client SampleID :	1045119								
Collection Date:	08/01/2014								
Analysis Date:	08/04/2014								
Analyzed By:	JYS								
Debris(Low 1 to 5 High)	2								
Sample Volume(Liters) :	150								
Method	SOP057								
	Total Count	Count/M3	% of Total	Total Count	Count/M3	% of Total	Total Count	Count/M3	% of Total
Fungal Spores	86	573	100						
Mycelial Fragments	4	27							
Pollen Count	<1	<7							
Arthrinium									
Ascospores	2	13	2						
Aspergillus/ Penicillium	63	420	73						
Aureobasidium									
Basidiospores	10	67	12						
Bipolaris/ Dreschlera									
Botrytis									
Cercospora	3	20	3						
Chaetomium									
Cladosporium sp.	1	7	1						
Curvularia	5	33	6						
Dactylaria									
Epicoccum									
Fusarium sp.									
Nigrospora									
Oldium/Peronospora									
Pestalotiopsis									
Pithomyces/Ulocladium									
Rusts	1	7	1						
Scopulariopsis									
Smuts/Myxomycetes									
Stachybotrys	1	7	1						



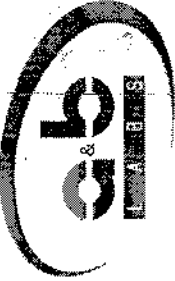
Sample Condition Checklist

A&B JobID : 14080052	Date Received : 08/01/2014	Time Received : 2:15PM																										
Client Name : ASTE Environmental																												
Temperature : 23.5°C	Sample pH : n/a																											
Thermometer ID : 102002320	pH Paper ID : n/a																											
Check Points																												
1.	Cooler seal present and signed.	Yes	No	N/A																								
2.	Sample(s) in a cooler.		X																									
3.	If yes, ice in cooler.			X																								
4.	Sample(s) received with chain-of-custody.	X																										
5.	C-O-C signed and dated.	X																										
6.	Sample(s) received with signed sample custody seal.		X																									
7.	Sample containers arrived intact. (If no comment).	X																										
8.	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Matrix</td> <td style="text-align: center;">Water</td> <td style="text-align: center;">Soil</td> <td style="text-align: center;">Liquid</td> <td style="text-align: center;">Sludge</td> <td style="text-align: center;">Solid</td> <td style="text-align: center;">Cassette</td> <td style="text-align: center;">Tube</td> <td style="text-align: center;">Bulk</td> <td style="text-align: center;">Badge</td> <td style="text-align: center;">Food</td> <td style="text-align: center;">Other</td> </tr> <tr> <td style="text-align: center;">:</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Matrix	Water	Soil	Liquid	Sludge	Solid	Cassette	Tube	Bulk	Badge	Food	Other	:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Matrix	Water	Soil	Liquid	Sludge	Solid	Cassette	Tube	Bulk	Badge	Food	Other																	
:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
9.	Sample(s) were received in appropriate container(s).	X																										
10.	Sample(s) were received with proper preservative			X																								
11.	All samples were logged or labeled.	X																										
12.	Sample ID labels match C-O-C ID's	X																										
13.	Bottle count on C-O-C matches bottles found.	X																										
14.	Sample volume is sufficient for analyses requested.	X																										
15.	Samples were received within the hold time.	X																										
16.	VOA vials completely filled.			X																								
17.	Sample accepted.	X																										
Comments : Include actions taken to resolve discrepancies/problem:																												

Received by : AHall

Check in by/date : AHall / 08/01/2014

INDUSTRIAL HYGIENE AIR MONITORING FIELD RECORD SHEET

 <p>10100 East Freeway Houston, Texas 77029 Ph: 713-453-6060 Fax: 713-453-6091 www.ablabs.com</p>		<p>REPORT TO: Company: <i>ASTE</i> Address: <i>Lane Voorhis</i> Contact: <i>713-627-2796</i> Phone: <i>Voorhis r l u e o l i n</i> Fax: <i>bedwils @ Smail.in</i> Email:</p>		<p>INVOICE TO: Company: <i>Samp</i> Address: Contact: Phone: P.O.#</p>		<p>TURNAROUND TIME 5 Days *3 Days *2 Days *1 Day <i>X</i> Note: *Surcharge Applies</p>	
<p>A&B Lab ID# <i>14080052</i></p>		<p>Collection Date: <i>8/1/14</i></p>		<p>Total Time(m): <i>10</i></p>		<p>Day Zero is the day sample is submitted. Report due at 5pm on due day.</p>	
<p>Project# <i>201 W NASA PKey</i></p>		<p>FlowRate L/min: <i>15</i></p>		<p>StopTime hh:mm</p>		<p>Comments</p>	
<p>Sampler's Name <i>R. C. Voorhis</i></p>		<p>StartTime hh:mm</p>		<p>Analysis Requested</p>			
<p>No Sample ID <i>01V045119 @ Children's Area</i></p>		<p>Date: <i>8/1/14</i></p>		<p>hh:mm</p>			
<p>Relinquished By: <i>R. R. Voorhis</i></p>		<p>Received By: <i>[Signature]</i></p>		<p>Date: <i>8.1.14 19.15</i></p>		<p>Time: <i>23.5c</i></p>	
<p>1</p>							
<p>2</p>							
<p>3</p>							