



April 17, 2018

Brent Paul
Lake Oswego School District
4200 SW Douglas Way
Lake Oswego, Oregon 97035

Via email: paulb@loswego.k12.or.us

Regarding: Fungal Particulate Air Monitoring Report for 2018
Oak Creek Elementary School
55 Kingsgate Road, Lake Oswego, Oregon
PBS Project No. 21600.023, Phase 0010

Dear Mr. Paul:

On March 26, 2018, PBS Engineering and Environmental Inc. (PBS) performed fungal particulate air sampling in Oak Creek Elementary School, located at 55 Kingsgate Road in Lake Oswego, Oregon. Sampling was performed at the request of Lake Oswego School District to provide periodic screening of airborne fungal particulate conditions within the school.

PBS performed non-viable fungal particulate air sampling in 15 indoor test areas within the school, and two outdoor samples were collected for analytical comparison purposes. All air sampling was performed during daytime hours. Each sample was collected using Allergenco-D cassettes with a high-volume vacuum pump at a flow rate of 15 liters per minute for five (5) minutes (75 liters total per sample) from approximately 4 feet above floor level. Samples were submitted under chain of custody to Lab/Cor, Inc., of Seattle, Washington, where they were analyzed for non-viable, fungal particulates.

FINDINGS

At the time of this monitoring event, fungal particulate concentrations for all indoor samples collected were lower than concentrations found outdoors. In addition, the predominant types of fungal particulate found indoors are commonly found in outdoor environments and their presence in the indoor samples is not considered unusual.

CONCLUSIONS

Based on the fungal spore concentrations and predominant spore types identified in the samples collected from inside the school, it is PBS' opinion that there is not a significant or unusual airborne fungal particulate condition in the test areas.

LIMITATIONS

This study was limited to the tests and locations as indicated above. The site as a whole may have other environmental concerns that will not be characterized by this study. Further study may be recommended. The findings and conclusions of this work are not scientific certainties but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 503.417.7607 or bob.kleckner@pbsusa.com with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bob Kleckner', with a large, stylized initial 'B'.

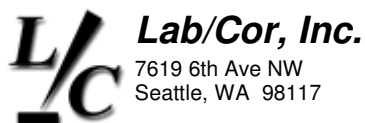
Bob Kleckner
Sr. Project Manager

Attachments: Table 1. Fungal Particulate Air Sample Results
Lab/Cor, Inc., Laboratory Report and Sample Chain of Custody

BK:mo

Table 1. Fungal Particulate Air Sample Results

Sample Number	Sample Location	Total Count	Total Count Breakdown	Fungal Identification
001	Classroom 9	10	10	Basidiospores-like
002	Learning Center	5	5	Basidiospores-like
003	Main Office	5	5	Basidiospores-like
004	Office Hall	20	20	Basidiospores-like
005	Staff Work Room	5	5	Basidiospores-like
006	Classroom 4	25	20 5	Basidiospores-like Myxo./Periconia/Smuts/Rusts
007	Classroom 23	5	5	Basidiospores-like
008	Classroom 26	0	-	No Fungi Observed
009	Classroom 40	10	10	Basidiospores-like
010	Library	10	10	Basidiospores-like
011	Classroom 27	25	20 5	Basidiospores-like Cladosporium
012	Classroom 28	95	95	Basidiospores-like
013	Classroom 29	20	20	Basidiospores-like
014	Music Room	10	10	Basidiospores-like
015	Classroom 33	115	100 15	Basidiospores-like Ascospores, non-specified
016	Outdoor Sample	160	145 15	Basidiospores-like Ascospores, non-specified
017	Outdoor Sample	230	195 25 5 5	Basidiospores-like Ascospores, non-specified Aspergillus/Penicillium-like Ganoderma



Analysis Report Cover Final Report

Phone: (206) 781-0155
<http://www.labcor.net>

A Professional Service Corporation in the Northwest

Job Number: 180260 **SEA**
Client: PBS Engineering + Environmental
Address: 4412 SW Corbett Ave
Portland, OR 97239
Project Name: Oak Creek ES
Project No.: 21600.023 / 0010
PO Number:
Sub Project:
Reference No.:

Report Number: 180260R01
Report Date: 3/30/2018

Enclosed please find results for samples submitted to our laboratory. A list of samples and analyses follows:

Lab/Cor Sample #	Client Sample # and Description	Analysis	Analysis Notes	Date Received:
180260 - S1	001 - Room 9	NV, Air, Fungal ID		3/28/2018
180260 - S2	002 - Learning Center	NV, Air, Fungal ID		3/28/2018
180260 - S3	003 - Main Office	NV, Air, Fungal ID		3/28/2018
180260 - S4	004 - Office Hall	NV, Air, Fungal ID		3/28/2018
180260 - S5	005 - Work Room	NV, Air, Fungal ID		3/28/2018
180260 - S6	006 - Room 4	NV, Air, Fungal ID		3/28/2018
180260 - S7	007 - Room 23	NV, Air, Fungal ID		3/28/2018
180260 - S8	008 - Room 26	NV, Air, Fungal ID	No Fungi Observed.	3/28/2018
180260 - S9	009 - Room 40	NV, Air, Fungal ID		3/28/2018
180260 - S10	010 - Library	NV, Air, Fungal ID		3/28/2018
180260 - S11	011 - Room 27	NV, Air, Fungal ID		3/28/2018
180260 - S12	012 - Room 28	NV, Air, Fungal ID		3/28/2018
180260 - S13	013 - Room 29	NV, Air, Fungal ID		3/28/2018
180260 - S14	014 - Music Room	NV, Air, Fungal ID		3/28/2018
180260 - S15	015 - Room 33	NV, Air, Fungal ID		3/28/2018
180260 - S16	016 - Outdoors	NV, Air, Fungal ID		3/28/2018
180260 - S17	017 - Outdoors	NV, Air, Fungal ID		3/28/2018



Lab/Cor, Inc.

7619 6th Ave NW
Seattle, WA 98117

Final Report

Phone: (206) 781-0155
<http://www.labcor.net>

A Professional Service Corporation in the Northwest

Job Number: 180260 **SEA**
Client: PBS Engineering + Environmental
Project Name: Oak Creek ES

Report Number: 180260R01
Report Date: 3/30/2018

Nonviable Air Air samples follow preparation and analysis techniques outlined in Method 5 of the laboratory SOP; this method is based on guidelines from the Pan-American Aerobiology Association Standardized Protocol and ASTM Method 7391-09. Samples were collected using either an Air-O-Cell, Cyclex-D, Allergenco-D, or M2 Multi-Mold nonviable air sampling cassette. Characteristic morphologies were observed by optical microscopy at a magnification of 600x. For each individual particle type observed, data was reported in particles per cubic meter of air (m3).

Due to various factors that influence uncertainty (media type, particle loading, staining, instrumentation and other variable aspects of the method), only the first two figures reported are considered to be significant. The area analyzed on each sample is 20%.

Disclaimer The results reported relate only to the samples tested or analyzed; the laboratory is not responsible for data collected by personnel who are not affiliated with the laboratory. Results reported in both structures/cm3 and structures/mm2 are dependent on the sample volume and area. These parameters are measured and recorded by non-laboratory personnel and are not covered by the laboratory's accreditation. Interpretation of these results is the sole responsibility of the client.

If further clarification of these results is needed, please call us. Thank you for allowing the staff at Lab/Cor, Inc. the opportunity to provide you with the analytical services.

Sincerely,



Ashley Tonge
Technician/Analyst

Nonviable Air

Job Number: 180260

Client: PBS Engineering + Environmental

Project Name: Oak Creek ES

Project No.: 21600.023 / 0010

Reference No.:

Report Number: 180260R01

Date Received: 3/28/2018

Lab/Cor ID:	S1	S2
Sample No.:	001	002
Description:	Room 9	Learning Center
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascomycetes, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	2	10	133	1	5	67
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	2	10	133	1	5	67

Lab/Cor ID:	S3	S4
Sample No.:	003	004
Description:	Main Office	Office Hall
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascomycetes, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	1	5	67	4	20	267
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	1	5	67	4	20	267

* - Raw Counts per 20% of Sample

** - Total Count per Sample

Nonviable Air

Job Number: 180260

Client: PBS Engineering + Environmental

Project Name: Oak Creek ES

Project No.: 21600.023 / 0010

Reference No.:

Report Number: 180260R01

Date Received: 3/28/2018

Lab/Cor ID:	S5	S6
Sample No.:	005	006
Description:	Work Room	Room 4
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m ³	Raw Count*	Total Count**	Total/m ³
Ascospores, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	1	5	67	4	20	267
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts				1	5	67
Summary Total:	1	5	67	5	25	334

Lab/Cor ID:	S7	S8
Sample No.:	007	008
Description:	Room 23	Room 26
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	3
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		No Fungi Observed.

Fungal Identification	Raw Count*	Total Count**	Total/m ³	Raw Count*	Total Count**	Total/m ³
Ascospores, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	1	5	67			
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	1	5	67			

* - Raw Counts per 20% of Sample

** - Total Count per Sample

Nonviable Air

Job Number: 180260

Client: PBS Engineering + Environmental

Project Name: Oak Creek ES

Project No.: 21600.023 / 0010

Reference No.:

Report Number: 180260R01

Date Received: 3/28/2018

Lab/Cor ID:	S9	S10
Sample No.:	009	010
Description:	Room 40	Library
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascospores, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	2	10	133	2	10	133
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	2	10	133	2	10	133

Lab/Cor ID:	S11	S12
Sample No.:	011	012
Description:	Room 27	Room 28
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascospores, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	4	20	267	19	95	1267
Cladosporium	1	5	67			
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	5	25	334	19	95	1267

* - Raw Counts per 20% of Sample

** - Total Count per Sample

Nonviable Air

Job Number: 180260

Client: PBS Engineering + Environmental

Project Name: Oak Creek ES

Project No.: 21600.023 / 0010

Reference No.:

Report Number: 180260R01

Date Received: 3/28/2018

Lab/Cor ID:	S13	S14
Sample No.:	013	014
Description:	Room 29	Music Room
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascospores, non-specified						
Aspergillus/ Penicillium-like						
Basidiospores - like	4	20	267	2	10	133
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	4	20	267	2	10	133

Lab/Cor ID:	S15	S16
Sample No.:	015	016
Description:	Room 33	Outdoors
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 3/30/2018	AT - 3/30/2018
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascospores, non-specified	3	15	200	3	15	200
Aspergillus/ Penicillium-like						
Basidiospores - like	20	100	1333	29	145	1933
Cladosporium						
Ganoderma						
Myxo./Periconia/Smuts/Rusts						
Summary Total:	23	115	1533	32	160	2133

* - Raw Counts per 20% of Sample

** - Total Count per Sample

Nonviable Air

Job Number: 180260

Client: PBS Engineering + Environmental

Project Name: Oak Creek ES

Project No.: 21600.023 / 0010

Reference No.:

Report Number: 180260R01

Date Received: 3/28/2018

Lab/Cor ID:	S17	
Sample No.:	017	
Description:	Outdoors	
Sample Measure:	75 L	
Media Type:	Fungal-AllergencoD	
Analyst - Analysis Date:	AT - 3/30/2018	
MRL:	67	
Scope - Magnification:	Olympus BHT-BH2 - 600	
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m³	Raw Count*	Total Count**	Total/m³
Ascomycetes, non-specified	5	25	333			
Aspergillus/ Penicillium-like	1	5	67			
Basidiospores - like	39	195	2600			
Cladosporium						
Ganoderma	1	5	67			
Myxo./Periconia/Smuts/Rusts						
Summary Total:	46	230	3067			

Reviewed by:

[illegible]

Ashley Tonge

Technician/Analyst

180360

1/2

Lab/Cor, Inc7619 6th Ave NW
Seattle, WA 98117Office (206) 781-0155
Fax (206) 789-8424mail@labcor.net
www.labcor.net

pbsusa.com

Client:**Address:****City, Sta****Contact:****Phone:****Email:****Other Int****Wayne Sehnman**Industrial Hygienist / Project Manager
wayne.sehnman@pbsusa.com

503.417.7598 DIRECT | 503.313.9061 MOBILE

PBS Engineering and Environmental Inc.

4412 SW Corbett Avenue

Portland, OR 97239

503.248.1939 MAIN

Analysis Type:☒ Nonviable Options:
Fungal ID

Fungal & Particulate ID

Particulate ID

Quantitative Analysis

(Total Count)

Qualitative Analysis

(Relative Abundance)

Viable Options:

Complete Analysis

Genera Only Stachy Only

Turnaround Time:

6 hr RUSH*

24 hours*

48 hours

3 days

(NV Std)

5 days

Viable

(7-10 days)

Project Name: DAK CREEKESProject Number: 21000.023/0010 P.O. Number: _____

Sample #	Sample Description	Sample Information						Sampling Information										
		Sample Type			Media Type			Sample Date	Sample Time		Sample Flow Rate		Total Volume / Area					
		Air	Swab	Bulk	Dust	Tape	MEA		Stachy	Other	On	Off		Start	End	Avg		
001	Room 9	X																
002	LABORATORY CENTER	X																
003	MAIN OFFICE	X																
004	OFFICE HALL	X																
005	WORK ROOM	X																
006	Room 4	X																
007	Room 23	X																
008	Room 26	X																
009	Room 40	X																
010	LIBRARY	X																

Reviewed by: At 3/30/18 At 3/30/18
 Results Released: At 3/30/18
 Fax USPS Email
 Invoice Released: USPS
 Fax USPS Email

By signing below you are agreeing to comply with Lab/Cor's Requests, Tenders and Contracts.

Relinquished by: Wayne Sehnman Date: 3/27/18 Time: 13:00Received by: Wayne Sehnman Date: 3/27/18 Time: 12:04

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

* Call ahead for TATs of 24hrs or less

$$\frac{2}{2}$$

C:\Documents\OCD\Master Documents\Chain of Custody\CURRENT CHAINS\Fungal Particulate Chain of Custody Record V06.doc