

Scientific Air Solutions



airPHX Companies
1311-A Dolley Madison Blvd.
McLean, VA 22101

August 5, 2018

Pre and In-Treatment Air and Surface Report – Yoga [REDACTED]

A. Summary – Air Samples

Pre and in-treatment air samples results given below.

Sample Date	Treatment	Number of samples	Location	Average (cfu/m ³)	Range	Standard Deviation	Percent Decrease
06/19/18	Pre	4	Hot Room	1,083	967/1,267	111.8	-
07/19/18	In			42	0/67	27.6	96.1
06/19/18	Pre	2	Lobby	617	533/700	83.3	-
07/19/18	In			67	33/100	33.3	89.1
06/19/18	Pre	3	Exterior	2,878	2,567/3,200	258.7	-
07/19/18	In			2,867	2,700/3,100	170.0	-0.4

Background

All air samples were taken via the MB-2 air sampler, 30 liters per sample throughout the various locations given above with results normalized to colony forming units per cubic meter of air (CFU/m³).

Given below are the airborne organisms for [REDACTED] locations for this **pre-treatment** sampling, excluding the outside samples.

Species	Raw Count	Species	Raw Count
<i>Penicillium, aspergillus types</i>	1,050	<i>Cladosporium sphaerospermum</i>	642
<i>Aspergillus fumigatus</i>	910	<i>Absidia, spp</i>	510
<i>Penicillium purpurogenum</i>	875	<i>Mortierella, spp</i>	470
<i>Penicillium brevicompactum</i>	790	<i>Basidiospores spp</i>	320

Noted below are the airborne organisms found in the above locations for this **in-treatment** sampling, excluding the outside samples.

Species	Raw Count	Species	Raw Count
<i>Penicillium, aspergillus types</i>	113	<i>Cladosporium sphaerospermum</i>	< 10
<i>Aspergillus fumigatus</i>	87	<i>Absidia, spp</i>	< 10
<i>Penicillium purpurogenum</i>	65	<i>Mortierella, spp</i>	< 10
<i>Penicillium brevicompactum</i>	35	<i>Basidiospores spp</i>	< 10

07/19/18 - In-treatment bioburden in the above rooms is now < 100 cfu/m³ is considered **clean and acceptable** with the Hot Room and Lobby showing a **96.1%** and **89.1% decrease**, respectively.

06/19/18 - Pre-treatment bioburden in the above rooms are > 300 cfu/m³, which is not acceptable and needs corrective action.

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Observations

Outside air, samples ranged from **2,700** to **3,100 cfu/m³** and continues to show that a significant amount of the bioburden is coming from the outside air.

Target Air Quality

Air quality scale for workplaces, public buildings, schools, and homes are as follows:

- < 100 cfu/m³ is considered **clean and acceptable**.
- 100 to 300 cfu/m³ is **marginal**.
- > 300 cfu/m³ is **not acceptable** and needs corrective action.

In most cases, air quality < 100 cfu/m³ has shown a decrease in the overall bioburden and odors.

B. Summary – Surface Contact Swabs

Pre-treatment surface (swab) samples results given below.

Sample Date	Treatment	Number of samples	Location	Average (cfu/cm ²)	Range	Standard Deviation	Percent Decrease
06/19/18	Pre	3	Hot Room	63	45/88	18.2	-
07/19/18	In			0.4	0.4/0.6	0.08	99.4
06/19/18	Pre	1	Lobby	105	105/105	0.0	-
07/19/18	In			0.9	0.9/0.9	-	99.1
06/19/18	Pre	1	Negative Control	0	0/0	-	-
07/19/18	In			0	0/0	-	-

07-19-18 - In-treatment contact swab results in all the various locations are now < 5 cfu/cm² which is considered clean and acceptable with the Hot Room and Lobby showing a **99.4%** and **99.1% reduction**, respectively.

06-19-18 - Pre-treatment contact swab results in all the various locations are > 10 cfu/cm², which is not acceptable and needs corrective action.

Target Contact Surface Quality

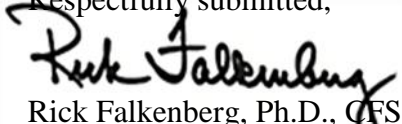
Contact surface quality scale for workplaces, public buildings, schools, and homes are as follows:

- < 45 cfu total or < 1.67-log, or < 5 cfu/cm² is considered **clean and acceptable**.
- 140 to 260 cfu total or 2.15 to 2.41-log, or 5 to 10 cfu/cm² is considered **marginal**.
- > 260 cfu total or > 2.41-log, or > 10 cfu/cm² is considered **not acceptable** and needs corrective action.

In most cases, air quality < 5 cfu/cm² has shown a decrease in the overall bioburden and odors.

Please contact me if there are questions or if further information is needed.

Respectfully submitted,


Rick Falkenberg, Ph.D., CFS
Senior Principal Scientist

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Table #1
Yoga [REDACTED]
07/19/18 In-treatment Air Sample Results - CFU/m³

Yoga [REDACTED] In-treatment 07/16/18						
Plate Lot No.	Air Sample Location	Air Sample Location	Liters of Air	Raw Count	Corrected Count	CFU/m ³
1033	Ctrl	Unopened	0	0	0	0
1037	H	1	30	2	2	67
1041	H	2	30	1	1	33
1045	H	3	30	0	0	0
1049	H	4	30	2	2	67
1053	L	1	30	3	3	100
1057	L	2	30	1	1	33
417	Pre	EXT	30	70	84	2,800
1065	Pre	EXT	30	68	81	2,700
421	Pre	EXT	30	76	93	3,100

Avg 42 High 67
Low 0 SD 27.6

Avg 67 High 100
Low 33 SD 33.3

Avg 2,867 High 3,100
Low 2,700 SD 170.0

Total Adjusted Raw Count 9
Total CFU/m³ 300

Table #1
Yoga [REDACTED]
06/19/18 Pre-treatment Air Sample Results - CFU/m³

Yoga [REDACTED] Pre-treatment 06/16/18						
Plate Lot No.	Air Sample Location	Air Sample Location	Liters of Air	Raw Count	Corrected Count	CFU/m ³
3196	Ctrl	Unopened	0	0	0	0
3195	H	1	30	27	29	967
3194	H	2	30	30	32	1,067
3193	H	3	30	35	38	1,267
3192	H	4	30	29	31	1,033
3191	L	1	30	15	16	533
3190	L	2	30	20	21	700
3189	Pre	EXT	30	65	77	2,567
3188	Pre	EXT	30	71	86	2,867
3187	Pre	EXT	30	78	96	3,200

Avg 1,083 High 1,267
Low 967 SD 111.8

Avg 617 High 700
Low 533 SD 83.3

Avg 2,878 High 3,200
Low 2,567 SD 258.7

Total Adjusted Raw Count 167
Total CFU/m³ 5,567

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Table #2
Yoga [REDACTED]
07/19/18 In-treatment Surface Sample Results – CFU/cm²

Yoga [REDACTED] In-treatment 07/16/18					
Room	Swab Number	Surface Swab Sample Location	10x10x10 cm	Raw Count	CFU/cm ²
N/A	CTRL	Control swab	0	0	0
H	1	Hot Room - Floor	10x10x10	40	0
H	2	Hot Room - Floor	10x10x10	55	1
H	3	Hot Room Bar	10x10x10	35	0
L	4	Lobby Desk	10x10x10	85	0.9

Avg 0.4 Max 0.6
Min 0.4 SD 0.08

Total Adjusted Raw Count 215

Total CFU/cm² 2

Table #2
Yoga [REDACTED]
06/19/18 Pre-treatment Surface Sample Results – CFU/cm²

Yoga [REDACTED] Pre-treatment 06/16/18					
Room	Swab Number	Surface Swab Sample Location	10x10x10 cm	Raw Count	CFU/cm ²
N/A	CTRL	Control swab	0	0	0
H	1	Hot Room - Floor	10x10x10	5,600	56
H	2	Hot Room - Floor	10x10x10	8,800	88
H	3	Hot Room Bar	10x10x10	4,500	45
L	4	Lobby Desk	10x10x10	10,500	105

Avg 63 Max 88
Min 45 SD 18.2

Total Adjusted Raw Count 29,400

Total CFU/cm² 294



Table #3
Yoga [REDACTED]
Air Sample Pictures

07/19/18 In-treatment





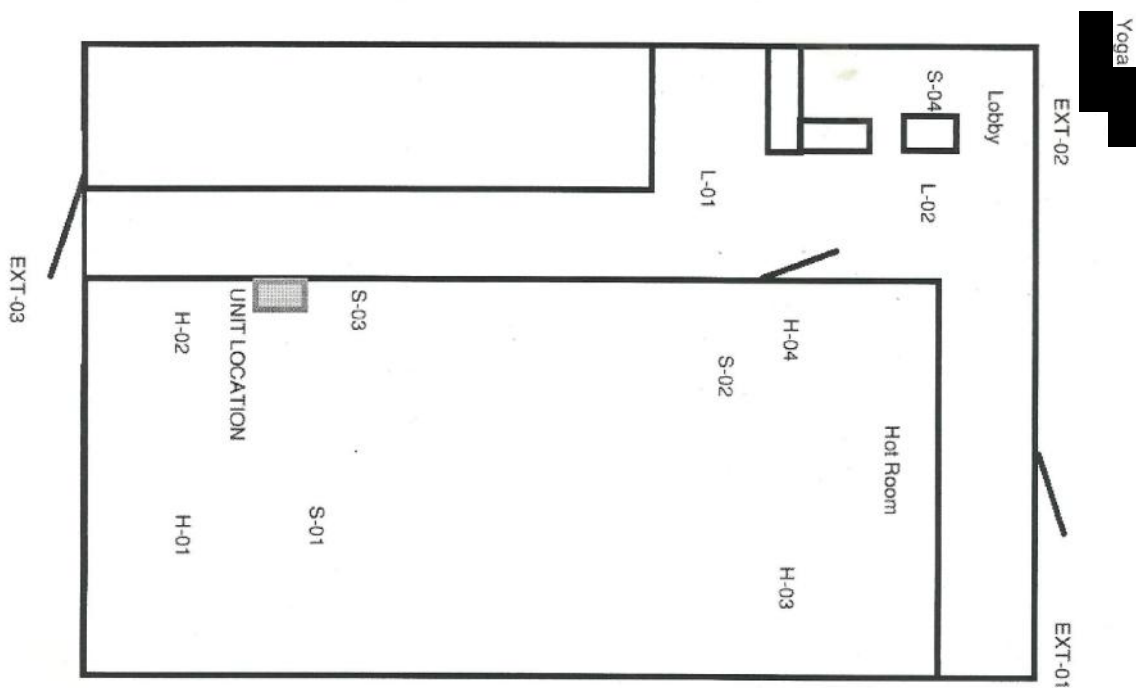
Table #3
Yoga [REDACTED]
Air Sample Pictures

06/19/18 Pre-treatment





Table #4
Yoga [REDACTED]
Air Sample Location Map



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