BioMax Environmental
Environmental Consulting and Industrial Hygiene Services

January 25th, 2008

Mr. Lane Webb
Wilson, Elser, Moskowitz, Edelman & Dicker LLP
655 West Broadway, Suite 900
San Diego, CA 92101

Mitigation Procedures for Floor 23 East Side
Department of General Services Board of Equalization Building
450 N. Street
Sacramento, California

Dear Mr. Webb,

As per your request, BioMax Environmental, LLC (BioMax) is pleased to provide you with the following recommendations for procedures pertaining to the microbial abatement activities proposed for the 23rd Floor Eastern side of 450 N. Street, Sacramento, California (subject building). BioMax understands that these procedures have been requested by your offices, at the specific direction of the Department of General Services, in an effort to establish the necessary criteria under which the forthcoming microbial mitigative efforts will be planned and performed within the areas noted below which are currently vacated by the Board of Equalization (BOE) staff. The applicable areas pertaining to these procedures are identified as the offices and administrative areas located along the eastern side of the subject building running from Rooms 2339 (southeastern corner office) and which includes 2338, 2337, 2336, 2335, 2334, 2333 and Room 2332 (northeastern corner office). A detailed site map will be maintained by the site mitigation contractor, JLS, and will be available for review by DGS and BOE representatives within the construction site offices located on the 23rd floor in office 2311.

As such, these recommended mitigation procedures are intended as a means of setting preliminary performance criteria goals during the onset of this mitigative effort. Pursuant to an ongoing agreement between the BOE and DGS, these recommended procedures will be reviewed, commented upon and approved by BOE's representative Industrial Hygienist, Hygientech, prior to implementation. Any revisions to these recommended procedures and/or significant deviations performed by the selected mitigation contractor with the procedures noted herein shall only be performed under the review, guidance, and approval of the Project CIH, DGS and BOE representatives.

Hence, BioMax proposes the following mitigative procedures for consideration, review, and appropriate implementation at the direction and approval of the Department of General Services:

1. **Establishment of Containment System** - Prior to the performance of microbial mitigative measures, BioMax recommends that the selected microbial abatement contractor design and erect critical containment barriers which isolates the affected interior areas located within the eastern leg of the subject building as previously identified. The selected contractor must only utilize workers who are specifically trained in the field of microbial abatement and containment techniques as well as maintain demonstrated proficiency in the establishment and use of appropriate barriers, personal protective equipment, abatement techniques and methods in the removal and decontamination of microbial affected and impacted materials. Critical containment barriers shall be established at all physical entries leading to the noted 23rd floor containment areas. Isolation of the elevator lobby areas (excluding the freight elevator) shall also be maintained through the use of a critical barrier system as a secondary measure in the unlikely event that the primary containment systems are compromised and/or proper negative pressure is temporarily not maintained. As an additional precautionary measure, HEPA filtered air scrubbing equipment shall be established and maintained within the elevator lobby area for the duration of the forthcoming microbial mitigative effort.

2. **Delineation of Containment System** - Due to the presence of known and suspected microbial contamination currently present on various building material surfaces current located within the subject area, the selected contractor shall be directed to install a fully enclosed negative pressure environmental containment system designed to isolate the water damaged and mold affected materials within the identified areas of the eastern side of the 23rd floor prior to and during all forthcoming destructive inspection and/or testing, physical removal, and subsequent treatment of the impacted materials. These containment systems shall be designed for the specific purposes of containing and controlling possible fugitive emissions of airborne fungal spore contaminants and particulates generated during all forthcoming mitigative activities within the identified containment. Once established, all containment systems shall remain in place and fully functional on a 7 day/24 hour basis until the noted areas of concern have been appropriately mitigated, re-inspected, tested, and ultimately deemed acceptable for reconstruction and forthcoming reoccupancy as noted below. Based on our current understanding, preliminary containment barriers shall be generally established along the office corridor from rooms 2339 to 2332 as indicated on the previously noted 23rd floor site map. Specific locations and delineations of exact containment systems and barriers shall be based upon site specific physical requirements and determined on an area and material specific basis. Current floor site maps shall be maintained by JLS and available for review within the site construction offices (Room 2311) upon specific request. BioMax is prepared to provide your selected mitigation contractor with additional and ongoing consultation, information, and detailed direction pertaining to the establishment, location, and maintenance of appropriate critical containment barriers, as necessary.

3. **Ceiling Containment System** - The containment system shall be designed in a manner wherein the existing work area ceiling is sealed in a critical barrier system designed to isolate the current ceiling tile materials and ceiling plenum areas from the working areas

of the established containment system. As such, containment systems shall be erected from floor to (and including) ceiling level materials and will include the establishment of a functional plastic barrier along the lower (workplace) side of the current acoustic ceiling tile materials thus isolating the ceiling plenum from the active working areas within the established containment.

4. **Containment Construction** - All critical containment systems shall be constructed of plastic and/or otherwise airtight materials so as to create an adequate negative pressure system within the noted areas of concern. Negative air pressure shall be maintained within all critical areas (for the duration of this scope of work) utilizing High Efficiency Particulate Aerosol (HEPA) filtered "negative air machine" equipment vented to the outside environment whenever practicable. An adequate supply of filtered intake air shall also be established to allow an adequate supply of "clean" HEPA filtered make-up air into the critical containment. As a performance criteria goal, negative air pressure will be established and maintained within the established containment system areas at a performance goal level of -0.02 inches of water pressure on a 24 hour basis for the duration of mitigative activities, whenever possible and feasible. At the direction of DGS, all inspection and containment system assessment activities may also include other third party professional environmental consultant review, as necessary. Following the satisfactory implementation and review of such containment systems, and upon DGS approval, microbial mitigative measures may proceed in accordance with project specific mitigative procedures established herein. Wherever possible, clear translucent plastic observation windows shall also be placed on the critical containment barrier system within direct sight of the affected work areas for the purposes of facilitating non-entry inspection during the performance of prescribed mitigative measures

5. **Posting and Containment Pressure Monitoring** - During the performance the forthcoming mitigative measures, appropriate signage and warnings must be posted on the exterior of containment entrances to record entry access and to preclude uninformed access from unauthorized personnel. For these purposes, a sign-in log shall also be maintained at the entrance of the 23rd floor immediately outside the freight elevator and utilized by all personnel who enter the controlled areas anywhere on the 23rd floor. Data logging monitoring equipment employed to record pressure differentials on a 24-hour basis shall be used for the duration of this project where functional critical barriers are established and in use. Such pressure monitoring devices shall utilize paper strip chart records so as to allow routine and regular inspection of pressure readings by DGS project management personnel. The mitigation contractor shall maintain these chart records and will provide a weekly summary of continuous monitoring levels for the duration of the project.

6. **Entry Chambers** - A series of similar plastic and/or otherwise impermeable zippered entry chambers shall be erected at the entrance of each containment system area for the purpose of establishing controlled worker entrance/exit points. Controlled areas shall also be established outside of the working area so as to provide workers with clean personal protective equipment (PPE) storage, donning, and decontamination areas.

HEPA filtered vacuum equipment capable of the effective removal of particulate contaminants from tools and personal protective equipment shall be placed and maintained within each of the zippered entry/exit chambers closest to the working area.

7. **HVAC, Penetrations, and Fire Suppression Systems** - All Heating Ventilation and Air Conditioning (HVAC) supply vents, ceiling penetrations, and non critical ceiling or wall mounted recessed lighting/ fan penetrations within the containment systems shall be deactivated and covered within similar plastic barrier systems wherever possible. All appropriate wall, floor, and ceiling penetrations identified present within the containment systems shall be sealed and/or otherwise rendered airtight and inoperable so as to minimize unfiltered particulate intrusion into and/or out of the established containment systems. Any smoke detectors and/or fire suppression systems shall NOT be covered nor rendered inoperable within the subject building due to existing building code requirements, unless specifically authorized to do so under the direction and supervision of DGS.

8. **Containment Inspection and Verification** - Upon contractor completion of the containment barrier system and maintenance of acceptable negative pressure for a minimum of 24 continuous hours, an inspection shall be performed by the Project Certified Industrial Hygienist (CIH) whereby a detailed review of all established barriers and containment systems shall be thoroughly assessed and verified. At the direction of DGS, this inspection and containment assessment activity may also include other third party professional environmental consultant review and comment, as necessary. Following the satisfactory review and achievement of such containment systems, and upon DGS approval, microbial mitigative measures may proceed in accordance with project specific mitigative procedures. .

9. **Air Scrubbing and Negative Air Machines** - Supplementing the existing negative air machines (designed to establish and maintain negative air pressure within the containment systems) a series of HEPA filtered air scrubbing machines shall also be located within of each of the affected work areas during all forthcoming mitigative activities. Such air scrubbing machines shall be oriented within active working areas and portable in their design so as to be readily relocated to additional work areas as necessary. Supplemental air scrubbing machines may also be placed within areas outside of the working and/or containment areas as an additional precautionary measure as necessary.

10. **Cleaning and Removal of Remaining Office Furniture** - During the initial phases of the mitigative effort, BioMax recommends that all interior office furniture, wall divider structures, desks, etc. currently present within the containment system be wet-wipe cleaned/HEPA vacuumed and sealed in 6 mil plastic or otherwise impervious materials for forthcoming physical removal from the affected containment areas. Such removal shall employ the establishment and use of a task-specific decontamination corridor used to relocate the bagged/sealed materials from the containment area. Special precautions must be made during this removal to isolate, contain, and segment the existing office furnishings into manageable sized units so as to effectively remove the items while

precluding the transmission of fugitive particulate emissions during such removal. It is anticipated that these materials shall be stored on the 23rd floor in a designated area located out of the established containment system until the all identified wallboard areas have been appropriately removed and/or mitigated as noted below.

11. **Carpet Removal** - Following the physical removal of all interior office furnishings, the mitigation contractor shall remove all interior carpeting and carpet pad underlayment utilizing appropriate dust suppression and material extraction methods. All carpeting shall be similarly sealed in manageable sized units so as to effectively remove the materials while precluding fugitive particulate emissions. Carpet and flooring materials will also be destroyed and/or otherwise rendered unsalvageable prior to disposal and waste documentation. Following all flooring material removal, a reassessment of floor penetrations shall be performed to identify and seal any newly identified floor penetrations and associated areas of potential airflow intrusion/egress.

12. **Wallboard Removal** - BioMax specifically recommends that all perimeter wallboard material and wallboard covering systems be removed for inspection of the interior and adjacent wall cavities/underlayment from floor to ceiling level wherever possible. The extent of preliminary wallboard material shall include physical removal of exterior walls within rooms 2339, 2338, 2337, 2336 2335, 2334, 2333, and 2332 located along the eastern portions of the subject building as noted. Any affected interior wall wallboard and flooring materials shall also be removed, wherever feasible, to the extent of any visible staining, and at a minimum and an additional two (2) linear feet wherever practicable. Removal of potentially moisture impacted and mold damaged materials may also employ the use of appropriate item-specific containment methods and systems (such as sealed plastic glove-bag containment systems, or equivalent) applicable to the materials being removed at the direction of the Project CIH. BioMax currently anticipates that all perimeter wall board materials and insulation shall be removed for subsequent interior inspection of the physical condition of all exterior wall cavities and underlayment materials within the identified affected areas. Any additional underlayment materials exhibiting visible signs of moisture staining shall also be identified, decontaminated, and/or removed as noted below.

13. **Other Potentially Affected Areas Encountered** - Other potentially affected areas and building materials encountered and/or identified during these deconstructive and investigative stages, such as adjacent interior walls, flooring, flooring underlayment, etc., must be thoroughly inspected during these deconstructive stages to identify any potential signs of additional microbial related materials and water damage indicators. In the event that additional moisture/mold damaged materials are encountered, the Project CIH shall be contacted for review of such findings and to obtain additional material specific direction. In general, all microbial impacted materials shall be removed to the extent of visible staining and at least 2 feet beyond such identified perimeters, wherever possible.

14. **Decontamination and Treatment** - All remaining moisture/mold affected porous and non-porous building materials deemed infeasible for removal and/or disposal (due to

physical constraints and/or structural integrity concerns) shall be inspected and receive a series of decontamination treatment measures designed to minimize and control the presence of microbial related substances. Decontamination methods employed shall, at a minimum, include treatment of all identified surfaces with a series of thorough mildicide solution (such as 20 parts water to 1 part chlorine soln. or similar commercial grade mildicide products) used in accordance with manufacturer's published information and guidelines. Depending on specific level of visible staining/deposition, wet treatment applications may be followed by a series of thorough HEPA filtered vacuuming procedures using power sanding and/or bristle brush agitation. The duration and frequency of mildicide and HEPA sanding/brushing applications employed may vary depending on condition of local material contamination but shall be sufficient in removing all particulate debris and decontaminating all visible surface staining to levels deemed by the Project CIH to be consistent with representative background levels.

15. **Additional Mitigative Measures** - Reasonable additional mitigative measures and controls may be required, as necessary, upon discovery of additional contaminated materials as well as review of additional site inspection findings and observations performed at regular and periodic intervals during this scope of work. BioMax would certainly be happy to provide regular and ongoing consultation with the selected mitigation contractor as well as with BOE's site industrial hygiene consultant during the performance of these activities as needed and upon request. Any significant findings pertaining to additional sampling assessment activities performed by BOE's industrial hygiene consultant shall also be reviewed by the Project CIH wherein appropriate action and/or revision to these recommended protocols will be implemented through verbal and written amendments.

16. **Inspection of Site Activities** - BioMax currently anticipates that a series of scheduled and unscheduled site visit/inspections shall be accomplished during the contractor's performance of active mitigative procedures and shall be performed by the Project CIH, and/or site representative so as to verify compliance with these recommended protocols and procedures. Significant findings and/or recommendations for revision to current mitigative protocols shall include immediate verbal instructions and will be documented within in written records, as necessary.

17. **Clearance Inspection and Assessment** - Upon completion of mitigation efforts performed by the selected microbial abatement contractor, BioMax recommends the performance of a detailed visual inspection conducted the Project CIH to verify the absence of significant residual mold related staining and/or moisture indicators within the remaining physical structures and to visually assess that all prescribed mitigative efforts and measures have been appropriately achieved. Additional "punch-list" action items may by provided to the contractor following the performance of this preliminary site clearance inspection as deemed necessary. Once completed, it is recommended that the Project CIH collect and review the findings of a series of airborne microbial "clearance" samples as a means to verify that all affected interior areas have been appropriately decontaminated to "acceptable" airborne levels and that the affected areas within the

subject building are verified as "cleared" for reconstruction, forthcoming reoccupancy, and reuse. It is expected that the specific clearance criteria parameters utilized during this phase of assessment shall be determined by DGS's Project CIH wherein BOE representatives will have the opportunity to provide input, comment, and review. As part of this "clearance" verification process, the provision of appropriate access for parallel inspection and review of sampling data shall be provided to BOE and their consultants for any additional review and comment. It is currently anticipated that 72 hours shall be afforded to BOE and their industrial hygiene consultants for their appropriate inspection, review of analytical findings, and performance of any supplemental sampling activities prior to DGS's initiation of reconstruction activities.

18. **Encapsulation** – BOE's consultant, Hygientech, previously asked whether ….*an "encapsulant of some type (will) be used post final visual inspection but prior to clearance sampling?"* BioMax's position is that it is fundamental to these procedures that NO encapsulant shall be used prior to the performance of a clearance sampling assessment of the impacted area. However, such consideration may be allowed upon repeated failure of reaching acceptable clearance criteria during which such encapsulation procedures may be considered in cooperation and consultation with BOE's industrial hygiene representatives.

19. **Building Leak Testing Verification** - Following the performance of these mitigative measures and achievement of acceptable clearance criteria, the designated site reconstruction contractor is strongly encouraged to verify that repairs to any faulty and/or deficient architectural detail design, building penetration, and/or building envelop sealing systems have been appropriately inspected, reconfigured, replaced/repaired, and function tested prior to the reconstruction of the affected interior structures and cavities. Certainly, the repair/replacement and/or establishment of any such additional engineering controls (as recommended through additional professional consultation) must be performed and implemented in accordance with applicable standards, building codes, and ordinances, as necessary.

20. **Reconstruction Activities** - Upon completion, reconstruction of interior structural materials should only be undertaken utilizing visibly clean (hand selected) construction grade materials in accordance with applicable building codes and requirements. The reconstruction contractor should be mandated to only select materials which are obtained from reputable commercial sources and which are believed and visually verified to be free from elevated microbial contamination and/or elevated moisture content. New building materials, which are notably moist and/or visibly stained, should NOT be used during the reconstruction of the subject structure.

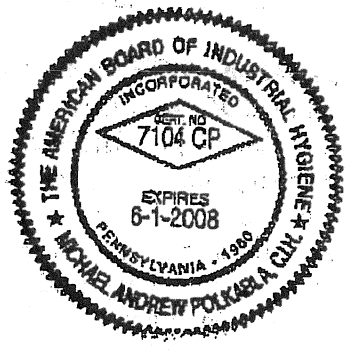
21. **Reasonable Additional Measures** - Reasonable additional assessment and mitigative measures may also be required upon the identification of new or previously undiscovered materials and/or information related to moisture/microbial impacts, as necessary. Any reoccurrence of moisture intrusion following reconstruction should certainly be reviewed and addressed through further professional consultation, as necessary. BioMax is

certainly prepared to provide such additional consultation pertaining to these and any follow-up investigative measures upon request.

BioMax believes that the proposed recommended procedures outlined above are consistent with standard industry microbial mitigative practices and prudent industrial hygiene hazard control methods. Please do not hesitate to contact our offices directly at (510) 724-3100 if you have any additional questions, comments about these recommendations, or require further assistance regarding this important matter.

Sincerely,

Michael A. Polkabla, CIH, REA
Vice President, Principal



LIMITATIONS

Please note that the professional opinions presented in this review are intended for the sole use of the California State Department of General Services (DGS) and their designated beneficiaries. No other party should rely on the information contained herein without the prior written consent of BioMax Environmental and DGS. The professional opinions provided herein are based on BioMax's review and understanding of current site information and observed site conditions present within the areas inspected at the time these services were performed. Professional recommendations provided as part of this limited scope of work are intended for client consideration only and are not intended as a professional or regulatory mandate. Implementation of any of the above measures or recommendations does not, in any way, warrant the day-to-day health and/or safety of building occupants, residents, site workers, nor regulatory or building code compliance status during normal and changing environmental conditions. As microbial contamination, by nature, may change over time due to additional moisture intrusion, favorable growth conditions, and changing environments, the findings of this report are subject to change in the event that such conditions and/or environments arise. Also, the professional opinions expressed here are subject to revision in the event that new or previously undiscovered information is obtained or uncovered.

The information contained in this and any other applicable communication is for consideration purposes only. It is not intended, nor should it be construed as providing legal advice or warranting any level of safety or regulatory compliance. The sole purpose of such information is to assist with the anticipation, identification, evaluation and control of elevated and/or unnecessary health of physical hazards. Any action taken based on this information, including but not limited to opinions, suggestions and recommendations, whether implied or expressed, is the sole responsibility of the individual taking the action. The management of acceptable health and safety is criteria dependent and situation specific in nature, therefore requiring extensive knowledge and prudent value assessments so as to be properly determined and maintained.

These services were performed by BioMax in accordance with generally accepted professional industrial hygiene principals, practices, and standards of care. Under the existing Industrial Hygiene Definition and Registration Act, all reports, opinions or official documents prepared by a Certified Industrial Hygienist (CIH) constitutes an expression of professional opinion regarding those facts or findings which are subject of a certification and does not constitute a warranty or guarantee, either expressed or implied.