SPORE SAMPLING REPORT
FOR
GLENWOOD MIDDLE SCHOOL
2680 ROUTE 97
GLENWOOD, MD 21738

PREPARED FOR:

HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 ROUTE 108
ELLICOTT CITY, MD 21043

PREPARED BY:

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OCTOBER 5, 2015

150876

SPORE TRAP SAMPLING REPORT
FOR GLENWOOD MIDDLE SCHOOL
SEPTEMBER 24, 2015

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
I. BACKGROUND 1
II. OBSERVATIONS AND MEASUREMENTS 1
A. Observations and Measurements on September 24, 2015 1
B. Air Monitoring for Fungal Identification and Counting on September 24, 2015 4
III. CONCLUSIONS AND RECOMMENDATIONS 7
IV. LIMITATIONS 8

Tables

Table 1 – Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter

Table 2 – Particle, Temperature, Relative Humidity and Carbon Monoxide Measurements Collected on September 24, 2015 in Selected Classrooms at Glenwood Middle School

Table 3 – Results of Spore Trap Sampling in Selected Classrooms at Glenwood Middle School on September 24, 2015

Table 4 – Results of Spore Trap Sampling in Portable Classrooms at Glenwood Middle School on September 24, 2015

Table 5 – Summary of Spore Sampling Results to Date at GMS in the 2015-2016 School Year

Attachments

A: Building Layout and Sample Location Plan for September 24, 2015
B: Report of Analysis and Chain of Custody Forms September 24, 2015

SPORE TRAP SAMPLING REPORT
FOR GLENWOOD MIDDLE SCHOOL
SEPTEMBER 24, 2015

EXECUTIVE SUMMARY

Aria Environmental, Inc. (AE) was contracted by Howard County Public School System to perform spore trap sampling at the Glenwood Middle School at the end of August 2015 due to air quality concerns expressed by staff and parents and to monitor the school after a recent heating, ventilation and air-conditioning (HVAC) system upgrade. AE made measurements for temperature, humidity, carbon monoxide, carbon dioxide and particulate matter and collected microbial spore trap sampling for fungal spore identification and counting on September 24, 2015 as part of a series of spore sampling events that will occur in the first month of the 2015 - 2016 school year and less frequently throughout the school year. This report presents the results of air sampling made on September 24, 2015.

Spore Trap Sampling Report
For Glenwood Middle School
September 24, 2015

I. BACKGROUND

Representatives from Aria Environmental, Inc. (AE) visited Glenwood Middle School on September 24, 2015 to perform air monitoring in response to an ongoing indoor air quality complaint at the school. Measurements for temperature, humidity, carbon monoxide, carbon dioxide and particulate matter and microbial spore trap sampling were collected from classrooms 7, 10, 15, 21, 22, 25, 26, 33, and Band Room 36, and portable classrooms 60, 61, 70, 71, 80 and 81. Outdoor air samples were also collected for comparison purposes in one courtyard and outside near portable classroom 60. This monitoring was performed in response to employee and parental complaints and as a follow up to HVAC improvements.

There was no visible evidence of mold growth nor observed odors consistent with mildew in the classrooms sampled. Weather on the day of monitoring was warm and sunny.

II. OBSERVATIONS AND MEASUREMENTS

A. Observations and Measurements on September 24, 2015

Industry guidelines or standards for seasonal temperature and humidity ranges for thermal comfort are established by the American Society for Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standard 55-2013. These ranges are presented in Table 1. The U.S. Environmental Protection Agency (EPA) recommends maintaining indoor relative humidity below 60% and ideally between 30 and 50%. The room air temperature measured between 3:08 PM and 4:30 PM ranged from 72.1 to 77.0° F with an average of 74.7° F. The indoor relative humidity ranged from 44.0 to 50.7 percent. The temperature and relative humidity measurements are considered acceptable for summer thermal comfort in all rooms except Room 33 that had a temperature (72.1° F) slightly below the ideal range. The outside temperature at 4:34 PM was 81.2° F and the outdoor relative humidity was 33.0% outside near Portable Classroom 60, and the outside temperature at 4:39 PM was 77.2° F and the relative humidity was 38.6% in the courtyard outside classroom 18. No windows or doors were observed to be open during the monitoring period. Results of temperature, relative humidity, carbon dioxide and carbon monoxide monitoring are presented in Table 2.

Table 1- Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter[a]

Relative Humidity	Winter Temperature	Summer Temperature
30%	68.5°F – 76.0°F	74.0°F – 80°F
40%	68.5°F - 75.5°F	73.5°F – 79.5°F
50%	68.5°F - 74.5°F	73.0°F – 79.0°F
60%	68.0°F - 74.0°F	72.5°F – 78.0°F

[a]adapted from ASHRAE Standard 55-2013

Carbon dioxide and carbon monoxide measurements are used to assess ventilation system performance. The exhaled breath of building occupants is the main indoor source of carbon dioxide; therefore, the build-up of carbon dioxide indicates inadequate ventilation. Air monitoring was performed after school hours when the rooms were mostly unoccupied. Carbon dioxide concentrations ranged from 391 to 1,683 ppm indoors. The concentration of concern for carbon dioxide is set by ASHRAE standard 62.1–2013 as 700 ppm above outdoor air. On the day of monitoring, the outdoor air concentration of carbon dioxide ranged from 334 to 364 ppm. Carbon dioxide concentrations were within the comfort parameters established by ASHRAE,

except in Classrooms 7 and 10 and portable classrooms 71 and 81. There were no students in these rooms at the time of monitoring, but the monitoring took place soon after school ended for the day.

Carbon monoxide is mainly attributed to incomplete combustion. Concentrations of CO ranged from 0.2 to 1.7 ppm indoors and the outdoor concentrations ranged from 0.0 to 0.3 ppm in the two outdoor locations measured. CO concentrations were below the ASHRAE concentration of concern of 9 ppm.

Particulate matter or PM is the term for a mixture of solid particles and liquid droplets found in the air. It does not distinguish between the types of particles in the air (e.g., pollen, skin cells, mold spores, soil, etc.). Particulate matter includes "inhalable coarse particles," with diameters larger than 2.5 micrometers and smaller than 10 micrometers (PM 10) and "fine particles," with diameters that are 2.5 micrometers and smaller (PM 2.5). Particle loads expected to be a part of the school environment include carpet and clothing fiber, soil tracked from outside, paper dust, chalk dust, and dust and fibers from building materials. ASHRAE Standard 62.1–2013 suggests target indoor concentrations for PM 2.5 and PM 10 of 15 µg/m^3 and 50 µg/m^3, respectively. These concentrations are taken from the EPA's National Ambient Air Quality Standards (NAAQS) based on annual arithmetic means deemed acceptable for outdoor air quality. Occupational standards and guidelines for particles are nearly an order of magnitude higher than concentrations typically found in non-occupational settings and are not appropriate for comparison.

Particle measurements were taken with an Aerocet 531 particulate monitor. The particle monitor takes a two minute averaged sample of particle concentrations in 5 size fractions (PM 1, PM 2.5, PM 7, PM 10 and total suspended particles (TSP)). Results of particulate monitoring, presented in Table 2, revealed that PM 2.5 and PM 10 particle concentrations were well below the ASHRAE target concentrations in all areas monitored.

Spore Sampling Report
For Glenwood Middle School
September 24, 2015

Table 2: Particle, Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Measurements Collected on September 24, 2015 at Glenwood Middle School

Location	Time	PM1 (µg/m³)	PM2.5 (µg/m³)	PM7 (µg/m³)	PM10 (µg/m³)	TSP (µg/m³)	Temp (°F)	Rh (%)	CO (ppm)	CO_2 (ppm)
CR 7	3:08 PM	0	0	4	5	7	75.9	48.4	0.4	**1,391**
CR 10	3:17 PM	0	1	4	4	18	74.7	48.7	0.3	**1,432**
CR 15	3:23 PM	0	1	3	4	8	74.9	46.5	1.7	702
CR 21	3:28 PM	0	0	1	1	5	74.5	45.3	1.7	562
CR 22	3:33 PM	0	0	0	1	1	74.5	45.1	1.7	521
CR 25	3:39 PM	0	0	0	0	1	74.8	44.4	0.6	678
CR 26	3:44 PM	0	0	3	3	5	73.6	45.2	1.0	641
CR 33	3:49 PM	0	0	0	0	1	**72.1**	45.9	1.1	457
CR 36	3:53 PM	0	0	3	5	12	73.6	47.6	0.2	502
PCR 60	4:04 PM	0	0	0	1	4	77.0	50.7	0.4	391
PCR 61	4:07 PM	0	0	1	1	4	75.4	44.0	0.4	660
PCR 70	4:13 PM	0	0	3	3	3	73.6	44.7	0.3	901
PCR 71	4:18 PM	0	0	1	2	8	74.9	46.0	0.3	**1,371**
PCR 80	4:22 PM	0	0	2	3	5	76.8	44.9	0.3	468
PCR 81	4:30 PM	0	0	1	1	4	74.6	48.0	0.5	**1,683**
Out 2 Courtyard	4:39 PM	0	0	2	3	5	77.2	38.6	0.3	364
Out 1 near PCR 60	4:34 PM	0	1	5	7	10	81.2	33.0	0	334

CR = Classroom; PCR = Portable Classroom; Bold type indicates measurements above the guidelines

B. Air Monitoring for Fungal Identification and Counting on September 24, 2015

In the absence of visual sources of mold amplification and growth in the classrooms, non-viable spore trap samples were collected from nine classrooms within the main school building (Classrooms 7, 10, 15, 21, 22, 25, 26, 33, and Band Room 36), six portable classrooms (portable classrooms 60, 61, 70, 71, 80, and 81) and two outdoor locations to determine whether there was a difference between mold spore loads inside the building versus outside.

The spore trap samples were collected using AllergenCo-D cassettes attached to a Buck BioAire™ sampling pump calibrated to 15 liter per minute (LPM) air flow. The samples were collected for a period of ten minutes, the time period recommended for spore trap sampling in a clean indoor environment. The spore trap samples were submitted to Aerobiology Laboratory for analysis. The sample results are reported as the spores per cubic meter of air (spores per m^3) of hyphal fragments and total fungal spores. Depending upon the morphology of the spores, they were counted by their unique genus or were grouped into spores exhibiting common characteristics (e.g., Penicillium/Aspergillus group). Tables 3 and 4 present the results of the spore trap samples collected at Glenwood Middle School on September 24, 2015.

Indoor spore counts ranged from 273 to 2,000 total spores per cubic meter of air (m^3) in the main school building and from 333 to 2,480 in the portable classrooms on September 24, 2015. All indoor samples had total spore counts lower than the outdoor samples which ranged from 24680 to 25,020 spores per m^3. Chaetomium spores were found in the Classroom 80 sample at 7 spores per m^3, but these spores were not found in the outdoor samples. Smuts, Periconia and Myxomycetes spores were higher than the outdoor samples (180 -587 spores per m^3) in Band Classroom 36 (640 spores per m^3) and in Portable Classroom 71 (907 spores per m^3). All other spore types detected indoors were lower than the outdoor samples. Windows were not open during sampling.

No secondary colonizers including Chaetomium or Stachybotrys were detected in the indoor air samples except for the 7 spores per m^3 found in the Room 80 sample. This spore concentration is equivalent to one spore counted in the sample. Hyphal elements were detected in all nine main building classrooms and in three of the six portable classrooms. Indoor samples ranged from 7 to 147 hyphal elements per m^3, and all detected indoor hyphal elements were lower than the outdoor sample hyphal element counts ranging from 67 to 120 elements per m^3 in the two outdoor samples with the exception of the Classroom 33 sample (147 spores per m^3). Variations in outdoor spore concentrations are a function of diurnal rhythms of spore release, weather-related factors (*e.g.,* wind, rain, snow cover, temperature), and physical spatial factors. Certificates of analysis are included as Attachment B.

Spore Sampling Report
For Glenwood Middle School
September 24, 2015

Table 3: Results of Spore Trap Sampling in Selected Classrooms in Glenwood Middle School on September 24, 2015

Location	Outside near Room 60 (Out 1)	Outside in Courtyard (Out 2)	Room 7 (GM 07)	Room 10 (GM 10)	Room 15 (GM 15)	Room 21 (GM 21)	Room 22 (GM 22)	Room 25 (GM 25)	Room 26 (GM 26)	Room 33 (GM 33)	Band Room 36 (GM 36)
Spore Type	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**
Alternaria	67	67	7	20	-	-	-	-	7	27	13
Ascospores	1,707	1,067	27	-	13	-	-	-	13	7	27
Basidiospores	7,253	8,533	533	560	613	560	80	480	560	480	533
Cercospora	73	80	7	-	-	-	-	-	-	-	7
Chaetomium	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	12,693	13,760	960	480	160	187	73	87	113	73	453
Curvularia	87	13	-	-	-	-	-	-	-	7	7
Drechslera/Bipolaris group	7	7	-	-	-	-	-	-	-	-	7
Epicoccum	113	87	-	-	-	-	-	-	-	7	7
Hyphal Elements	67	120	47	60	33	13	13	20	7	**147**	67
Oidium	-	7	-	-	-	-	-	-	-	-	-
Penicillium/ Aspergillus	1,920	1,067	400	113	40	53	107	93	33	60	53
Pithomyces	107	33	7	20	-	-	-	7	27	7	107
Smuts, Periconia, myxomycetes	587	180	13	7	47	-	-	-	13	13	**640**
Total Fungi	24,680	25,020	2,000	1,260	907	813	273	687	773	827	1,920

Bold numbers represent spore concentrations above the outdoor counts. Dashes designate none detected.

Spore Sampling Report
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Table 4: Results of Spore Trap Sampling in Portable Classrooms in Glenwood Middle School on September 24, 2015

Location	Outside near Room 71 (Out 1)	Outside in Courtyard (Out 2)	Room 60 (GM 60)	Room 61 (GM 61)	Room 70 (GM 70)	Room 71 (GM 71)	Room 80 (GM 80)	Room 81 (GM 81)
Spore Type	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**	**Spores/ m^3**
Alternaria	67	67	-	-	-	33	7	13
Ascospores	1,707	1,067	27	20	-	20	33	7
Basidiospores	7,253	8,533	640	67	253	53	500	133
Cercospora	73	80	-	-	-	7	-	-
Chaetomium	-	-	-	-	-	-	**7**	-
Cladosporium	12,693	13,760	453	73	613	1,067	393	93
Curvularia	87	13	-	-	-	27	-	13
Drechslera/Bipolaris group	7	7	-	-	-	-	-	-
Epicoccum	113	87	-	-	-	-	13	13
Hyphal Elements	67	120	20	-	-	73	-	13
Oidium	-	7	-	-	-	-	-	-
Penicillium/ Aspergillus	1,920	1,067	87	107	60	213	20	40
Pithomyces	107	33	-	7	-	80	-	7
Smuts, Periconia, myxomycetes	587	180	7	80	40	**907**	7	-
Total Fungi	24,680	25,020	1,233	353	967	2,480	980	333

Bold numbers represent spore concentrations above the outdoor counts. Dashes designate none detected.

III. CONCLUSIONS AND RECOMMENDATIONS

Aria Environmental, Inc. (AE) was contracted by Howard County Public School System to perform spore trap sampling at the Glenwood Middle School at the end of August 2015 due to air quality concerns expressed by staff and parents and to monitor the school after a recent heating, ventilation and air-conditioning (HVAC) system upgrade. AE made measurements for temperature, humidity, carbon monoxide, carbon dioxide and particulate matter and collected microbial spore trap samples on September 24, 2015.

Thermal comfort parameters of temperature and humidity were measured and found to be mostly within the comfort ranges established by ASHRAE. Carbon dioxide was elevated in two main building classrooms (7 and 10) and two portable classrooms (71 and 81). Carbon monoxide and particulate matter measurements were within acceptable ranges for good indoor air quality in all areas.

Indoor spore counts ranged from 273 to 2,000 total spores per cubic meter of air (m^3) in the main school building classrooms and from 333 to 2,480 in the portable classrooms on September 24, 2015. All indoor samples had total spore counts lower than the outdoor samples which ranged from 24,680 to 25,020 spores per m^3.

Chaetomium spores were found in the Room 80 sample at 7 spores per m^3, but these spores were not found in the outdoor samples. This spore count is equivalent to one spore counted in this sample. Smuts, Periconia and Myxomycetes group spores were higher than the outdoor samples (180 - 587 spores per m^3) in Band Classroom 36 (640 spores per m^3) and in Portable Classroom 71 (907 spores per m^3). According to a recent literature review, these spore types are mostly plant pathogens. All other spore types detected indoors were lower than the outdoor samples. Indoor hyphal elements ranged from 7 to 147 elements per m^3. All indoor hyphal element counts were lower than the outdoor samples ranging from 67 to 102 elements per m^3 except for the Classroom 33 sample which was slightly higher than the highest outdoor sample (147 elements per m^3). Windows were not open during sampling.

Table 5 presents a summary of spore sampling results to date in the 2015 - 2016 school year. The indoor and outdoor ranges demonstrate the variable nature of spore counts.

Table 5 – Summary of Spore Sampling Results to Date at GMS in the 2015-2016 School Year

Date	Indoor Spore Count Range Spores per m^3	Outdoor Spore Count Range Spores per m^3
August 25, 2015	1,787 to 8,807	34,001 to 37,316
August 27, 2015	400 to 747	9,433 to 10,960
September 2, 2015	1,860 to 7,960	33,294 to 37,306
September 9, 2015	1,053 to 3,173	21,890 to 31,876
September 16, 2015	447 to 3,493	17,543 to 20,287
September 24, 2015	273 to 2,480	24,680 to 25,020

Spore measurements collected in classrooms were generally acceptable compared to outdoor samples with outdoor total spore counts approximately 23 times higher than the indoor counts on average. Indoor sample total spore counts and individual spore counts were all lower than the outdoor sample counts with a few exceptions described above. Follow up air sampling is scheduled for September 30, 2015 and will be performed on a weekly basis until the end of September in order to monitor changes in conditions affected by seasonal variations and the new HVAC system.

IV. LIMITATIONS

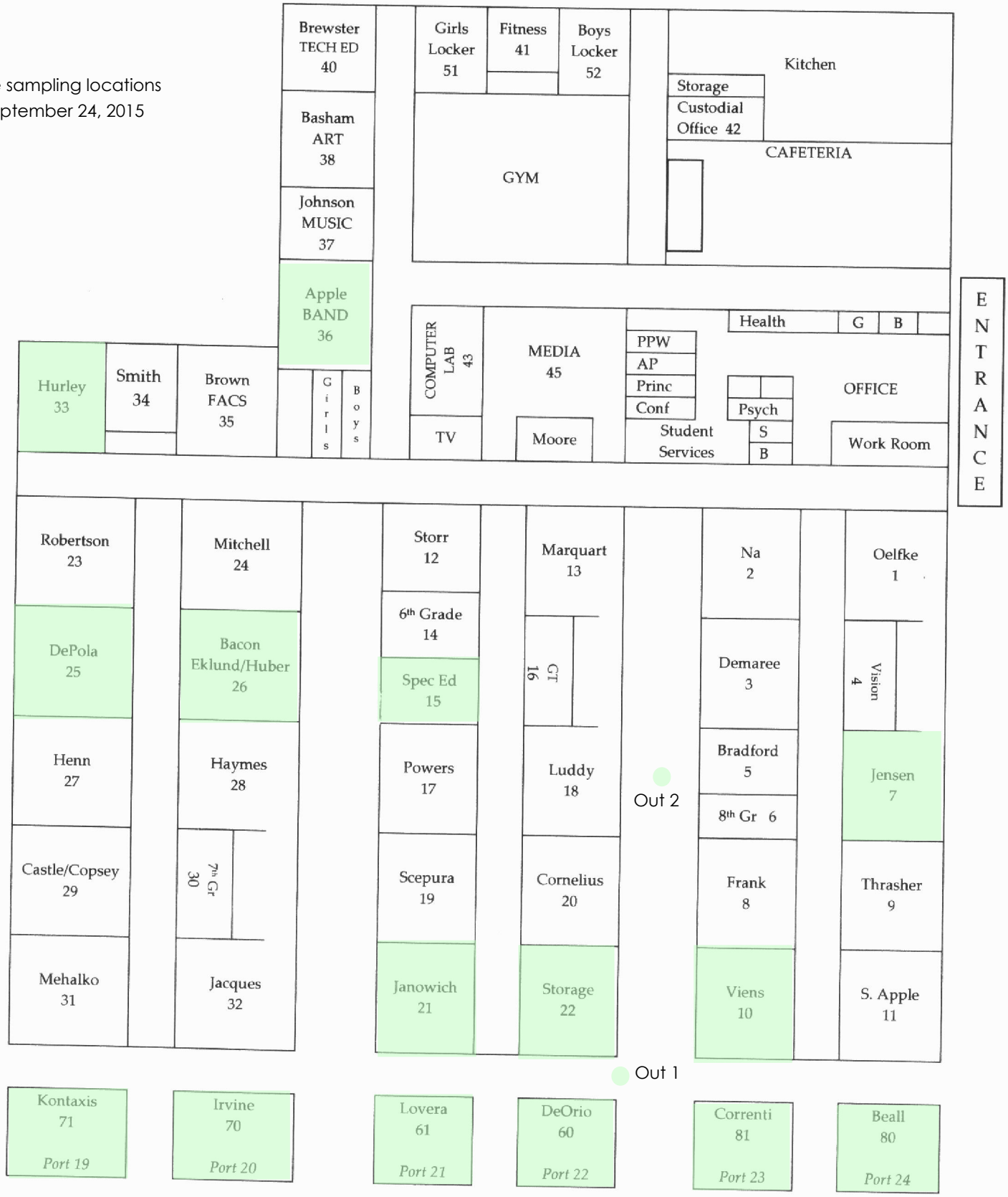
This report has been prepared for the exclusive use of the Howard County Public School System and/or their agents. This service has been performed in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards. Destructive sampling was not performed as part of this survey. No observations were made behind solid walls, ceilings or in pipe chases that weren't already openly visible.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that my present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions (e.g. abatement, removal, etc.) initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.

Attachment A:

Building Layout and Sample Location Plan for September 24, 2015

Spore sampling locations
for September 24, 2015



Glenwood Middle School Floor Plan

As of 8/02/13

N

Attachment B:

Report of Analysis and Chain of Custody Forms
September 24, 2015

Aerobiology Laboratory Associates, Incorporated
Expertise Since 1997

Certificate of Analysis
EMLAP# 102977

43760 Trade Center Place
Suite 100
Sterling, Virginia 20166
(877) 648-9150
www.aerobiology.net

Aria Environmental
P.O. Box 286
Woodbine, Maryland 21797
Attn: Julie Barth
Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
Date Received: 09/28/2015
Date Analyzed: 10/01/2015
Date Reported: 10/01/2015
Project ID: 15024332

1054 Spore Trap Analysis: SOP 3.8

Client Sample Number	**GM-07**				**GM-Out 1**			
Sample Location	**Classroom 7**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-001**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	1	7	<1	1/10	10	67	<1	-
ascospores	4	27	1	1/64	16	1707	7	-
basidiospores	20	533	27	1/14	68	7253	29	-
Cercospora	1	7	<1	1/11	11	73	<1	-
Cladosporium	36	960	48	1/13	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	7	47	2	1/1	10	67	<1	-
Penicillium/Aspergillus group	15	400	20	1/5	18	1920	8	-
Pithomyces	1	7	<1	1/16	16	107	<1	-
Smuts,Periconia,Myxomycetes	2	13	1	1/44	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	87	2000	~100%	1/12	387	24680	~100%	-

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Woodbine, Maryland 21797
Attn: Julie Barth
Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
Date Received: 09/28/2015
Date Analyzed: 10/01/2015
Date Reported: 10/01/2015
Project ID: 15024332

Client Sample Number	**GM-10**				**GM-Out 1**			
Sample Location	**Classroom 10**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-002**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	3	20	2	1/3	10	67	<1	-
ascospores	-	-	-	-	16	1707	7	-
basidiospores	21	560	44	1/13	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	18	480	38	1/26	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	9	60	5	1/1	10	67	<1	-
Penicillium/Aspergillus group	17	113	9	1/17	18	1920	8	-
Pithomyces	3	20	2	1/5	16	107	<1	-
Smuts,Periconia,Myxomycetes	1	7	1	1/88	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	72	1260	~100%	1/20	387	24680	~100%	-

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Attn: Julie Barth
Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
Date Received: 09/28/2015
Date Analyzed: 10/01/2015
Date Reported: 10/01/2015
Project ID: 15024332

Client Sample Number	**GM-15**				**GM-Out 1**			
Sample Location	**Classroom 15**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-003**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	2	13	1	1/128	16	1707	7	-
basidiospores	23	613	68	1/12	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	6	160	18	1/79	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	5	33	4	1/2	10	67	<1	-
Penicillium/Aspergillus group	6	40	4	1/48	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	7	47	5	1/13	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	49	907	~100%	1/27	387	24680	~100%	-

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P.O. Box 286
Woodbine, Maryland 21797
Attn: Julie Barth
Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
Date Received: 09/28/2015
Date Analyzed: 10/01/2015
Date Reported: 10/01/2015
Project ID: 15024332

Client Sample Number	**GM-21**				**GM-Out 1**			
Sample Location	**Classroom 21**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-004**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	-	-	-	-	16	1707	7	-
basidiospores	21	560	69	1/13	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	7	187	23	1/68	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	2	13	2	1/5	10	67	<1	-
Penicillium/Aspergillus group	8	53	7	1/36	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	-	-	-	-	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	38	813	~100%	1/30	387	24680	~100%	-

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Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
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Client Sample Number	**GM-22**				**GM-Out 1**			
Sample Location	**Classroom 22**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-005**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	-	-	-	-	16	1707	7	-
basidiospores	3	80	29	1/91	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	11	73	27	1/173	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	2	13	5	1/5	10	67	<1	-
Penicillium/Aspergillus group	16	107	39	1/18	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	-	-	-	-	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	32	273	~100%	1/90	387	24680	~100%	-

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Client Sample Number	**GM-25**				**GM-Out 1**			
Sample Location	**Classroom 25**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-006**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	-	-	-	-	16	1707	7	-
basidiospores	18	480	70	1/15	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	13	87	13	1/146	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	3	20	3	1/3	10	67	<1	-
Penicillium/Aspergillus group	14	93	14	1/21	18	1920	8	-
Pithomyces	1	7	1	1/16	16	107	<1	-
Smuts,Periconia,Myxomycetes	-	-	-	-	88	587	2	-
	Debris Rating **2**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	49	687	~100%	1/36	387	24680	~100%	-

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Client Sample Number	**GM-26**				**GM-Out 1**			
Sample Location	**Classroom 26**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-007**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	1	7	1	1/10	10	67	<1	-
ascospores	2	13	2	1/128	16	1707	7	-
basidiospores	21	560	72	1/13	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	17	113	15	1/112	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	1	7	1	1/10	10	67	<1	-
Penicillium/Aspergillus group	5	33	4	1/58	18	1920	8	-
Pithomyces	4	27	3	1/4	16	107	<1	-
Smuts,Periconia,Myxomycetes	2	13	2	1/44	88	587	2	-
	Debris Rating **2**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	53	773	~100%	1/32	387	24680	~100%	-

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Project ID: 15024332

Client Sample Number	GM-33				GM-Out 1			
Sample Location	Classroom 33				Outside Near CR 60			
Sample Volume (L)	150				150			
Lab Sample Number	15024332-008				15024332-016			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	4	27	3	1/3	10	67	<1	-
ascospores	1	7	1	1/256	16	1707	7	-
basidiospores	18	480	58	1/15	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	11	73	9	1/173	119	12693	51	-
Curvularia	1	7	1	1/13	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	1	7	1	1/17	17	113	<1	-
hyphal elements	22	147	18	2/1	10	67	<1	-
Penicillium/Aspergillus group	9	60	7	1/32	18	1920	8	-
Pithomyces	1	7	1	1/16	16	107	<1	-
Smuts,Periconia,Myxomycetes	2	13	2	1/44	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	70	827	~100%	1/30	387	24680	~100%	-

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Project ID: 15024332

Client Sample Number	GM-36				GM-Out 1			
Sample Location	Classroom 36 Band				Outside Near CR 60			
Sample Volume (L)	150				150			
Lab Sample Number	15024332-009				15024332-016			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	2	13	1	1/5	10	67	<1	-
ascospores	4	27	1	1/64	16	1707	7	-
basidiospores	20	533	28	1/14	68	7253	29	-
Cercospora	1	7	<1	1/11	11	73	<1	-
Cladosporium	17	453	24	1/28	119	12693	51	-
Curvularia	1	7	<1	1/13	13	87	<1	-
Drechslera/Bipolaris group	1	7	<1	1/1	1	7	<1	-
Epicoccum	1	7	<1	1/17	17	113	<1	-
hyphal elements	10	67	3	1/1	10	67	<1	-
Penicillium/Aspergillus group	8	53	3	1/36	18	1920	8	-
Pithomyces	16	107	6	1/1	16	107	<1	-
Smuts,Periconia,Myxomycetes	24	640	33	1/1	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	105	1920	~100%	1/13	387	24680	~100%	-

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Client Sample Number	**GM-60**				**GM-Out 1**			
Sample Location	**Classroom 60**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-010**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	4	27	2	1/64	16	1707	7	-
basidiospores	24	640	52	1/11	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	17	453	37	1/28	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	3	20	2	1/3	10	67	<1	-
Penicillium/Aspergillus group	13	87	7	1/22	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	1	7	1	1/88	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	62	1233	~100%	1/20	387	24680	~100%	-

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Date Reported: 10/01/2015
Project ID: 15024332

Client Sample Number	**GM-61**				**GM-Out 1**			
Sample Location	**Classroom 61**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-011**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	3	20	6	1/85	16	1707	7	-
basidiospores	10	67	19	1/109	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	11	73	21	1/173	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	-	-	-	-	10	67	<1	-
Penicillium/Aspergillus group	16	107	30	1/18	18	1920	8	-
Pithomyces	1	7	2	1/16	16	107	<1	-
Smuts,Periconia,Myxomycetes	12	80	23	1/7	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	53	353	~100%	1/70	387	24680	~100%	-

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Project ID: 15024332

Client Sample Number	**GM-70**				**GM-Out 1**			
Sample Location	**Classroom 70**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-012**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	-	-	-	-	10	67	<1	-
ascospores	-	-	-	-	16	1707	7	-
basidiospores	38	253	26	1/29	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	92	613	63	1/21	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	-	-	-	-	10	67	<1	-
Penicillium/Aspergillus group	9	60	6	1/32	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	6	40	4	1/15	88	587	2	-
	Debris Rating **2**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	145	967	~100%	1/26	387	24680	~100%	-

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Project ID: 15024332

Client Sample Number	**GM-71**				**GM-Out 1**			
Sample Location	**Classroom 71**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-013**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	5	33	1	1/2	10	67	<1	-
ascospores	3	20	1	1/85	16	1707	7	-
basidiospores	8	53	2	1/136	68	7253	29	-
Cercospora	1	7	<1	1/11	11	73	<1	-
Cladosporium	40	1067	43	1/12	119	12693	51	-
Curvularia	4	27	1	1/3	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	-	-	-	-	17	113	<1	-
hyphal elements	11	73	3	1/1	10	67	<1	-
Penicillium/Aspergillus group	32	213	9	1/9	18	1920	8	-
Pithomyces	12	80	3	1/1	16	107	<1	-
Smuts,Periconia,Myxomycetes	34	907	37	2/1	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	150	2480	~100%	1/10	387	24680	~100%	-

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Project ID: 15024332

Client Sample Number	GM-80				GM-Out 1			
Sample Location	Storage 80				Outside Near CR 60			
Sample Volume (L)	150				150			
Lab Sample Number	15024332-014				15024332-016			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	1	7	1	1/10	10	67	<1	-
ascospores	5	33	3	1/51	16	1707	7	-
basidiospores	75	500	51	1/15	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Chaetomium	1	7	1	-	-	-	-	-
Cladosporium	59	393	40	1/32	119	12693	51	-
Curvularia	-	-	-	-	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	2	13	1	1/9	17	113	<1	-
hyphal elements	-	-	-	-	10	67	<1	-
Penicillium/Aspergillus group	3	20	2	1/96	18	1920	8	-
Pithomyces	-	-	-	-	16	107	<1	-
Smuts,Periconia,Myxomycetes	1	7	1	1/88	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	147	980	~100%	1/25	387	24680	~100%	-

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Client Sample Number	**GM-81**				**GM-Out 1**			
Sample Location	**Classroom 81**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-015**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	2	13	4	1/5	10	67	<1	-
ascospores	1	7	2	1/256	16	1707	7	-
basidiospores	20	133	40	1/54	68	7253	29	-
Cercospora	-	-	-	-	11	73	<1	-
Cladosporium	14	93	28	1/136	119	12693	51	-
Curvularia	2	13	4	1/7	13	87	<1	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Epicoccum	2	13	4	1/9	17	113	<1	-
hyphal elements	2	13	4	1/5	10	67	<1	-
Penicillium/Aspergillus group	6	40	12	1/48	18	1920	8	-
Pithomyces	1	7	2	1/16	16	107	<1	-
Smuts,Periconia,Myxomycetes	-	-	-	-	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	50	333	~100%	1/74	387	24680	~100%	-

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Date Reported: 10/01/2015
Project ID: 15024332

Client Sample Number	**GM-Out 2**				**GM-Out 1**			
Sample Location	**Outside in Courtyard Near CR 18**				**Outside Near CR 60**			
Sample Volume (L)	**150**				**150**			
Lab Sample Number	**15024332-017**				**15024332-016**			
Spore Identification	Raw Ct	spr/m³	% Ttl	In/Out	Raw Ct	spr/m³	% Ttl	In/Out
Alternaria	10	67	<1	1/1	10	67	<1	-
ascospores	10	1067	4	1/2	16	1707	7	-
basidiospores	80	8533	34	1/1	68	7253	29	-
Cercospora	12	80	<1	1/1	11	73	<1	-
Cladosporium	129	13760	55	1/1	119	12693	51	-
Curvularia	2	13	<1	1/7	13	87	<1	-
Drechslera/Bipolaris group	1	7	<1	1/1	1	7	<1	-
Epicoccum	13	87	<1	1/1	17	113	<1	-
hyphal elements	18	120	<1	2/1	10	67	<1	-
Oidium	1	7	<1	-	-	-	-	-
Penicillium/Aspergillus group	10	1067	4	1/2	18	1920	8	-
Pithomyces	5	33	<1	1/3	16	107	<1	-
Smuts,Periconia,Myxomycetes	27	180	1	1/3	88	587	2	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m³				Analytical Sensitivity: **7** spr/m³			
Comments								
Total *See Footnotes	318	25020	~100%	1/1	387	24680	~100%	-

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Suite 100
Sterling, Virginia 20166
(877) 648-9150
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Certificate of Analysis
EMLAP# 102977

Aria Environmental
P.O. Box 286
Woodbine, Maryland 21797
Attn: Julie Barth
Project: **J15-876 GMS Glenwood MS**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 09/24/2015
Date Received: 09/28/2015
Date Analyzed: 10/01/2015
Date Reported: 10/01/2015
Project ID: 15024332

Footnotes and Additional Report Information

Debris Rating Table

1	Minimal (<5%) particular present	Reported values are minimally affected by particulate load.
2	5% to 25% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
3	26% to 75% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
4	75% to 90% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
5	Greater than 90% of the trace occluded with particulate	Quantification not possible due to large negative bias. A new sample should be collected at a shorter time interval or other measures taken to reduce particulate load.

1. Penicillium/Aspergillus group spores are characterized by their small size, round to ovoid shape, being unicellular, and usually colorless to lightly pigmented. There are numerous genera of fungi whose spore morphology is similar to that of the Penicillium/Aspergillus type. Two common examples would be Paecilomyces and Acremonium. Although the majority of spores placed in this group are Penicillium, Aspergillus, or a combination of both. Keep in mind that these are not the only two possibilities.

2. Ascospores are sexually produced fungal spores formed within an ascus. An ascus is a sac-like structure designed to discharge the ascospores into the environment, e.g. Ascobolus.

3. Basidiospores are typically blown indoors from outdoors and rarely have an indoor source. However, in certain situations a high basidiospore count indoors may be indicative of a wood decay problem or wet soil.

4. The Smut, Periconia, Myxomycete group is composed of three different groups whose spores have similar morphologies. Smuts are plant pathogens, Periconia is a relatively uncommon mold indoors, and Myxomycetes are not fungi but slime molds. Although these organisms do not typically proliferate indoors, their spores are potentially allergenic.

5. The colorless group contains colorless spores which were unidentifiable to a specific genus. Examples of this group include Acremonium, Aphanocladium, Beauveria, Chrysosporium, Engyodontium microconidia, yeast, some arthrospores, as well as many others.

6. Hyphae are the vegetative mode of fungi. Hyphal elements are fragments of individual Hyphae. They can break apart and become airborne much like spores and are potentially allergenic. A mass of hyphal elements is termed the mycelium. Hyphae in high concentration may be indicative of colonization.

7. Dash (-) in this report, under raw count column means 'not detected (ND)'; otherwise 'not applicable' (NA).

8. The positive-hole correction factor is a statistical tool which calculates a probable count from the raw count, taking into consideration that multiple particles can impact on the same hole; for this reason the sum of the calculated counts may be less than the positive hole corrected total.

9. Due to rounding totals may not equal 100%.

10. Minimum Reporting Limits (MRL) for BULKS, DUSTS, SWABS, and WATER samples are a calculation based on the sample size and the dilution plate on which the organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias. This means that every genus of fungi or bacteria recovered can be counted on the plate on which it is best represented.

11. If the final quantitative result is corrected for contamination based on the blank, the blank correction is stated in the sample comments section of the report.

12. Analysis conducted on non-viable spore traps is completed using Indoor Environmental Standards Organization (IESO) Standard 2210.

13. The results in this report are related to this project and these samples only.

14. For samples with an air volume of < 100L, the number of significant figures in the result should be considered (2) two. For samples with air volumes between 100-999L, the number of significant figures in the result should considered (3) three. For example, a sample with a result of 55,443 spr/m3 from a 75L sample using significant figures should be considered 55,000. The same result of 55,443 from a 150L sample using significant figures should be considered 55,400 spr/m^3.

15. If the In/Out ratio is greater than 100 times it is indicated >100/1, rather than showing the real value.

Terminology Used in Direct Exam Reporting

Conidiophores are a type of modified hyphae from which spores are born. When seen on a surface sample in moderate to numerous concentrations they may be indicative of fungal growth.

Suzanne S. Blevins, B.S., SM (ASCP)
Laboratory Director

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Page 1 of 2

ELITE
AZ, CO, GA, VA, NJ

NVLAP
NVLAP Lab Code 200860-0 (CO)
NVLAP Lab Code 200829-0 (VA)
NVLAP Lab Code 500097-0 (AZ)

LAB #192683 (CO)
LAB #102977 (GA)
LAB #163063 (VA)
LAB #210229 (AZ)

Aerobiology Client	Aria Environmental, Inc.				
Field Contact	Julie Barth	Collected By/Date: 09/24/15		Relinquished By/Date: 09/25/15	
Reporting Address	PO Box 286, Woodbine, MD 21797	Relinquished By/Date: 09/25/15		Received By/Date: 9/25/15 BN	
Billing Address	SAME	Sampler Type	Andersen____ SAS____	SampleAire____ AeroTrap____	Other Allergenco-D BioCulture____
Phone/Fax	410-549-5774/410-549-4488	PO#/Job#: J15-876 GMS			
Reporting Email (s)	jbarth@ariaenviro.com	Project Name: Glenwood MS			
Routine ●	24 Hour ○ Same Day ○ 4 Hou ○ 2 Hou ○	5 Day (Asbestos Only)	Notes:		
SAMPLING LOCATION ZIP CODE	21738	CC Info:			

	Sample No.	Test Code	Sample Location	Total Volume/Area
1	GM-07	1054	Classroom 7	150 L
2	GM-10	1054	Classroom 10	150 L
3	GM-15	1054	Classroom 15	150 L
4	GM-21	1054	Classroom 21	150 L
5	GM-22	1054	Classroom 22	150 L
6	GM-25	1054	Classroom 25	150 L
7	GM-26	1054	Classroom 26	150 L
8	GM-33	1054	Classroom 33	150 L
9	GM-36	1054	Classroom 36 Band	150 L
10	GM-60	1054	Classroom 60	150 L
11	GM-61	1054	Classroom 61	150 L
12	GM-70	1054	Classroom 70	150 L
13	GM-71	1054	Classroom 71	150 L
14	GM-80	1054	Storage 80	150 L

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	Sewage Screen (E. coli/Enterococcus/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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Lab Use: 1502433

ELITE
AZ, CO, GA, VA, NJ

NVLAP
NVLAP Lab Code 200860-0 (CO)
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Billing Address	SAME	Sampler Type	Andersen___ SAS___	SampleAire___ AeroTrap___	Other Allergenco-D BioCulture___
Phone/Fax	410-549-5774/410-549-4488	PO#/Job#: J15-876 GMS			
Reporting Email (s)	jbarth@ariaenviro.com	Project Name: Glenwood MS			
Routine ◉	24 Hour ○ Same Day ○ 4 Hou ○ 2 Hou ○	5 Day (Asbestos Only)	Notes:		
SAMPLING LOCATION ZIP CODE	21738	CC Info:			

	Sample No.	Test Code	Sample Location	Total Volume/Area
1	GM-81	1054	Classroom 81	150 L
2	GM-Out1	1054	Outside near CR 60	150 L
3	GM-Out2	1054	Outside in Courtyard near CR 18	150 L
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
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