MEMORANDUM

Date: November 4, 2004

To: Mr. Michael Davis, Building Manager II
Department of General Services – Real Estate Services Division
Building and Property Management Branch
450 N Street, Suite 1200, Sacramento, CA 95818

From: Larry J. Bellani, CIH
Department of General Services – Real Estate Services Division
Building and Property Management Branch
Environmental Safety Health and Operations Program
1304 O Street, Suite 300, Sacramento, CA 95814-5906

Subject: **INDOOR STATIONARY AIRBORNE BIOAEROSOLS AIR MONITORING RESULTS AT THE BOARD OF EQUALIZATION BUILDING, 450 N STREET, SACRAMENTO, CA 95814**

On October 27 & 28, 2004, indoor stationary air monitoring for mold spores was conducted at the Board of Equalization Building, Floor nos. 24, 22, 11, 3 & 2. This evaluation was requested by Mr. Dade Powers, Chief of Administrative Support Division for the Board of Equalization.

As requested, indoor air sampling for bioaerosols was performed to characterize the presence of mold spores within the occupied spaces. It is important to note that standards do not currently exist for the indoor airborne bioaerosol contaminants that were analyzed for. The results are used to identify "potential" problems and are not compared to any legislated criteria.

The attached detailed stationary area indoor airborne bioaerosols air monitoring results indicate relatively typical and normal constituents of mold spores. All of the indoor air monitoring results are considered to be very low when compared to the outdoor comparison air sample results. Low or normal mold spore concentrations were observed and are considered typical, and the types identified are not unusual, and also not likely related to indoor air quality concerns.

These air sample results are considered typical of modern occupied office buildings with filtered ventilation systems and there are no uncommon findings, which suggest a likely causal agent that could be associated with indoor air quality complaints.

CONCLUSIONS AND RECOMMENDATIONS

All of the results support that this indoor air evaluation was unable to identify a likely causal agent that could be associated with indoor air quality concerns. No unusual findings were made with relatively low airborne levels of indoor airborne mold spores that are consistent with what is normally observed in modern occupied buildings.

This concludes our report addressing the indoor stationary airborne bioaerosols air monitoring evaluation that was performed for the Board of Equalization. No recommendations are indicated at this time. Please contact the BPM - ESHOP at 916-552-9037 if you have any questions or require any additional information.

LJB/boeiaq2

Attachments (6)

cc: Vincent Paul, Manager of BPM - ESHOP
Annette Salazar, Assistant Chief for BPM

BOARD OF EQUALIZATION BUILDI.., 450 N STREET, SACRAMENTO, CA RD FLOOR
SUBJECT: STATIONARY AREA INDOOR AIRBORNE BIOAEROSOL AIR MONITORING RESULTS

Stationary area indoor airborne bioaerosol air sampling was performed to characterize the presence of mold spores within the occupied spaces. It is important to note that standards for indoor airborne bioaerosol contaminants listed in the table below do not currently exist. The results are used to identify "potential" problems and are not compared to any legislated criteria.

The below listed detailed analytical results indicate relatively typical and normal constituents of indoor airborne bioaerosols. Low levels of mold spores were observed. The concentrations of mold spores are considered typical and the types identified are not unusual, and also not likely related to indoor air quality concerns. All of the indoor air monitoring results are considered to be very low when compared to the outdoor comparison air sample results.

These air sample results are considered typical of modern occupied office buildings with filtered ventilation systems and there are no uncommon findings that could suggest a likely causal agent, which could be associated with indoor air quality concerns.

Detailed air monitoring results follow:

DATE / TIME SAMPLED	10/28/04-Th. 1018-1023 Hours	10/28/04-Th. 1026-1031 Hours	10/28/04-Th. 1034-1039 Hours	10/28/04-Th. 1046-1051 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 3rd Floor; South curtain wall; West side; Middle of aisleway; routine operations.	BOE - 3rd Floor; South curtain wall; East corner; Middle of aisleway in Room #308; routine operations.	BOE - 3rd Floor; South curtain wall; Middle of aisleway in Room #307; routine operations.	BOE - 3rd Floor; West wall; open office cubicle #55B; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**146**	**53**	**79**	**173**
Ascospores		**ND	13	**ND
Basidiospores	133	27	53	160
Cladosporium	**ND	**ND	**ND	13
Penicillium / Aspergillus	13	13	13	**ND
Rusts	**ND	**ND	**ND	**ND
Pollen	**ND	13	**ND	**ND

DATE / TIME SAMPLED	10/28/04-Th. 1052-1057 Hours	10/28/04-Th. 1057-1102 Hours	10/28/04-Th. 1110-1115 Hours	11/8/04-M 0907-0912 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 3rd Floor; West wall; Conference Room 325; routine operations.	BOE - 3rd Floor; North wall; open office cubicle #35; routine operations.	BOE - 3rd Floor; East wall open office cubicle #135; routine operations.	BOE - Roof top; outdoor compari-son sample; routine operations
TOTAL MOLD SPORES (*Cts/m³)	**240**	**26**	**13**	**1,627**
Ascospores	**ND	**ND	**ND	**ND
Basidiospores	240	13	13	1,480
Chaetomium	**ND	**ND	**ND	**ND
Cladosporium	**ND	13	**ND	80
Diplocladiella	**ND	**ND	**ND	**ND
Penicillium / Aspergillus	**ND	**ND	**ND	67
Pollen	**ND	**ND	**ND	**ND
Rusts	**ND	**ND	**ND	**ND
Torula	**ND	**ND	**ND	**ND

* Counts Per Cubic Meter Of Air
** Not Detected; Below The Analytical Limit Of Detection

BOARD OF EQUALIZATION BUILD. ., 450 N STREET, SACRAMENTO, C - 11TH FLOOR
SUBJECT: STATIONARY AREA INDOOR AIRBORNE BIOAEROSOL AIR MONITORING RESULTS

Stationary area indoor airborne bioaerosol air sampling was performed to characterize the presence of mold spores within the occupied spaces. It is important to note that standards for indoor airborne bioaerosol contaminants listed in the table below do not currently exist. The results are used to identify "potential" problems and are not compared to any legislated criteria.

The below listed detailed analytical results indicate relatively typical and normal constituents of indoor airborne bioaerosols. Low levels of mold spores and rusts were observed. The concentrations of mold spores are considered typical and the types identified are not unusual, and also not likely related to indoor air quality concerns. All of the indoor air monitoring results are considered to be very low when compared to the outdoor comparison air sample results.

These air sample results are considered typical of modern occupied office buildings with filtered ventilation systems and there are no uncommon findings that could suggest a likely causal agent, which could be associated with indoor air quality concerns.

Detailed air monitoring results follow:

DATE / TIME SAMPLED	10/27/04-W 1209-1214 Hours	10/27/04-W 1212-1217 Hours	10/27/04-W 1215-1220 Hours	10/27/04-W 1221-1226 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 11th Floor; South curtain wall; West corner - open file storage area routine operations.	BOE - 11th Floor; South curtain wall; middle - open file storage area; routine operations.	BOE - 11th Floor; South curtain wall; East corner - open file storage area; routine operations.	BOE - 11th Floor; North wall; middle - open file storage area; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**52**	****ND**	****ND**	****ND**
Alternaria	13	**ND	**ND	**ND
Basidiospores	**ND	**ND	**ND	**ND
Cladosporium	13	**ND	**ND	**ND
Penicillium / Aspergillus	13	**ND	**ND	**ND
Rusts	13	**ND	**ND	**ND
Pollen	**ND	**ND	**ND	**ND

DATE / TIME SAMPLED	10/27/04-W 1226-1231 Hours	10/27/04-W 1234-1239 Hours	7/8/04-Th. 1239-1244 Hours	11/8/04-M 0907-0912 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 11th Floor; SE wall; corner office cubicle near column K-18; routine operations.	BOE - 11th Floor; East wall; open office cubicle #5; routine operations.	BOE - 11th Floor; NE wall; open office cubicle #61; routine operations.	BOE - Roof top; outdoor compari-son sample; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**13**	****ND**	**13**	**1,627**
Ascospores	**ND	**ND	**ND	**ND
Basidiospores	**ND	**ND	13	1,480
Chaetomium	**ND	**ND	**ND	**ND
Cladosporium	13	**ND	**ND	80
Penicillium / Aspergillus	**ND	**ND	**ND	**ND
Pollen	**ND	**ND	**ND	67
Rusts	**ND	**ND	**ND	**ND
Torula	**ND	**ND	**ND	**ND

* Counts Per Cubic Meter Of Air
** Not Detected; Below The Analytical Limit Of Detection

BOARD OF EQUALIZATION BUILD..G, 450 N STREET, SACRAMENTO, C - 22ND FLOOR
SUBJECT: STATIONARY AREA INDOOR AIRBORNE BIOAEROSOL AIR MONITORING RESULTS

Stationary area indoor airborne bioaerosol air sampling was performed to characterize the presence of mold spores within the occupied spaces. It is important to note that standards for indoor airborne bioaerosol contaminants listed in the table below do not currently exist. The results are used to identify "potential" problems and are not compared to any legislated criteria.

The below listed detailed analytical results indicate relatively typical and normal constituents of indoor airborne bioaerosols. Low levels of mold spores and pollen were observed. The concentrations of mold spores are considered typical and the types identified are not unusual, and also not likely related to indoor air quality concerns. All of the indoor air monitoring results are considered to be very low when compared to the outdoor comparison air sample results.

These air sample results are considered typical of modern occupied office buildings with filtered ventilation systems and there are no uncommon findings that could suggest a likely causal agent, which could be associated with indoor air quality concerns.

Detailed air monitoring results follow:

DATE / TIME SAMPLED	10/27/04-W 1126-1131 Hours	10/27/04-W 1130-1135 Hours	10/27/04-W 1134-1139 Hours	10/27/04-W 1137-1142 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 22nd Floor; South curtain wall; SW corner open office cubicle #73; routine operations.	BOE - 22nd Floor; South curtain wall; middle open office cubicle #78; routine operations.	BOE - 22nd Floor; South curtain wall; SE corner open office cubicle #85; routine operations.	BOE - 22nd Floor; East wall; open office cubicle #97; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	****ND**	****ND**	**13**	**40**
Ascospores	**ND	**ND	**ND	13
Basidiospores	**ND	**ND	**ND	13
Cladosporium	**ND	**ND	**ND	**ND
Penicillium / Aspergillus	**ND	**ND	13	13
Rusts	**ND	**ND	**ND	**ND
Pollen	**ND	**ND	**ND	**ND

DATE / TIME SAMPLED	10/27/04-W 1145-1151-Hours	10/27/04-W 1151-1156 Hours	10/27/04-W 1158-1203 Hours	11/8/04-M 0907-0912 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 22nd Floor; SE wall; open office cubicle #95; routine operations.	BOE - 22nd Floor; East wall; office no. 2234; routine operations.	BOE - 22nd Floor; North wall; open office cubicle #60; routine operations.	BOE - Roof top; outdoor compari-son sample; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**13**	**13**	****ND**	**1,627**
Ascospores	**ND	**ND	**ND	**ND
Basidiospores	13	**ND	**ND	1,480
Chaetomium	**ND	**ND	**ND	**ND
Cladosporium	**ND	13	**ND	80
Penicillium / Aspergillus	**ND	**ND	**ND	67
Pollen	**ND	**ND	**ND	**ND
Rusts	**ND	**ND	**ND	**ND
Torula	**ND	**ND	**ND	**ND

* Counts Per Cubic Meter Of Air
** Not Detected; Below The Analytical Limit Of Detection

BOARD OF EQUALIZATION BUILD. .G, 450 N STREET, SACRAMENTO, (- 24TH FLOOR
SUBJECT: STATIONARY AREA INDOOR AIRBORNE BIOAEROSOL AIR MONITORING RESULTS

Stationary area indoor airborne bioaerosol air sampling was performed to characterize the presence of mold spores within the occupied spaces. It is important to note that standards for indoor airborne bioaerosol contaminants listed in the table below do not currently exist. The results are used to identify "potential" problems and are not compared to any legislated criteria.

The below listed detailed analytical results indicate relatively typical and normal constituents of indoor airborne bioaerosols. Low levels of mold spores, pollen & rusts were observed. The concentrations of mold spores are considered typical and the types identified are not unusual, and also not likely related to indoor air quality concerns. All of the indoor air monitoring results are considered to be very low when compared to the outdoor comparison air sample results.

These air sample results are considered typical of modern occupied office buildings with filtered ventilation systems and there are no uncommon findings that could suggest a likely causal agent, which could be associated with indoor air quality concerns.

Detailed air monitoring results follow:

DATE / TIME SAMPLED	10/27/04-W 1041-1046 Hours	10/27/04-W 1048-1053 Hours	10/27/04-W 1052-1057 Hours	10/27/04-W 1057-1102 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 24th Floor; South curtain wall; Hallway near office #2417; routine operations.	BOE - 24th Floor; East wall; Hallway near office #2446; routine operations.	BOE - 24th Floor; Library; Middle aisleway; routine operations.	BOE - 24th Floor; NW wall; open office cubicle #21;- routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**120**	**40**	**13**	**26**
Ascospores	13	**ND	**ND	**ND
Basidiospores	40	40	13	13
Cladosporium	27	**ND	**ND	13
Penicillium / Aspergillus	40	**ND	**ND	**ND
Pollen	**ND	**ND	**ND	**ND
Rusts	**ND	**ND	**ND	**ND

DATE / TIME SAMPLED	10/27/04-W 1102-1107 Hours	10/27/04-W 1110-1115 Hours	10/27/04-W 1608-1613 Hours	11/8/04-M 0907-0912 Hours
AREA SAMPLE LOCATION / ACTIVITY	BOE - 24th Floor; North wall; office #2434; routine operations.	BOE - 24th Floor; NE wall; open office cubicle #7; routine operations.	BOE - 24th Floor; West wall; open office cubicle 2442; routine operations.	BOE - Roof top; outdoor compari-son sample; routine operations.
TOTAL MOLD SPORES (*Cts/m³)	**13**	****ND**	**13**	**1,627**
Ascospores	**ND	**ND	**ND	**ND
Basidiospores	13	**ND	**ND	1,480
Chaetomium	**ND	**ND	**ND	**ND
Cladosporium	**ND	**ND	13	80
Penicillium / Aspergillus	**ND	**ND	**ND	67
Pollen	**ND	**ND	**ND	**ND
Rusts	**ND	**ND	**ND	**ND
Torula	**ND	**ND	**ND	**ND

* Counts Per Cubic Meter Of Air
** Not Detected; Below The Analytical Limit Of Detection