

## **SEQUOIA ENVIRONMENTAL SERVICES**

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Industrial Hygiene  
Environmental Investigations

Indoor Air Quality  
Occupational Safety

December 12, 2011

### **RE: Proposal for Microbial Testing and Evaluation**

At the

At your request Sequoia Environmental, (SE) proposes to conduct an evaluation of the indoor air quality at \_\_\_\_\_ Ahwahnee California. The principle concern is reported to be the potential for bioaerosol amplification (mold contamination) in the indoor environment of the home and garage areas associated with water leakage and flooding. The estimate below is for all foreseeable professional CIII time and oversight, consultation, sampling and analyses, Protocol and report preparation, time and travel and any required small expenditures.

As part of SE's proposal, indoor air quality samples from the areas in question will be collected and analyzed and the data compared to the levels generally considered as acceptable by professionals. Samples will include ambient out door, room interior and as required wall cavity samples. Measurements of potentially affected flooring and wall-board will be made to determine their residual moisture content and therefore, the need for replacement. Additionally, measurements to document the indoor air quality parameters of temperature, relative humidity may also be conducted. SE proposes to collect non-viable air samples onto Zefon air-o-cell spore trap cassettes in at least three separate locations outside of the building. The outside samples are collected for reference purposes. Further, the proposal also anticipates the need for wall cavity sampling and analyses. SE proposal includes up to fifteen (15) samples using 37mm Polycarbonate filters with subsequent analyses by Polymerase Chain Reaction (PCR) 5' Fluorogenic Nuclease Assay for a panel of eight water intrusion indicator mold species. Wall cavity sampling is the most precise and accurate method to determine the presences, extent and specific source location of unseen active microbial growth and hence a source of bioaerosol amplification.

All samples including wall cavity samples will be collected based upon the standardized protocols established by the American Industrial Hygiene Association (AIHA) and the American Conference of Governmental Industrial Hygienists (ACGIH) for the investigation, assessment and control of biological contamination in the work place.

The air quality evaluation as proposed by SE will therefore include an inspection of the premises, collection and analyses of airborne biological samples and preparation of "Abatement Protocols" (remediation contractor specifications) supervision of the abatement process, clearance sampling and a final report summarizing the nature and extent of the conditions found and work done to successfully remediate the contamination.

It should be noted that there are no State of California or Federal regulations that establish a maximum contamination or "hazardous levels" for mold species in indoor occupational environments. As there are no statutory or regulatory compliance levels to which your findings can be compared, only non-governmental industry generated guidelines are applicable. The two guidance documents which provide the most comprehensive, universally accepted and scientifically valid approach to the investigation and control of bioaerosols associated with indoor air quality issues are developed by the American Industrial Hygiene Association (AIHA) and the American Conference of Governmental Industrial Hygienists (ACGIH). Specifically these guidance documents are the AIHA's "Field Guide for Determining Biological Contamination" and the ACGIH's "Bioaerosols: Assessment and Control". Both of these guidance documents provide professionals in the field of occupation health and safety guidance for the development of investigations, sampling and analytical protocols and remediation practices for bioaerosols in the work place. Also widely accepted is The American National Standards Institute's (ANSI) Certification Standard and Reference Guide for Professional Mold Remediation (referred to as the "Standard and Reference Guide" or the "S520"). SE utilizes all three of these documents in the development of a comprehensive "Abatement Protocol".

All work in this proposal will be managed by a Board Certified Industrial Hygienist.  
**A proposed cost estimate for these services is as follows;**

Professional Activity	Estimated Time/quantity	Cost/br	Total \$
Prepare sampling/analytical plan;	2 hours	150.00	300.00
Onsite inspection & sample collection	6 hours	150.00	900.00
Laboratory analyses of air samples	20 samples*	100.00	2,000.00
Wall cavity investigation using PCR	15 samples*	250.00	3,750.00
Clerical, data entry, packaging, shipping	1 per case	Flat	150.00
Perpetration of Abatement Protocol	1 per case	1,200.00	1,200.00
Onsite supervision of abatement contractor by CIH	16 hours	150.00	2,400.00
Clearance Sampling	12 samples	100.00	1,200.00
Preparation of Draft & Final Reports	8 hours	150.00	1,200.00
<b>ESTAMATED TOTAL CHARGES</b>			<b><u>\$13,100.00</u></b>

\*The number and type of samples identified represents the maximum anticipated for the size and scope of this project.

All reports will be submitted within 30 days of completion of abatement work and final clearance sampling. All reports will be peer reviewed by an independent competent Registered/Certified professional. All professional activity and costs will be fully discussed, explained, negotiated and agreed upon prior to the commencement of work.

Please feel free to contact me to discuss any questions or concerns you may have regarding this proposal.

Thank you for the opportunity to assist  
please contact me at my office at 559- 905-0181

If you have any questions

Sincerely,



Marc Boswell, MS, REHS, RHSP, CHEM, CIH  
Certified in the Comprehensive Practice of Industrial Hygiene