

STANDARDS OF PRACTICE FOR MOLD ASSESSMENTS AND SAMPLING

Promotions:

Standards of Practice for Mold Assessments and Sampling



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(ESA)

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The Standardization for mold assessments and sampling

(A promoting compliance to establish Standards)

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Professional References and Acknowledgments

ACGIH: *Bioaerosols: Assessment and Control*, Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH (1999).

AIHA: American Industrial Hygiene Association, Fairfax, VA.

ESA: Environmental Solutions Association, Williamsport, PA.

NIST: National Institute of Standards and Technology, Gaithersburg, MD.

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Section 1:

Mold Assessment Procedures

The following Standards in Section 1 have been developed with the intent of providing step-by-step Standards of practice for defined mold assessment services. These Standards do not include indications for sampling or data interpretation.

Environmental Solutions Association

The Standard For Limited Mold Sampling

Standard Number 1101

1. Purpose

- 1.1** The purpose of limited mold sampling is to detect the presence of mold in “**client defined**” areas of the subject property.

2. Scope

- 2.1** A sample collection and visual assessment will be conducted only in “client defined” areas and is not a complete assessment of the subject property. It is the discretion of the client as to the area, media type, and amount of samples to be taken.
- 2.2** Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by a complete visual assessment of the entire property before mold can be identified in designated area or areas.
- 2.3** The results of limited mold sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled at the time the limited mold sampling was performed.

3. Procedure of Limited Sampling

- 3.1** Create a limited sampling inspection packet with the following information:
 - 3.1.1** Client information on your company’s Microbial Field Assessment Forms (FAF #1201-1217);
 - 3.1.2** Client information on a Chain-of-Custody (refer to Standard 1107);
 - 3.1.3** Client information on a Limited Sampling Inspection Agreement (form #1101A).
- 3.2** Arrive at the inspection site 15 minutes before scheduled inspection time.
- 3.3** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have the appropriate answers to the most commonly asked questions received during a Limited Sampling Inspection.
- 3.4** Explain the Limited Sampling Inspection Agreement (form #1101A) and what you are going to be doing, as well as what you are not going to do.
- 3.5** Give your client plenty of time to review and sign the agreement. You can begin your work, but let the client know that you will not be able to issue a report until you have the agreement signed and in your possession.
- 3.6** Have the client identify all areas of concern in the subject property.
- 3.7** Conduct a visual assessment in the area or areas designated by the client to identify visual mold contamination or conditions that may be conducive to microbial growth.
- 3.8** Collect an appropriate number of samples as determined by the visual assessment and the client’s approval.
 - 3.8.1** Air sample(s) follow Standard 1201.
 - 3.8.2** Swab sample(s) follow Standard 1301.

- 3.8.3** Carpet sample(s) follow Standard 1401.
- 3.8.4** Dust cassette(s) follow Standard 1501.
- 3.8.5** Test tape(s) follow Standard 1601
- 3.8.6** Bulk sample(s) follow Standard 1701.
- 3.8.7** Wall sample(s) follow Standard 1801.
- 3.8.8** Viable sample(s) follow Standard 1901.
- 3.9** When the inspection is completed, ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.10** Thank the client for their time. Let them know that the average time for laboratory results are up to four days, and you will contact them when you receive the report. Add two business days from your lab's receipt of your samples for the laboratory results to be posted on the web or faxed to the client.
- 3.11** Ensure all samples are appropriately labeled.
- 3.12** Complete all the appropriate areas of the Chain-of-Custody.
- 3.13** Before leaving the inspection site, ensure you have the following:
 - 3.13.1** All samples collected are properly labeled and in your possession;
 - 3.13.2** Completed Chain-of-Custody;
 - 3.13.3** Signed Limited Sampling Inspection Agreement.
- 3.14** Overnight the Chain-of-Custody and all samples to an accredited laboratory for analysis.
- 3.15** Retrieve your laboratory results.
- 3.16** Prepare your final report for your client. Include (at a minimum) a professional cover letter on company letterhead, the suggested preface language identifying the boundaries of the report, an executive summary identifying the findings (in a language the client can understand), the actual laboratory results, photo log, field sheets and feedback sheet. Also include an information sheet on where to find additional information.
- 3.17** Deliver the report to your client and answer any immediate questions they might have. Obtain the client's email address when they place their order. Their report can be e-mailed to reduce your delivery cost.
- 3.18** Be available to your client for any additional follow-up questions and assistance.

4. Limited Mold Sampling Summary

- 4.1** Client defined areas of the subject property or special concern areas of the property.
- 4.2** Perform a visual inspection of readily accessible areas in the client defined area of special concern.
- 4.3** Collect one or more samples in defined area only (usually predicated by visible mold, odors, or possible evidence of water penetration).
- 4.4** Analysis of samples.
- 4.5** Laboratory Report detailing the presence and type(s) of mold, if any, found in the samples.
- 4.6** Laboratory Summary Report possibly identifying any "unusual" mold conditions existing in the sampled locations only, at the time they were collected.

- 4.7** Limited mold sampling is not a guarantee that mold does or does not exist in the subject property.
- 4.8** Remediation specifications of identified mold affected areas. The advice of an Indoor Air Quality (IAQ) Specialist or other qualified professional should be sought for further directions on how to address any mold problems discovered.

References

ESA: Environmental Solutions Association, Williamsport, PA.

LIMITED MOLD INSPECTION AND SAMPLING AGREEMENT

THIS AGREEMENT LIMITS OUR LIABILITY – PLEASE READ IT CAREFULLY

This Limited Mold Sampling Agreement (the “Agreement”) is made effective on the date stated on page 2 of this agreement by and between the Inspection company named on Page 2 of this agreement (hereinafter “Inspector”, “we”, “us” and “our”) and client named on Page 2 of this agreement (hereinafter “Client,” “You” or “Your”) (collectively “parties”). We are an independently owned and operated company engaged in the business of providing professional mold inspection and sampling services utilizing an EMPAT / EMLAP certified lab for environmental laboratory analysis. You desire to have a Limited Mold Inspection with the possibility of sampling (the “inspection”) performed on a subject property located at the address stated on Page 2 of this agreement.

Purpose. The purpose of Limited Mold Inspection and Sampling is to detect the presence of mold in only Client defined areas of the Subject Property.

Scope of Limited Mold Inspection and Sampling. Limited Mold Inspection and Sampling consists of a visual assessment for mold problems in area(s) designated by You and the collection/analysis of sample(s) in these designated area(s) only. Further, the objective of Limited Mold Inspection and Sampling is to determine whether mold problems exist in the designated area(s) sampled at the time the Service is performed. As such, the results of Limited Mold Inspection and Sampling is not a guarantee that mold does or does not exist in the Subject Property; the results are indicative only of the presence or absence of mold in the designated areas sampled at the time the service is performed. In light of no currently established Threshold Limit Values (TLVs) for the majority of substances of biological origins that are associated with building-related exposures, We follow the guidelines of the American Conference of Governmental Industrial Hygienists (ACGIH) 19.5.3.1. You understand that Limited Mold Inspection and Sampling is narrower in scope than a regular Mold Inspection and Sampling and is NOT a complete assessment of the Subject Property.

The Inspector is a generalist and is not a Certified Industrial Hygienist or expert in any specific craft or trade. If the Inspector or report recommends further action, including but not limited to consulting with a specialized expert(s), you must do so at your own expense or otherwise assume all risks associated with failure to do so. **This inspection is not technically exhaustive.** The fee charged for this Inspection is substantially less than that of a technically exhaustive inspection.

Visual Assessment. The purpose of the visual assessment is to identify visual mold contamination or conditions that may be conducive to microbial growth, for example, musty odor and/or evidence of water penetration, in the area(s) You designate only. The sole purpose of the visual assessment is to detect the presence, or likely presence, of mold in the designated area(s); therefore, the Inspector will not be liable for failure to discover any conditions other than readily apparent and accessible mold, including, but not limited to, water penetration. Following the visual assessment, sample collection and lab results, the Client will be provided with a written report stating whether mold or conditions indicating mold were found in the designated area(s).

Scope of Visual Assessment/Exclusions. THE SCOPE OF THE VISUAL ASSESSMENT IS LIMITED TO READILY ACCESSIBLE AREAS DESIGNATED BY THE CLIENT ONLY. We do not remove floor and wall coverings or move furniture, open walls or perform any type of destructive inspection. Certain structural areas are considered inaccessible and impractical to inspect including but not limited to: the interiors of walls and inaccessible areas below; areas beneath wood floors over concrete; areas concealed by floor coverings; and areas to which there is no access without defacing or tearing out lumber, masonry, roofing or finished workmanship; structures; portions of the attic concealed or made inaccessible by insulation, belongings, equipment or ducting; portions of the attic or roof cavity concealed due to inadequate crawl space; areas of the attic or crawl space made inaccessible due to construction; interiors of enclosed boxed eaves; portions of the sub area concealed or made inaccessible by ducting or insulation; enclosed bay windows; portions of the interior made inaccessible by furnishings; areas where locks prevented access; areas concealed by appliances; areas concealed by stored materials; and areas concealed by heavy vegetation. Note: There is no economically practical method to make these areas accessible. However, they may be subject to attack by microbial organisms. NO OPINION IS RENDERED CONCERNING THE CONDITIONS IN THESE AFOREMENTIONED OR OTHER INACCESSIBLE AREAS.

Sampling. The Inspector will NOT be able to determine the extent or type of microbial contamination from the results of the Visual Assessment. An appropriate number of samples must be collected, as determined by the Visual Assessment, before mold can be identified in designated area(s). You will have an opportunity to have samples taken in areas of the Subject Property You designate to establish the presence and type(s) of microbial contamination. The Inspector will send samples to an EMPAT / EMLAP certified lab, which will analyze them for the presence of mold. The Lab will then issue a report to You detailing the presence and type(s) of mold, if any, found in the samples. A reference guide will be provided, which explains the various types of mold along with any recommended action(s).

Services. Visual assessment and sampling locations You requested is listed on page 2 of this Limited Mold Inspection and Sampling Agreement.

Notice of Claims. You understand and agree that any claim(s) or complaint(s) arising out of or related to any alleged act or omission in connection with the Inspection shall be reported to us, in writing, within ten (10) business days of discovery. Unless there is an emergency condition, you agree to allow us a reasonable period of time to investigate the claim(s) or complaint(s) by, among other things, re-inspection before you, or anyone acting on your behalf, repairs, replaces, alters or modifies the system or component that is the subject matter of the claim. **You understand and agree that any failure to timely notify us and allow adequate time to investigate as stated above shall constitute a complete bar and waiver of any and all claims you may have against us related to the alleged act or omission unless otherwise prohibited by law.**

Arbitration. Any dispute concerning the interpretation of this Agreement or arising from the Inspection and Report (unless based on payment of fee) shall be resolved by binding, non-appealable arbitration conducted in accordance with the rules of the American Arbitration Association, except that the parties shall mutually agree upon an Arbitrator who is familiar with the home inspection industry.

Limitations Period. Any legal action arising from this Agreement or from the Inspection and Report, including (but not limited to) the arbitration proceeding more specifically described above, must be commenced within one (1) year from the date of the Inspection. **Failure to bring such an action within this time period shall be a complete bar to any such action a full and complete waiver of any rights or claims based thereon.** This time limitation period may be shorter than provided by state law.

UNCONDITIONAL RELEASE AND LIMITATION OF LIABILITY. IT IS UNDERSTOOD AND AGREED THAT WE AND LAB ARE NOT INSURERS AND, THAT THE INSPECTION AND REPORT TO BE PROVIDED UNDER THIS AGREEMENT SHALL NOT BE CONSTRUED AS A GUARANTEE OR WARRANTY OF THE ADEQUACY, PERFORMANCE OR CONDITION OF ANY STRUCTURE, ITEM, OR SYSTEM AT THE SUBJECT PROPERTY. YOU HEREBY RELEASE AND EXEMPT US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES OF AND FROM ALL LIABILITY AND RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY UNREPORTED DEFECT OR DEFICIENCY AND FOR ANY CONSEQUENTIAL DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY OF ANY NATURE. IN THE EVENT THAT WE, THE LAB OR OUR RESPECTIVE AGENTS OR EMPLOYEES ARE FOUND LIABLE DUE TO BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENT MISREPRESENTATION, NEGLIGENT HIRING OR ANY OTHER THEORY OF LIABILITY, THEN THE CUMULATIVE AGGREGATE TOTAL LIABILITY OF US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES SHALL BE LIMITED TO A SUM EQUAL TO THE AMOUNT OF THE FEE PAID BY YOU FOR THE INSPECTION AND REPORT.

Services. The Client wishes to have Inspector provide the following mold services:
 A visual assessment in the following areas of the Subject Property:

Location of Area(s) to Be Assessed
1.
2.
3.
4.
5.
6.

Note: Attach separate form if additional areas are needed.

____ Samples collected in the following areas of the Subject Property:

Location of Area to Be Sampled	Type of Sample	Quantity	Price	Total	Initials
1.	Air / Direct / Carpet / Wall		@ \$	= \$	
2.	Air / Direct / Carpet / Wall		@ \$	= \$	
3.	Air / Direct / Carpet / Wall		@ \$	= \$	
4.	Air / Direct / Carpet / Wall		@ \$	= \$	
5.	Air / Direct / Carpet / Wall		@ \$	= \$	
6.	Air / Direct / Carpet / Wall		@ \$	= \$	
7.	Air / Direct / Carpet / Wall		@ \$	= \$	
8.	Air / Direct / Carpet / Wall		@ \$	= \$	

Note: Attach separate form if additional samples are needed.

Fees. The total fee for this Limited Mold Inspection and Sampling Inspection is \$ _____ (See above table for details).

THIS INSPECTION, INSPECTION AGREEMENT AND REPORT DO NOT CONSTITUTE A WARRANTY, AN INSURANCE POLICY, OR A GUARANTEE OF ANY KIND; NOR DO THEY SUBSTITUTE FOR ANY DISCLOSURE STATEMENT AS MAY BE REQUIRED BY LAW.

Confidentiality. You understand that the Inspection is being performed (and the Report is being prepared) for your sole, confidential and exclusive benefit and use. The Report, or any portion thereof, is not intended to benefit any person not a party to this Agreement, including (but not limited to) the seller or the real estate agent(s) involved in the real estate transaction ("third party"). **If you directly or indirectly allow or cause the Report or any portion thereof to be disclosed or distributed to any third party, you agree to indemnify, defend, and hold us harmless for any claims or actions based on the Inspection or the Report brought by the third party.**

By signing below, You acknowledge that You have read, understand, and agree to the terms and conditions of this agreement, including (but not limited to) the limitation of liability, arbitration clause and limitation period, and agree to pay the fee listed in the shaded box above. In addition, You acknowledge and agree that the Inspector may notify the homeowner or occupants of the Subject Property (if other than You), as well as any appropriate public agency, of any condition(s) discovered that may pose a safety or health concern.

Client Name _____

Property Address _____
 Street Name City State Zip

CLIENT _____ INSPECTOR _____
 Client's Signature Date Company Name: Title Date

Environmental Solutions Association

The Standard Method For Mold Screen Inspection

Standard Number 1102

1. Purpose

- 1.1** The purpose of a Mold Screen Inspection is to perform a visual assessment of the entire house, to identify any “red flags” for mold, and to perform limited sampling for mold. The minimum requirement for mold screening is three samples. Three or more samples should be taken for an accurate mold screening to be done.

2. Scope

- 2.1** When “red flags” are found in multiple areas, the client will be advised and offered the chance to have additional samplings performed in any or all identified areas. The client will also be given the chance to upgrade to a Mold Survey. The Mold Screen is usually performed as a routine adjunct to a normal home inspection associated with a real estate transfer, requested and paid for by the homebuyer. The value of this service is that all “red flags” are identified. It is limited, since complete sampling and further field assessment are required to write remediation specifications for the site.

3. Procedure of Mold Screening

- 3.1** Create a Mold Screen Inspection packet with the following information:
 - 3.1.1** Client information on your company’s Microbial Field Assessment Forms (FAF #1201-1217);
 - 3.1.2** Client information on a Chain-of-Custody (refer to Standard 1107);
 - 3.1.3** Client information on the Mold Screen Inspection Agreement (form #1102A).
- 3.2** Arrive at the inspection site 15 minutes before the scheduled inspection time.
- 3.3** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have appropriate answers to the most commonly asked questions received during a Mold Screen Inspection.
- 3.4** Explain the Mold Screen Inspection Agreement (form #1102A) and what you are going to be doing, as well as what you are not going to be doing.
- 3.5** Give your client plenty of time to review and sign the agreement. You can begin your work, but let the client know that you will not be able to issue a report until you have the agreement signed and in your hands.
- 3.6** Ask the homeowner to point out all areas of concern in the subject property.
- 3.7** Take a digital photograph of the front of the dwelling for identification.
- 3.8** Conduct a visual assessment of the entire subject property to identify visual mold contamination or conditions that may be conducive to microbial growth.
 - 3.8.1** If an Intrusive Inspection becomes necessary to check for mold growth in non-readily accessible areas such as behind walls or above ceiling tiles, use Intrusive Inspection Agreement (form # 1103B) in addition to your Mold Screen Inspection Agreement (form # 1102A).

- 3.9** Check the HVAC systems for mold including: the ventilation ducts, plenum area(s), evaporator coils, and air filter. Check for condensation or moisture in the air return handler and the drip pans.
- 3.10** Complete the Microbial Field Assessment Forms, #1201-1217, while conducting a visual assessment of all readily accessible areas in the subject property. If a room or area of the house has a sample collected, the appropriate Affected Room form must be completed.
 - 3.10.1** Check appropriate boxes to describe the conditions in each room.
 - 3.10.2** If no “Red Flags” exist, take at least one photo of the room from the entrance.
 - 3.10.3** Note areas of moisture on the appropriate Affected Room form.
 - 3.10.4** Where moisture or water damage is evident, trace to the source and note the source in the cause/description and recommendation action line.
 - 3.10.5** Where visible mold is present you must indicate the square footage of the mold in the appropriate box.
- 3.11** Following the visual inspection, collect two (2) samples indoors in a red flag area if a red flag is identified. If none are identified take two (2) air samples of the common areas -- and one (1) outdoor sample. Take all samples according to assessment protocol.
 - 3.11.1** Air sample(s) follow Standard 1201.
 - 3.11.2** Swab sample(s) follow Standard 1301.
 - 3.11.3** Carpet sample(s) follow Standard 1401.
 - 3.11.4** Dust cassette(s) follow Standard 1501.
 - 3.11.5** Test tape(s) follow Standard 1601.
 - 3.11.6** Bulk sample(s) follow Standard 1701.
 - 3.11.7** Wall sample(s) follow Standard 1801.
 - 3.11.8** Viable sample(s) follow Standard 1901.
- 3.12** If two or more “red flag” areas within the subject property are identified based upon the results of the visual inspection, additional sampling should be conducted in each of the identified areas. Complete the Agreement for Further Sampling portion of the Mold Screen Inspection Agreement; consult with your client on your visual findings and suggest additional sampling.
- 3.13** Document reasons for all samples taken on the appropriate pages of the Microbial Field Assessment Form and the Affected Room Form(s).
- 3.14** Take the appropriate photographs of “red flag” areas.
 - 3.14.1** Follow Standard 1106 for photographs.
- 3.15** Ensure that the client understands the Agreement for Further Sampling and initials all appropriate areas that reflect their wishes.
- 3.16** When the inspection is completed, ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.17** Thank the client for their time. Let them know that the average time for laboratory results is up to four days, and you will contact them when you receive the report. Add two business days from your lab’s receipt of your samples for the laboratory results to be posted on the web or faxed to the client.
- 3.18** Ensure all samples are appropriately labeled.

- 3.19 Complete all the appropriate areas of the Chain-of-Custody.
- 3.20 Before leaving the site, ensure you have the following:
 - 3.20.1 All samples collected are properly labeled and in your possession;
 - 3.20.2 Completed Chain-of-Custody;
 - 3.20.3 Signed Mold Screen Inspection Agreement.
- 3.21 Overnight the Chain-of-Custody and all samples to the lab for analysis.
- 3.22 Retrieve your laboratory results.
- 3.23 Prepare your final report for your client. Include (at a minimum) a professional cover letter on company letterhead, the suggested preface language identifying the boundaries of the report, an executive summary identifying the findings (in a language the client can understand), the actual laboratory results, photo log, field sheets, and feedback sheet. Also include an information sheet on where to find additional information.
- 3.24 Deliver the report to your client and answer any immediate questions they might have. Obtain the client's email address when they place their order. You can email them their report to reduce your delivery cost.
- 3.25 Be available to your client for any additional follow-up questions and assistance.

4. Mold Screen Inspection Summary

- 4.1 Areas of the entire property or special concern areas of the property.
- 4.2 Perform a visual inspection of readily accessible areas in the entire property and area(s) of special concern.
- 4.3 Collect of a minimum of three (3) samples.
- 4.4 When the visual inspection identifies "red flags" in multiple areas, the client will be advised and offered the opportunity to have samples collected in any and all identified areas.
- 4.5 Collect additional samples in all "red flag" areas (at discretion of the client).
- 4.6 Analysis of samples.
- 4.7 Laboratory Report detailing the presence and type(s) of mold, if any, found in the samples.
- 4.8 Laboratory Summary Report possibly identifying any "unusual" mold conditions existing in the sampled locations only at the time they were collected.
- 4.9 A mold screening is not a guarantee that mold does or does not exist in the subject property.
- 4.10 Remediation specifications of identified mold affected areas. The advice of an Indoor Air Quality (IAQ) Specialist or other qualified professional should be sought for further directions on how to address any mold problems discovered.

References

ESA: Environmental Solutions Association, Williamsport, PA.

Environmental Solutions Association

The Standard Method For Mold Survey Inspection

Standard Number 1103

Standard Number Subsection 1103.1: Retail Survey Inspection

1. Purpose

- 1.1** The purpose of a Mold Survey Inspection is to detect the presence of a microbial problem in all readily accessible areas of the subject property, by following prescribed protocols, and collecting appropriate data elements to help enable remediation specifications to be produced.

2. Scope

- 2.1** A Mold Survey Inspection includes a complete survey of the entire home. A Mold Survey Inspection identifies, determines the cause, and provides corrective measures for all mold sources discovered in the entire house. A limitation is that it is non-intrusive, and hidden areas of mold will possibly go undetected.

3. Procedure of Retail Mold Screening

- 3.1** Create a mold survey inspection packet with the following information:
 - 3.1.1** Client information on your company's Microbial Field Assessment Forms (FAF #1201-1217);
 - 3.1.2** Client information on a Chain-of-Custody (refer Standard 1107);
 - 3.1.3** Client information on a Mold Survey Inspection Agreement (form #1103A).
- 3.2** Arrive at the inspection site 15 minutes before the scheduled inspection time.
- 3.3** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have the appropriate answers to the most commonly asked questions received during a sampling inspection.
- 3.4** Explain the Mold Survey Inspection Agreement (form #1103A) and what you are going to be doing, as well as what you are not going to do.
- 3.5** Give your client plenty of time to review and sign the agreement. You can begin your work, but let the client know that you will not be able to issue a report until you have the Inspection Agreement signed and in your possession.
- 3.6** Have the homeowner complete and sign the Home Owner Questionnaire. Use this information to help establish the area(s) in the subject property to be sampled.
- 3.7** Ask the homeowner to point out all areas of concern in the subject property.
- 3.8** Take a digital photograph of the front of the dwelling for identification.
 - 3.8.1** Follow Standard 1106 for photographs.
- 3.9** One outdoor air sample must be taken to act as a baseline comparison to the indoor air samples.
 - 3.9.1** Follow Standard 1201 for air sampling.

- 3.10** Check the HVAC systems for mold, including: the ventilation ducts, plenum area(s), evaporator coils, and air filter. Check for condensation or moisture in the air return handler and the drip pans.
- 3.11** Complete the Microbial Field Assessment Forms #1201-1217 while conducting a visual assessment of all readily accessible areas in the subject property. If a room or area of the house has a sample collected, the appropriate Affected Room form must be completed as follows:
 - 3.11.1** Check appropriate boxes to describe the conditions in each room.
 - 3.11.2** If no “red flags” exist, take at least one photo of the room from the entrance.
 - 3.11.3** Note areas of moisture on the appropriate Affected Room form.
 - 3.11.4** Where moisture or water damage is evident, trace to the source and note the source in the cause/description and recommendation action line.
 - 3.11.5** Where visible mold is present, you must indicate the square footage of the mold in the appropriate box.
- 3.12** Take swab samples or test tapes of suspected visible mold.
 - 3.12.1** Follow Standard 1301 for common swab sampling.
 - 3.12.2** Follow Standard 1601 for test tapes.
- 3.13** Take an indoor air sample in every room with visible mold contamination or in areas where “red flags” have been identified.
 - 3.13.1** Follow Standard 1201 for air sampling.
- 3.14** Document reasons for taking each sample on the appropriate pages of the Microbial Field Assessment Form and the Affected Room Form(s).
- 3.15** If an Intrusive Inspection becomes necessary to check for mold growth in non-readily accessible areas such as behind walls or above ceiling tiles, use Intrusive Inspection Agreement in addition to Mold Survey Inspection Agreement (form # 1103A).
 - 3.15.1** Use Intrusive Inspection Agreement (form # 1103B).
- 3.16** Take the appropriate photographs of “red flag” areas.
 - 3.15.1** Follow Standard 1106 for photographs.
- 3.17** When the inspection is completed, ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.18** Thank the client for their time. Let them know that the average time for reports and specifications to be produced is up to four weeks, and you will be contacting them when you receive the report.
- 3.19** Complete a Quality Control evaluation of your field sheets to make sure all data elements have been properly annotated on your FAF’s. Also, make sure all samples are appropriately labeled and the Chain-of-Custody Form, FAF, and diagrams reflect the correct information. Before leaving the site, cross-check the following items to ensure completeness and accuracy:
 - 3.18.1** Floor plans and Affected Room forms;
 - 3.18.2** FAF – for completeness and accuracy;
 - 3.18.3** Photo Logs;
 - 3.18.4** Chain-of-Custody;
 - 3.18.5** Lab Samples;
 - 3.18.6** Narratives and additional notes;

3.18.7 Home Owner Questionnaire.

- 3.19** Overnight samples taken to an appropriate accredited lab along with Chain-of-Custody.
- 3.20** If applicable, email photos, the Microbial Field Assessment Forms, Affected Room Forms, and Home Owner Questionnaire to the Indoor Air Quality (IAQ) Specialist. All digital photos will be labeled in the format of Job Number-P#.jpg. (e.g. 12345678-p1.jpg). It is important to make sure that the photos sent match the number and labeling that is contained on the photo log sheet in the FAF.

Environmental Solutions Association

The Standard Method For Mold Survey Inspection

Standard Number 1103

Standard Number Subsection 1103.2: Network Survey Inspection

1. Purpose

- 1.1** The purpose of a Mold Survey Inspection is to detect the presence of a microbial problem in all readily accessible areas of the subject property by following prescribed protocols and collecting appropriate data elements to help enable remediation specifications to be produced.

2. Scope

- 2.1** A Mold Survey Inspection includes a complete survey of the entire home. A Mold Survey Inspection identifies, determines the cause, and provides corrective measures for all mold sources discovered in the entire house. A limitation is that it is non-intrusive, and hidden areas of mold will possibly go undetected.

3. Procedure of Network Mold Screening

- 3.1** Receive the inspection request from the Administrator.
- 3.2** Contact the client by 9:00 p.m. the day you received the order or before noon the next day to schedule the inspection.
- 3.3** If any information on the original order is incorrect, notify the Administrator of the changes.
- 3.4** Respond back to the Administrator within 24 hours of receipt of order, with the scheduled date and time or the reason(s) why the inspection has not been scheduled. Provide the attempt methods and date and time logs if the client has not been reached.
- 3.5** All inspections are to be scheduled within 48 hours from initial receipt of inspection request. If not, the Administrator will need a reason (i.e. “at the client request” is acceptable – “at the convenience of the technician” is not).
- 3.6** 24 hours before the scheduled inspection, call and confirm the date and time with the client.
- 3.7** Arrive at the inspection site 15 minutes before the scheduled inspection time.
- 3.8** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have the appropriate answers to the most commonly asked questions received during a sampling inspection.
- 3.9** Take a digital photograph of the front of the dwelling for identification.
 - 3.9.1** Follow Standard 1106 for photographing.
- 3.10** One outdoor air sample must be taken to provide as a baseline comparison to the indoor air samples.
 - 3.10.1** Follow Standard 1201 for air sampling.

- 3.11** Have the homeowner complete and sign the Home Owner Questionnaire. Use this information to help establish the area(s) in the subject property to be sampled.
- 3.12** Ask the homeowner to point out all areas of concern in the subject property.
- 3.13** Check the HVAC systems for mold including: the ventilation ducts, plenum area(s), evaporator coils and air filter. Check for condensation or moisture in the air return handler and the drip pans.
- 3.14** Complete the Microbial Field Assessment Form #1201-1217 while conducting a visual assessment of all readily accessible areas in the subject property. If a room or area of the house has a sample collected, the appropriate Affected Room Form must be completed as follows:
 - 3.14.1** Check appropriate boxes to describe the conditions in each room.
 - 3.14.2** If no “red flags” exist, take at least one photo of the room from the entrance.
 - 3.14.3** Note areas of moisture on the appropriate Affected Room form.
 - 3.14.4** Where moisture or water damage is evident, trace to the source and note the source in the cause/description and recommendation action line.
 - 3.14.5** Where visible mold is present, you must indicate the square footage of the mold in the appropriate box.
- 3.15** Take swab samples or test tapes of suspected visible mold.
 - 3.15.1** Follow Standard 1301 for common swab sampling.
 - 3.15.2** Follow Standard 1601 for test tapes.
- 3.16** Take an indoor air sample in every room with visible mold contamination or in areas where “red flags” have been identified.
 - 3.16.1** Follow Standard 1201 for air sampling.
- 3.17** Document reasons for all samples taken on the appropriate pages of the Microbial Field Assessment Form and the Affected Room form(s).
- 3.18** If an Intrusive Inspection becomes necessary to check for mold growth in non-readily accessible areas such as behind walls or above ceiling tiles, you must contact the Network Administrator and have the Intrusive Inspection Agreement signed by the appropriate authority.
 - 3.18.1** Use Intrusive Inspection Agreement (form # 1103B).
- 3.19** Take at least three (3) digital photographs of all mold and “red flag” areas.
 - 3.19.1** Follow Standards 1106 for photographs.
- 3.20** Note sample and photo numbers on the appropriate Affected Room forms. Every inspection requires a floor plan diagram, including a complete drawing of the entire house and attached structures. Each room where samples are collected must have dimensions included in the Affected Room drawings and a separate affected wall diagram identifying where the mold and water stains are located.
- 3.21** Ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.22** Thank the client for their time. Let them know that the average time for reports and specifications to be produced is up to four weeks and their adjuster will be contacting them when they receive the report.

- 3.23** Complete a Quality Control evaluation of your field sheets to make sure all data elements have been properly annotated on your FAF's. Also, ensure all samples are appropriately labeled and the Chain-of-Custody form, FAF, and diagrams reflect the correct information. At a minimum before leaving the site, you will cross-check the following items to ensure completeness and accuracy:
- 3.23.1** Floor plans and Affected Room forms;
 - 3.23.2** FAF – for completeness and accuracy;
 - 3.23.3** Photo Logs;
 - 3.23.4** Chain-of-Custody (refer Standard 1107);
 - 3.23.5** Lab Samples;
 - 3.23.6** Narratives and additional notes;
 - 3.23.7** Home Owner Questionnaires.
- 3.24** Overnight samples taken to an appointed ESA accredited lab along with Chain-of-Custody.
- 3.25** Overnight any other information at the homeowner's request to an appropriate ESA accredited laboratory. All digital photos will be labeled in the format of Claim Number-P#.jpg. (e.g. 12345678-p1.jpg). It is important to make sure that the photos sent match the number and labeling that is contained on the photo log sheet in the FAF.
- 3.26** **Note: Any deviation from sampling protocols outlined above may be considered non-compliance with existing protocols. If the samples collected cannot be analyzed or used for reporting purposes, the inspector will have to return to the property and collect the air samples correctly at personal expense.**

References

ESA: Environmental Solutions Association, Williamsport, PA.

MOLD INSPECTION AND SAMPLING AGREEMENT

THIS AGREEMENT LIMITS OUR LIABILITY – PLEASE READ IT CAREFULLY

This Mold Inspection and Sampling Agreement (the "Agreement") is made effective on the date stated on page 2 of this agreement by and between the Inspection company named on Page 2 of this agreement (hereinafter "Inspector", "we", "us" and "our") and client named on Page 2 of this agreement (hereinafter "Client," "You" or "Your") (collectively "parties"). We are an independently owned and operated company engaged in the business of providing professional mold inspection and sampling services utilizing an EMPAT / EMLAP certified lab for environmental laboratory analysis. You desire to have a Mold Inspection with the possibility of sampling (the "inspection") performed on a subject property located at the address stated on Page 2 of this agreement.

Purpose. The purpose of the Mold Inspection and Sampling is to detect the presence of a microbial problem in the inspected areas of the Subject Property and collect information and samples to help enable remediation specifications.

Scope of Mold Inspection and Sampling. The Mold Inspection and Sampling consists of a visual inspection in readily accessible areas for mold and/or conditions that may indicate the presence of mold ("red flags"), for example, musty odor and/or evidence of water penetration. If the visual inspection shows no or one "red flag" area, then samples will be taken ("Initial Sampling"), as set forth in the "Initial Sampling" section below. If "red flags" are found in multiple areas, then You will be advised and offered the chance to have additional samples collected in any and all identified areas ("Additional Sampling"). It is important to note that all "red flag" areas identified MUST have samples collected if Remediation Specifications are to be produced. The objective of the Mold Inspection and Sampling is to determine whether mold problems exist in the readily accessible area(s) sampled at the time the service is performed. As such, the results of Mold Inspection and Sampling are not a guarantee that mold does or does not / will or will not exist in the subject property; the results are indicative only of the presence or absence of mold in the areas sampled at the time the service is performed. In light of no currently established Threshold Limit Values (TLVs) for the majority of substances of biological origins that are associated with building-related exposures, We follow the guidance of the American Conference of Governmental Industrial Hygienists (ACGIH) 19.5.3.1. NEVER attempt to incorporate remediation activities (unless YOU are fully qualified); You should consult a Remediation Specialist or other appropriate Professionals concerning Mold.

Visual Inspection. The visual inspection is the first part of the Mold Inspection and Sampling. The purpose of the visual inspection is to identify visible mold or conditions that may be productive to microbial growth (examples musty odor/water intrusion). The sole purpose of the visual inspection is to detect the presence, or likely presence, of mold; therefore, We will not be liable for failure to discover any conditions other than readily apparent and visible mold, including, but not limited to, water penetration.

Scope of Visual Inspection/Exclusions. The scope of the visual inspection is limited to readily accessible areas only. We do not remove floor and wall coverings or move furniture, open walls or perform any type of destructive inspection. Certain structural areas are considered inaccessible and impractical to inspect including but not limited to: the interiors of walls and inaccessible areas below; areas beneath wood floors over concrete; areas concealed by floor coverings; and areas to which there is no access without defacing or tearing out lumber, masonry, roofing or finished workmanship; structures; portions of the attic concealed or made inaccessible by insulation, belongings, equipment or ducting; portions of the attic or roof cavity concealed due to inadequate crawl space; areas of the attic or crawl space made inaccessible due to construction; interiors of enclosed boxed eaves; portions of the sub area concealed or made inaccessible by ducting or insulation; enclosed bay windows; portions of the interior made inaccessible by furnishings; areas where locks prevented access; areas concealed by appliances; areas concealed by stored materials; and areas concealed by heavy vegetation. Note: There is no economically practical method to make these areas accessible. However, they may be subject to attack by microbial organisms. NO OPINION IS RENDERED CONCERNING THE CONDITIONS IN THESE AFOREMENTIONED OR OTHER INACCESSIBLE AREAS.

Agreement for Further Sampling. If discovered, You will have an opportunity for sampling of affected areas for an additional fee(s) by executing as Agreement for Further Sampling. In the event You execute the Agreement for Further Sampling, that agreement will become an additional addendum to this agreement. The cost of the additional sampling is in addition to the Mold Inspection and Sampling fee.

Initial Sampling/Lab Testing. Following the visual inspection, samples may be taken by means of air (sample(s) indoor and one outdoor), carpet, wall cavity, direct (tape lift, swab, bulk). The samples will be sent to an EMPAT / EMLAP certified lab, which

will analyze them for the presence of mold. The lab will then issue a report detailing the presence and type(s) of mold, if any, found in the samples. A reference guide will be provided, which explains the various types of mold along with any recommended action(s).

Report of Mold Inspection and Sampling Results. Following the visual inspection and additional sampling (if conducted), You will be provided with a written report identifying: Types and levels of molds read in samples along with sample locations; a description of each type of mold discovered; and a summary of findings. **If all identified "red flag" areas are sampled, Remediation Specifications may be created from the findings.** These specifications will identify remediation activities based on current guidelines.

Notice of Claims. You understand and agree that any claim(s) or complaint(s) arising out of or related to any alleged act or omission in connection with the Inspection shall be reported to us, in writing, within ten (10) business days of discovery. Unless there is an emergency condition, you agree to allow us a reasonable period of time to investigate the claim(s) or complaint(s) by, among other things, re-inspection before you, or anyone acting on your behalf, repairs, replaces, alters or modifies the system or component that is the subject matter of the claim. **You understand and agree that any failure to timely notify us and allow adequate time to investigate as stated above shall constitute a complete bar and waiver of any and all claims you may have against us related to the alleged act or omission unless otherwise prohibited by law.**

Arbitration. Any dispute concerning the interpretation of this Agreement or arising from the Inspection and Report (unless based on payment of fee) shall be resolved by binding, non-appealable arbitration conducted in accordance with the rules of the American Arbitration Association, except that the parties shall mutually agree upon an Arbitrator who is familiar with the home inspection industry.

Limitations Period. Any legal action arising from this Agreement or from the Inspection and Report, including (but not limited to) the arbitration proceeding more specifically described above, must be commenced within one (1) year from the date of the Inspection. **Failure to bring such an action within this time period shall be a complete bar to any such action and a full and complete waiver of any rights or claims based thereon.** This time limitation period may be shorter than provided by state law.

UNCONDITIONAL RELEASE AND LIMITATION OF LIABILITY. IT IS UNDERSTOOD AND AGREED THAT WE AND THE LAB ARE NOT INSURERS AND, THAT THE INSPECTION AND REPORT TO BE PROVIDED UNDER THIS AGREEMENT SHALL NOT BE CONSTRUED AS A GUARANTEE OR WARRANTY OF THE ADEQUACY, PERFORMANCE OR CONDITION OF ANY STRUCTURE, ITEM, OR SYSTEM AT THE SUBJECT PROPERTY. YOU HEREBY RELEASE AND EXEMPT US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES OF AND FROM ALL LIABILITY AND RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY UNREPORTED DEFECT OR DEFICIENCY AND FOR ANY CONSEQUENTIAL DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY OF ANY NATURE. IN THE EVENT THAT WE, THE LAB OR OUR RESPECTIVE AGENTS OR EMPLOYEES ARE FOUND LIABLE DUE TO BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENT MISREPRESENTATION, NEGLIGENT HIRING OR ANY OTHER THEORY OF LIABILITY, THEN THE CUMULATIVE AGGREGATE TOTAL LIABILITY OF US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES SHALL BE LIMITED TO A SUM EQUAL TO THE AMOUNT OF THE FEE PAID BY YOU FOR THE INSPECTION AND REPORT.

Confidentiality. You understand that the Inspection is being performed (and the Report is being prepared) for your sole, confidential and exclusive benefit and use. The Report, or any portion thereof, is not intended to benefit any person not a party to this Agreement, including (but not limited to) the seller or the real estate agent(s) involved in the real estate transaction ("third party"). *If you directly or indirectly allow or cause the Report or any portion thereof to be disclosed or distributed to any third party, you agree to indemnify, defend, and hold us harmless for any claims or actions based on the Inspection or the Report brought by the third party.*

MOLD INSPECTION AND SAMPLE(S)

Area(s) to Be Sampled*	Type of Sample	Quantity	Price	Total	Initials
	Air / Direct / Carpet / Wall		@ \$	= \$	
	Air / Direct / Carpet / Wall		@ \$	= \$	
	Air / Direct / Carpet / Wall		@ \$	= \$	

AGREEMENT FOR FURTHER SAMPLING

Mold Inspection and Results: Based upon the results of the Mold Inspection, We recommend that additional samples be taken in the Subject Property. A checked box indicates the condition(s) warranting this recommendation below. You will be provided information within the written Mold Inspection and Sampling Report identifying the areas of the Subject Property where microbial problems or conditions indicating microbial problems were discovered. This Agreement is not intended to be a substitute or replacement for the visual inspection. Any and all additional samples will be sent to an EMPAT / EMLAP certified lab that will analyze them for the presence of mold. All sample results will be included in the Mold Report defined in the Mold Inspection and Sampling Agreement.

- Evidence of suspected mold growth is visible in one or more areas of the property. It is recommended that samples in these areas be taken and tested.
- A "Red Flag" condition exists in the Subject Property that may indicate a need for sampling. Although there may be no visible signs of mold growth, this condition is conducive to mold growth that could be present in areas not readily visible. The tests recommended are: indoor air sampling, which will identify the type(s) of mold present, if any, and the concentrations of mold spores; a carpet test which will give "historical" data; and/or an inner wall sampling.

Based on the above-checked items, the Client agrees to have the following samples taken in the home, as indicated by Your initials.

Location of Area to Be Sampled*	Type of Sample	Quantity	Price	Total	Initials
	Air / Direct / Carpet / Wall		@ \$	= \$	
	Air / Direct / Carpet / Wall		@ \$	= \$	

*We recommend sampling each of the areas identified in the Mold Report having evidence of microbial problems (or conditions conducive thereto). Whether and which additional samples are taken is in the sole discretion of the Client.

Clients authorize and request the Inspector to take the samples initialed above. Clients understand that by requesting further sampling that this Agreement For Further Sampling becomes an additional addendum to the Mold Survey Agreement and subject to the terms thereof. Clients further acknowledge and agree that the Inspector may notify the homeowner or occupants of the Subject Property (if other than me/us) of any conditions in the Subject Property that may pose a health or safety concern."

Authorized Signature Date

The undersigned Client(s), acknowledge that Client(s) have been advised and encouraged to have the Subject Property tested for mold, and that client(s) understand that the presence of certain types of mold prevalent in housing can pose severe health hazards. Client(s) **decline** that the Inspector conducts the services recommended above. Client(s) agree to hold harmless the Inspector for any damages or responsibility for building conditions which remain undiscovered regarding the discovery of mold and mold spores." **Also, clients understand that Remediation Specifications cannot be produced unless the above mentioned samples are collected and analyzed.**

Authorized Signature Date

Fees. The base fee for this Mold Inspection and Sampling is \$_____ + Additional Samples @ \$_____ (See above table for details)
Total Fee \$_____

THIS INSPECTION, INSPECTION AGREEMENT AND REPORT DO NOT CONSTITUTE A WARRANTY, AN INSURANCE POLICY, OR A GUARANTEE OF ANY KIND; NOR DO THEY SUBSTITUTE FOR ANY DISCLOSURE STATEMENT AS MAY BE REQUIRED BY LAW. By signing below, You acknowledge that You have read, understand, and agree to the terms and conditions of this agreement, including (but not limited to) the limitation of liability, arbitration clause and limitation period, and agree to pay the fee listed in the shaded box above. In addition, You acknowledge and agree that the Inspector may notify the homeowner or occupants of the Subject Property (if other than You), as well as any appropriate public agency, of any condition(s) discovered that may pose a safety or health concern.

Client Name _____

Property Address _____

Street Name City State Zip

CLIENT INSPECTOR

Client's Signature Date Company Name: Date
Title:

Environmental Solutions Association

HVAC Inspection Protocols

Standard Number 1103A

1. Purpose

1.1 The purpose of a full inspection of an HVAC system is to discover and document any contamination and source of contamination, i.e. visible mold in the HVAC unit due to moisture intrusion from damaged roof.

2. Scope

2.1 An HVAC system inspection is intended to determine if the HVAC is a source of contamination to the rest of the building. A complete inspection of all the interior areas of the HVAC is required, including visual inspection and testing, to decide whether the contamination is happening within the HVAC system.

3. Procedure

3.1 Remove HVAC cover exposing the blower unit

3.1.1 Take photos of the blower unit (refer to Standard 1106) and document any contamination.

3.2 Remove HVAC filter

3.2.1 Take photos of the filter (refer to Standard 1106) and document any contamination or if filter is damaged or missing

3.3 Remove any covers over the return

3.3.1 Take photos (refer to Standard 1106) and document any contamination or damage.

3.4 Remove any covers over the coils

3.4.1 Take photos (refer to Standard 106) and document any contamination and source of contamination

3.5 Plenum area

3.5.1 Try to get photos inside the plenum. If you cannot get photos in the plenum or supply make notes of any contamination

3.6 If the HVAC unit is in the attic, photos (refer to standard 1106) are to be taken of all supply lines including distribution boxes

3.7 Inspection of vents

3.7.1 Take photo (refer to standard 1106) of every vent in the building

3.7.2 Inspect every vent in the building and document any contamination on the vents and source of contamination

INTRUSIVE INSPECTION AGREEMENT

THIS AGREEMENT LIMITS OUR LIABILITY – PLEASE READ IT CAREFULLY

This Intrusive Inspection Agreement (the “Agreement”) is made effective on the date stated on page 2 of this agreement by and between the Inspection company named on Page 2 of this agreement (hereinafter “Inspector”, “we”, “us” and “our”) and client named on Page 2 of this agreement (hereinafter “Client,” “You” or “Your”) (collectively “parties”). We are an independently owned and operated company engaged in the business of providing environmental inspection services utilizing a qualified lab for environmental laboratory analysis. You desire to have an Inspection (the “inspection”) performed at the address stated on Page 2 of this agreement that requires Us to gain access to a typically non-accessible area.

Purpose. The purpose of an intrusive inspection is to gain access to a non-accessible area that may be a hidden source of unseen contamination of the Subject Property and collect appropriate samples if identified. This may be an addendum to another signed agreement by You.

Scope of an Intrusive Inspection. A typical visual inspection is performed in readily accessible areas for contaminants and/or conditions that may indicate the presence of contaminants (“red flags”), for example, mold and/or evidence of water penetration, VOCs, bacteria, etc. If the visual inspection shows no or one “red flag” area, then samples will typically be taken. The objective of the intrusive inspection is to determine whether potential contaminants exist in the non-accessible area(s) at the time the inspection is performed. Some areas may be deemed non-accessible where a potential contamination exists which may be hidden and an intrusive inspection may have to be performed. As such, the result of an intrusive inspection is not a guarantee that contaminants do or do not / will or will not exist in the subject property; the results are indicative only of the presence or absence in the areas inspected. This inspection consists of potentially drilling a small hole in an area of a “Red Flag” or removing a fixture (receptacle/light switch cover, ceiling tile, etc.) NEVER attempt to incorporate remediation activities (unless YOU are fully qualified); You should consult a Remediation Specialist or other appropriate Professionals concerning the specific contamination. It is important to note that all “red flag” areas identified should have samples collected if Remediation Specifications are to be produced.

Intrusive Inspection/Exclusions. The intrusive inspection is limited to the area that was made accessible only. Certain structural areas are considered inaccessible and impractical to inspect including but not limited to: areas beneath wood floors over concrete; block walls; and areas to which there is no access without defacing or tearing out lumber, masonry, roofing or finished workmanship; structures; portions of an area protected by a fire wall, permanent fixtures such as a tub, shower stall; crawl space made inaccessible due to construction; enclosed bay windows; areas where locks prevented access; areas concealed by appliances; areas concealed by stored materials. Note: There is no economically practical method to make these areas accessible. However, they may be subject to contamination. NO OPINION IS RENDERED CONCERNING THE CONDITIONS IN THESE AFOREMENTIONED OR OTHER INACCESSIBLE AREAS. However, by signing and agreeing to an intrusive inspection of the possible inaccessible areas, YOU understand that WE will make these areas accessible by potentially drilling a small hole into the suspected area(s) or removal of fixtures to view the area with a borescope or other inspection devices.

Notice of Claims. You understand and agree that any claim(s) or complaint(s) arising out of or related to any alleged act or omission in connection with the Inspection shall be reported to us, in writing, within ten (10) business days of discovery. Unless there is an emergency condition, you agree to allow us a reasonable period of time to investigate the claim(s) or complaint(s) by, among other things, re-inspection before you, or anyone acting on your behalf, repairs, replaces, alters or modifies the system or component that is the subject matter of the claim. **You understand and agree that any failure to timely notify us and allow adequate time to investigate as stated above shall constitute a complete bar and waiver of any and all claims you may have against us related to the alleged act or omission unless otherwise prohibited by law.**

Arbitration. Any dispute concerning the interpretation of this Agreement or arising from the Inspection and Report (unless based on payment of fee) shall be resolved by binding, non-appealable arbitration conducted in accordance with the rules of the American Arbitration Association, except that the parties shall mutually agree upon an Arbitrator who is familiar with the home inspection industry.

Limitations Period. Any legal action arising from this Agreement or from the Inspection and Report, including (but not limited to) the arbitration proceeding more specifically described above, must be commenced within one (1) year from the date of the Inspection. **Failure to bring such an action within this time period shall be a complete bar to any such action and a full and complete waiver of any rights or claims based thereon.** This time limitation period may be shorter than provided by state law.

UNCONDITIONAL RELEASE AND LIMITATION OF LIABILITY. IT IS UNDERSTOOD AND AGREED THAT WE AND THE LAB ARE NOT INSURERS AND, THAT THE INSPECTION AND REPORT TO BE PROVIDED UNDER THIS AGREEMENT SHALL NOT BE CONSTRUED AS A GUARANTEE OR WARRANTY OF THE ADEQUACY, PERFORMANCE OR CONDITION OF ANY STRUCTURE, ITEM, OR SYSTEM AT THE SUBJECT PROPERTY. YOU HEREBY RELEASE AND EXEMPT US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES OF AND FROM ALL LIABILITY AND RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY UNREPORTED DEFECT OR DEFICIENCY AND FOR ANY CONSEQUENTIAL DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY OF ANY NATURE. IN THE EVENT THAT WE, THE LAB OR OUR RESPECTIVE AGENTS OR EMPLOYEES ARE FOUND LIABLE DUE TO BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENT MISREPRESENTATION, NEGLIGENT HIRING OR ANY OTHER THEORY OF LIABILITY, THEN THE CUMULATIVE AGGREGATE TOTAL LIABILITY OF US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES SHALL BE LIMITED TO A SUM EQUAL TO THE AMOUNT OF THE FEE PAID BY YOU FOR THE INSPECTION AND REPORT.

Environmental Solutions Association

The Standard Method For Clearance Testing

Standard Number 1104

1. Purpose

- 1.1** Clearance testing is designed to determine the effectiveness of remediation efforts and to document the absence of microbial problems before renovations begin.

2. Scope

- 2.1** The nature and extent of the sampling is directed by an Indoor Air Quality (IAQ) Specialist (i.e., a Certified Industrial Hygienist (CIH) or an Industrial Hygienist) as part of the remediation plan prescribed for the property. Clearance testing is conducted within containment areas after remediation efforts have been completed. Containment areas are portions of the building that were sealed with polyethylene to limit spread of contamination during remediation.

3. Procedure

- 3.1** Read the clearance instructions carefully, as many jobs have unique sampling specifications.
- 3.2** 24 hours before the scheduled inspection, call and confirm the date and time with the client. Inform the client to have all air handling equipment inside containment area(s) (air scrubbers, blowers, dehumidifiers, HEPA filters, etc.) de-energized for a minimum of twenty-four (24) hours before the scheduled inspection time to allow airborne particulates to settle. Do not enter the work area during that 24-hour period.
- 3.3** Create a Clearance Inspection packet with the following information:
 - 3.3.1** Client information on the Clearance Sampling Information Sheet;
 - 3.3.2** Client information on a Chain-Of-Custody (refer Standard 1107);
 - 3.3.3** Client information on a Clearance Inspection Agreement (#1104A);
 - 3.3.4** Extra blank copies of all Field Forms (#1201-1217).
- 3.4** Arrive at the inspection site 15 minutes before the scheduled inspection time.
- 3.5** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have the appropriate answers to the most commonly asked questions received during a Clearance Inspection.
- 3.6** Explain the Clearance Test Inspection Agreement and what you are going to be doing, as well as what you are not going to be doing.
- 3.7** Give your client plenty of time to review and sign the Agreement. You can begin your work, but let the client know that you will not be able to issue a report until you have the Inspection Agreement signed and in your possession.
- 3.8** Ask the client to provide to you a copy of the remediation specifications. This will establish all areas to be sampled in the subject property.

- 3.9** If applicable, verify that all air handling equipment located inside the containment area(s) (air scrubbers, blowers, dehumidifiers, HEPA filters, etc.) is de-energized. If not, have them reschedule an inspection and note that fact on the Clearance Sampling Information Sheet.
- 3.10** Review remediation specifications. Ensure that the client has a clearly defined understanding of what constitutes adequate clearance. Since there are no currently established Threshold Limit Values (TLVs) for the majority of substances of biological origins associated with building-related exposures, ESA and most labs follow the guidance of the American Conference of Governmental Industrial Hygienists (ACGIH). Clearance testing will be conducted when mold remediation and cleanup efforts are completed but before containment is removed as defined in the remediation specifications.
- 3.11** Take a digital photograph of the front of the dwelling for identification.
- 3.12** Conduct visual assessment of all areas identified for remediation and cleaning activities. Complete the appropriate area(s) of the Clearance Sampling Information Sheet. **Clearance protocols must be followed in their entirety.**
- 3.13** For clearance, verify containment is serving its intended purpose as outlined in the remediation specifications and is still in place. **As you enter each area make sure that you do not breach or disturb the containment.**
- 3.13.1** Document on the Clearance Sampling Information Sheet what (if any) contents are inside the containment area(s).
- 3.13.2** Determine if *all* required remediation and cleaning work has been completed and *all* visible mold(s) have been removed. Complete the appropriate area(s) of the Clearance Sampling Information Sheet.
- 3.13.3** Determine if there is visible settled dust or debris in the interior or around the exterior of the containment area. Complete the appropriate area(s) of the Clearance Sampling Information Sheet.
- 3.13.4** Determine if encapsulants have been applied to any surface during the remediation efforts. If an encapsulant has been applied, document this with photos and on the Clearance Sampling Information Sheet.
- 3.14** If an encapsulant has been applied, or if visible mold, dust and/or debris are present, the following steps are to be taken and documented on the appropriate Affected Room Form:
- 3.14.1** Document all specified work that was not completed; had an encapsulant applied; or if visible mold, dust and debris is observed;
- 3.14.2** Do *not* take any air samples if remediation is incomplete, if there is still elevated moisture, if it is freezing indoors, if weather conditions prohibit comparison sampling, or if the area is open to the outdoors;
- 3.14.3** Take at least three (3) digital photographs of all assessment failures resulting from visible mold, improper containment, applied encapsulant, accumulated dust and debris, and contents that are not identified as being inside the containment or cleaned.
- 3.15** In each work area, collect two (2) samples, one (1) indoor air sample and one (1) swab or tape lift sample and only one (1) outdoor sample for base line comparison. Do not take any air samples if remediation is incomplete, if there is still elevated moisture, if it is freezing indoors; if weather conditions prohibit comparison sampling, or if the area is open to the outdoors.

- 3.16** Complete the appropriate area(s) of the Clearance Sampling Information Sheet, and as with all laboratory samples, properly complete the Chain-of-Custody (COC) form.
- 3.17** Ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.18** Have all air handling equipment inside containment area(s) (air scrubbers, blowers, dehumidifiers, HEPA filters, etc.) turned on until clearance is achieved.
- 3.19** Thank the client for their time. Let them know that the average time for the report is up to one week, and you will be contacting them when you receive the report.

This is determined by how fast you get your samples to the lab. You should add two business days from receipt of your samples from the laboratory results and two additional days if you have an Industrial Hygiene team write the final report of findings.
- 3.20** Complete a Quality Control evaluation of your field sheets to make sure all data elements have been properly annotated on your field forms. Also, make sure all samples are appropriately labeled and the Chain-of-Custody form reflects the correct information. As a minimum, before leaving the site you will cross check the following items to ensure completeness and accuracy:
 - 3.14.1** Field Forms;
 - 3.14.2** Photo Logs;
 - 3.14.3** Chain-of-Custody;
 - 3.14.4** Lab Samples;
 - 3.14.5** Narratives and additional notes.
- 3.21** Overnight the Chain-of-Custody and all samples to the lab.
- 3.22** Take and retain photos of the job.
 - 3.22.1** Follow Standard 1106 for photographs.
- 3.23** Deliver the report to your client and answer any immediate questions they might have. Obtain the client's email address when they place their order; their report can be emailed to reduce your delivery cost.
- 3.24** Be available to your client for any additional follow-up questions and assistance.

References

ACGIH: *Bioaerosols: Assessment and Control*, Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH (1999).

ESA: Environmental Solutions Association, Williamsport, PA.

Environmental Solutions Association

The Standard Method For Post-Cleaning Testing

Standard Number 1105

1. Purpose

- 1.1** Post-cleaning testing is designed to determine the effectiveness of remediation efforts and whether or not mold problems still exist in a designated area where no containment was in place for the remediation effort.

2. Scope

- 2.1** Post-cleaning testing consists of a visual assessment for mold problems in area(s) of cleaning activities and the collection and analysis of sample(s) in these designated area(s). Post-cleaning testing is defined as air samples collected indoors being quantitatively equal to or less than the outdoor samples, and qualitatively similar. Post-cleaning testing will be conducted when mold removal and cleanup efforts are completed that did not require containment.

3. Procedure

- 3.1** Read the clearance instructions carefully, as many jobs have unique sampling specifications.
- 3.2** 24 hours before the scheduled inspection, call and confirm the date and time with the client. If applicable, inform the client to have all air handling equipment inside containment area(s) (air scrubbers, blowers, dehumidifiers, HEPA filters, etc.) de-energized for a minimum of twenty-four (24) hours before the scheduled inspection time to allow airborne particulates to settle. Do not enter the work area during that 24-hour period.
- 3.3** Put together a Post-Cleaning Inspection packet with the following information:
 - 3.3.1** Client information on the Post-Cleaning Information Sheet;
 - 3.3.2** Client information on a Chain-Of-Custody (refer to Standard 1107);
 - 3.3.3** Client information on a Post-Cleaning Inspection Agreement (form #1105A);
 - 3.3.4** Extra blank copies of all Field Forms (#1201-1217).
- 3.4** Arrive at the inspection site 15 minutes before the scheduled inspection time.
- 3.5** Meet, greet, and show proper identification to the person providing access to the subject property. Try to have the appropriate answers to the most commonly asked questions received during a Post-Cleaning Inspection.
- 3.6** Explain the Post-Cleaning Inspection Agreement; what you are going to be doing, as well as what you are not going to be doing.
- 3.7** Give your client plenty of time to review and sign the Agreement. You can begin your work, but let the client know that you will not be able to issue a report until you have the Inspection Agreement signed and in your possession.
- 3.8** Ask the client to identify where the mold cleaning efforts took place. This will establish all areas to be sampled in the subject property.

- 3.9** If applicable, verify that all air handling equipment located inside the work area(s) (air scrubbers, blowers, dehumidifiers, HEPA filters, etc.) are de-energized. If not, have them reschedule an inspection and note that fact on the Post-Cleaning Sampling Information Sheet.
- 3.10** Review remediation specifications; ensure that the client has a clearly defined understanding of what constitutes adequate post-cleaning. Since there are no currently established Threshold Limit Values (TLVs) for the majority of substances of biological origins that are associated with building-related exposures; ESA and most labs follow the guidance of the American Conference of Governmental Industrial Hygienists (ACGIH). Post-cleaning testing will be conducted when mold remediation and cleanup efforts are completed as defined in the cleaning specifications.
- 3.11** Take a digital photograph of the front of the dwelling for identification.
3.11.1 Follow Standard 1106 for photographs.
- 3.12** Conduct a visual assessment of all areas identified for remediation and cleaning activities. Complete the appropriate area(s) of the Post-Cleaning Sampling Information Sheet. **Post-cleaning protocols must be followed in their entirety.**
- 3.12.1** Document, on the Post-Cleaning Information Sheet, what (if any) contents are inside the work area(s).
- 3.12.2** Determine if *all* required remediation and cleaning work has been completed and *all* visible mold(s) have been removed. Complete the appropriate area(s) of the Post-Cleaning Information Sheet.
- 3.12.3** Determine if there is visible settled dust, or debris in the interior or around the exterior of the work area. Complete the appropriate area(s) of the Post-Cleaning Information Sheet.
- 3.12.4** Determine if encapsulants have been applied to any surface during the remediation efforts. If an encapsulant has been applied, document this with photos and on the Post-Cleaning Information Sheet.
- 3.13** If an encapsulant has been applied, visible mold, dust, and debris are present, the following steps are to be taken and documented on the appropriate Affected Room Form:
- 3.13.1** Document all specified work that was not completed, had an encapsulant applied, or visible mold, dust and debris observed;
- 3.13.2** Do *not* take any air samples if remediation is incomplete, there is still elevated moisture, it is freezing indoors, weather conditions prohibit comparison sampling or the area is open to the outdoors;
- 3.13.3** Take at least three (3) digital photographs of all assessment failures resulting from visible mold, improper containment, encapsulant applied, accumulated dust and debris and contents that are not identified as being inside the work area or cleaned.
- 3.15** In each work area, collect two (2) samples, one (1) indoor air sample and one (1) swab or tape lift sample and only one (1) outdoor sample for base line comparison. Do not take any air samples if remediation is incomplete, there is still elevated moisture, it is freezing indoors, weather conditions prohibit comparison sampling or the area is open to the outdoors.
- 3.16** Complete the appropriate area(s) of the Post-Cleaning Information Sheet; and as with all laboratory samples, properly complete the Chain-of-Custody (COC) form.

- 3.17 Ensure the residence is left in the same condition as when you arrived. Take all trash (wrappers from swabs, tape from Air-O-Cells, gloves, etc.) with you when you depart.
- 3.18 Thank the client for their time. Let them know that the average time for the report is up to one week and you will be contacting them when you receive the report. This is determined by how fast you get your samples to the lab.
- 3.19 You should add two business days from receipt of your samples from the laboratory results and two additional days if you have an Industrial Hygiene team or IAQ Specialist (i.e., a Certified Industrial Hygienist, Industrial Hygienist) write the final report of findings.
- 3.20 Complete a Quality Control evaluation of your field sheets to make sure all data elements have been properly annotated on your field forms. Also make sure all samples are appropriately labeled and the Chain-of-Custody form reflects the correct information. As a minimum, before leaving the site you will cross check the following items to ensure completeness and accuracy:
 - 3.20.1 Field Forms;
 - 3.20.2 Photo Logs;
 - 3.20.3 Chain-of-Custody;
 - 3.20.4 Lab Samples;
 - 3.20.5 Narratives and additional notes.
- 3.21 Overnight the Chain-of-Custody and all samples to the lab.
- 3.22 Take and retain photos of the job.
 - 3.22.1 Follow Standard 1106 for photographs.
- 3.23 Deliver the report to your client and answer any immediate questions they might have. Obtain the client's email address when they place their order; their report can be emailed to reduce your delivery cost.
- 3.24 Be available to your client for any additional follow-up questions and assistance.

References

ACGIH: *Bioaerosols: Assessment and Control*, Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH (1999).

ESA: Environmental Solutions Association, Williamsport, PA.

MOLD POST-REMEDICATION VERIFICATION (PRV) AGREEMENT

THIS AGREEMENT LIMITS OUR LIABILITY – PLEASE READ IT CAREFULLY

This Mold Post-Remediation Verification Agreement (the “Agreement”) is made effective on the date stated on page 2 of this agreement by and between the affiliated Inspection company named on Page 2 of this agreement (hereinafter “Inspector”, “we”, “us” and “our”) and client named on Page 2 of this agreement (hereinafter “Client,” “You” or “Your”) (collectively “parties”). We are an independently owned and operated company engaged in the business of providing professional mold inspection and sampling services utilizing an EMPAT / EMLAP certified lab for environmental laboratory analysis. You desire to have a Mold Post-Remediation Verification with sampling performed in the area(s) where remediation of identified mold(s) was performed on a subject property located at the address stated on Page 2 of this agreement.

Purpose. The purpose of the Mold PRV Sampling is to determine the success of the allergen remediation and/or cleaning efforts which includes sampling in Client identified area(s) to document that the areas cleaned are safe for occupants to safely enter.

Scope of PRV Sampling. PRV Sampling consists of a visual assessment for mold problems in area(s) where remediation and/or cleaning activities occurred and the collection/analysis of sample(s) in these designated area(s). Further, the objective of PRV Sampling is to determine if mold problems still exist in the designated remediation area(s) sampled. As such, the results of PRV Sampling is not a guarantee that mold does or does not exist in the house; the results are indicative only of the presence or absence of mold in the areas sampled at the time the service is performed. In light of no currently established Threshold Limit Values (TLVs) for the majority of substances of biological origins that are associated with building-related exposures, we follow the guidance of the American Conference of Governmental Industrial Hygienists (ACGIH) 19.5.3.1. Clearance is defined as air samples collected indoors being quantitatively equal to or less than the outdoor samples, and qualitatively similar. PRV Sampling will be conducted when mold remediation and cleanup efforts are completed.

The Inspector is a generalist and is not a Certified Industrial Hygienist or expert in any specific craft or trade. If the Inspector or report recommends further action, including but not limited to consulting with a specialized expert(s), you must do so at your own expense or otherwise assume all risks associated with failure to do so. **This inspection is not technically exhaustive.** The fee charged for this Inspection is substantially less than that of a technically exhaustive inspection.

Visual Assessment. The purpose of the visual assessment is to identify visual dust/debris and/or mold contamination or conditions that indicate remediation activities have not been successfully completed. The visual assessment of completed remediation work should be done in each remediated / cleaned area to ensure that all areas are examined. It is essential that clearance examiners have full knowledge of the extent of the work and specifically which surfaces did *not* require remediation. The PRV examiner should have access to any mold inspection report as well as the job scope of work or specifications and a report from the owner or contractor that the work has been completed. Following the visual assessment, sample collection and lab results, You will be provided with a written report stating whether the remediation efforts pass or fail.

Scope of Visual Assessment/Exclusions. THE SCOPE OF THE VISUAL ASSESSMENT IS LIMITED TO READILY ACCESSIBLE AREAS DESIGNATED BY THE CLIENT ONLY. We do not remove floor and wall coverings or move furniture, open walls or perform any type of destructive inspection. Certain structural areas are considered inaccessible and impractical to inspect including but not limited to: the interiors of walls and inaccessible areas below; areas beneath wood floors over concrete; areas concealed by floor coverings; and areas to which there is no access without defacing or tearing out lumber, masonry, roofing or finished workmanship; structures; portions of the attic concealed or made inaccessible by insulation, belongings, equipment or ducting; portions of the attic or roof cavity concealed due to inadequate crawl space; areas of the attic or crawl space made inaccessible due to construction; interiors of enclosed boxed eaves; portions of the sub area concealed or made inaccessible by ducting or insulation; enclosed bay windows; portions of the interior made inaccessible by furnishings; areas where locks prevent access; areas concealed by appliances; areas concealed by stored materials; and areas concealed by heavy vegetation. Note: There is no economically practical method to make

these areas accessible. However, they may be subject to attack by mold organisms. **NO OPINION IS RENDERED CONCERNING THE CONDITIONS IN THESE AFOREMENTIONED OR OTHER INACCESSIBLE AREAS.**

Sampling. Mold PVR sampling consists of sampling all remediated areas using the ACGIH air sampling protocol. For each remediated area, two (2) samples (1 air and 1 direct) will be collected and a minimum of one (1) outdoor sample collected. The samples will be sent to an EMPAT / EMLAP certified lab, which will analyze them for the presence of mold. The lab will then issue a report detailing the presence and type(s) of mold. Acceptable is reached when air samples collected indoors being quantitatively equal to or less than the outdoor samples, and direct samples have no presence of mold.

Services. Sampling locations are listed on the reverse side of this Mold PRV Agreement.

Notice of Claims. You understand and agree that any claim(s) or complaint(s) arising out of or related to any alleged act or omission in connection with the Inspection shall be reported to us, in writing, within ten (10) business days of discovery. Unless there is an emergency condition, you agree to allow us a reasonable period of time to investigate the claim(s) or complaint(s) by, among other things, re-inspection before you, or anyone acting on your behalf, repairs, replaces, alters or modifies the system or component that is the subject matter of the claim. **You understand and agree that any failure to timely notify us and allow adequate time to investigate as stated above shall constitute a complete bar and waiver of any and all claims you may have against us related to the alleged act or omission unless otherwise prohibited by law.**

Arbitration. Any dispute concerning the interpretation of this Agreement or arising from the Inspection and Report (unless based on payment of fee) shall be resolved by binding, non-appealable arbitration conducted in accordance with the rules of the American Arbitration Association, except that the parties shall mutually agree upon an Arbitrator who is familiar with the home inspection industry.

Limitations Period. Any legal action arising from this Agreement or from the Inspection and Report, including (but not limited to) the arbitration proceeding more specifically described above, must be commenced within one (1) year from the date of the Inspection. **Failure to bring such an action within this time period shall be a complete bar to any such action and a full and complete waiver of any rights or claims based thereon.** This time limitation period may be shorter than provided by state law.

UNCONDITIONAL RELEASE AND LIMITATION OF LIABILITY. IT IS UNDERSTOOD AND AGREED THAT WE AND THE LAB ARE NOT INSURERS AND, THAT THE INSPECTION AND REPORT TO BE PROVIDED UNDER THIS AGREEMENT SHALL NOT BE CONSTRUED AS A GUARANTEE OR WARRANTY OF THE ADEQUACY, PERFORMANCE OR CONDITION OF ANY STRUCTURE, ITEM, OR SYSTEM AT THE SUBJECT PROPERTY. YOU HEREBY RELEASE AND EXEMPT US, H/M LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES OF AND FROM ALL LIABILITY AND RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY UNREPORTED DEFECT OR DEFICIENCY AND FOR ANY CONSEQUENTIAL DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY OF ANY NATURE. IN THE EVENT THAT WE, THE LAB OR OUR RESPECTIVE AGENTS OR EMPLOYEES ARE FOUND LIABLE DUE TO BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE MISREPRESENTATION, NEGLIGENCE HIRING OR ANY OTHER THEORY OF LIABILITY, THEN THE CUMULATIVE AGGREGATE TOTAL LIABILITY OF US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES SHALL BE LIMITED TO A SUM EQUAL TO THE AMOUNT OF THE FEE PAID BY YOU FOR THE INSPECTION AND REPORT.

Services. The Client wishes to have Inspector collect samples in the following areas of the Subject Property:

Location or Area to Be Sampled	Type of Sample	Qty	Price	Total	Initials
1.	Air / Direct		@ \$	= \$	
2.	Air / Direct		@ \$	= \$	
3.	Air / Direct		@ \$	= \$	
4.	Air / Direct		@ \$	= \$	
5.	Air / Direct		@ \$	= \$	
6.	Air / Direct		@ \$	= \$	
7.	Air / Direct		@ \$	= \$	
8.	Air / Direct		@ \$	= \$	
9.	Air / Direct		@ \$	= \$	
10.	Air / Direct		@ \$	= \$	
11.	Air / Direct		@ \$	= \$	
12.	Air / Direct		@ \$	= \$	

Note: Attach separate form if additional samples are needed.

Fees. The total fee for this Mold PRV is \$ _____ (See above table for details).

THIS INSPECTION, INSPECTION AGREEMENT AND REPORT DO NOT CONSTITUTE A WARRANTY, AN INSURANCE POLICY, OR A GUARANTEE OF ANY KIND; NOR DO THEY SUBSTITUTE FOR ANY DISCLOSURE STATEMENT AS MAY BE REQUIRED BY LAW.

Confidentiality. You understand that the Inspection is being performed (and the Report is being prepared) for your sole, confidential and exclusive benefit and use. The Report, or any portion thereof, is not intended to benefit any person not a party to this Agreement, including (but not limited to) the seller or the real estate agent(s) involved in the real estate transaction ("third party"). **If you directly or indirectly allow or cause the Report or any portion thereof to be disclosed or distributed to any third party, you agree to indemnify, defend, and hold us harmless for any claims or actions based on the Inspection or the Report brought by the third party.**

By signing below, You acknowledge that You have read, understand, and agree to the terms and conditions of this agreement, including (but not limited to) the limitation of liability, arbitration clause and limitation period, and agree to pay the fee listed in the shaded box above. In addition, You acknowledge and agree that the Inspector may notify the homeowner or occupants of the Subject Property (if other than You), as well as any appropriate public agency, of any condition(s) discovered that may pose a safety or health concern.

Client Name _____

Property Address _____
 Street Name City State Zip

CLIENT _____ INSPECTOR _____

 Client's Signature Date Company Name: Date
 Title:

Environmental Solutions Association

The Standard Method For Photographing

Standard Number 1106

1. Purpose

- 1.1 The purpose of implementing proper color photography is essential to protect inspectors from liability. Photographs can be admitted as legal evidence, so proper documentation must be followed at the job site. Digital photography is recommended because you can view the frame taken immediately to ensure the picture quality. The digital camera utilized must be the type with the date imprinted on picture frame.

2. Scope

- 2.1 Digital photography consists of a documented collection of your visual assessment of possible sampling areas. Photographs are instrumental in recording contaminated areas and are always taken before sampling occurs. Photographs can enable an IAQ Specialist (i.e., a Certified Industrial Hygienist or an Industrial Hygienist) to create remediation specifications. Photographs should be 4” by 6” in size (with a resolution of 800 x 1200 pixels). Flash may be needed when direct lighting is not available on the subject.

3. Procedure of Photographing

- 3.1 Upon arrival at the job site, take a picture of the outside of the dwelling.
- 3.2 If a Limited Mold Sampling is called for, pictures should be taken only in “client defined” areas.
- 3.3 If a Mold Screen or Mold Survey Inspection is being performed, one (1) picture needs to be taken of each room within the dwelling. A minimum of three (3) pictures needs to be taken in “red flag” rooms.
- 3.4 If a “red flag” is discovered, photographs must be taken as follows:
- 3.4.1 One (1) “close-up photograph” detailing the problem (e.g. mold, dust, debris, etc.). The frame must capture the entire area of contamination;
- 3.4.2 One (1) “mid-range photograph” showing the surrounding areas adjacent to the problem; commonly taken from the center vantage point of the room;
- 3.4.3 One (1) “overview photograph” showing as much of the entire room as possible;
- 3.4.4 If applicable, take additional photos to clearly portray all affected areas and items in the room (contents, cabinets, furniture, appliances, etc.).
- 3.5 Fill out the proper paperwork on Photo Log Form #1207 as follows:
- 3.5.1 Document each picture frame taken with a reference number and room location, as well as a brief description of the photo taken;
- 3.5.2 An example of proper documentation would be:

Photo# Room Photo Taken In Description of Photo

Seq. 1	3-1	LR	Right entrance wall leakage
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- 3.5.3 Ensure the photographs are numbered in sequential order; identify with room location; and a brief description of photo taken at the time it was taken;
- 3.5.4 Always date the top of page and apply an identifying job number. Categorize the bottom of the page with the proper Page ___ of ___ identification;

- 3.5.5** Always carry extra Photo Logs on the job site, as some photo documentation can be lengthy;
- 3.5.6** Remember, a minimum of three (3) photographs per affected room. If the room is not affected, no form needs to be filled out.

References

ESA: Environmental Solutions Association, Williamsport, PA

Environmental Solutions Association

The Standard For A Chain-of-Custody (COC)

Standard Number 1107

1. Purpose

- 1.1 The Chain-Of-Custody form contains fields for reporting, sample identification and analysis requests. This form must accompany samples to be analyzed by a laboratory. This form is very important if litigation becomes involved. Upon completion of your sampling and assigning a unique number to your sampling device, you need to fill out your Chain-Of-Custody.

2. Chain-of-Custody Form

- 2.1 Each laboratory uses a unique Chain-Of-Custody form. If you have specific questions, contact your laboratory for answers on their Chain-Of-Custody form.

3. Procedure for Completion of Chain-of-Custody

- 3.1 Enter your company information including name, account number (if applicable), and phone number.
- 3.2 Enter the testing location information, including name (if applicable), address, and any additional notes.
- 3.3 Enter in the date of sampling.
- 3.4 Enter in the individual's name that collected the sample in the collected by, inspector or sampler space.
- 3.5 Enter a requested turn-around-time (tat).
- 3.6 Enter the unique sample identification number or sample information in the appropriate space.
- 3.7 Enter the date and time the sample was collected.
- 3.8 Enter the sampling media (air, carpet, dust cassette, swab, bulk, and wall).
 - 3.8.1 Air sampling requires an entry of the total sampling time of each sample, the calculated flow rate for the collected sample, and the total calculated air volume collected with the sampling media used.
- 3.9 Enter the information under the relinquished by:
 - 3.9.1 Enter the date and time the sample is mailed.
 - 3.9.2 Enter the name of the person who mailed the sample (relinquished by – this is the last person who handled the sample).
- 3.10 Make a copy of the completed form for your records.
- 3.11 Place the completed Chain-Of-Custody and the sample into the appropriate sample transport container; properly seal the container, affix the laboratory mailing information, and place into the appropriate shipping drop box.
 - 3.11.1 Consult your laboratory if unsure about sample storage and preservation requirements.

Section 2:

Procedures and Media for Non-Viable/Non-Culturable Mold Sampling

The following Standards in Section 2 have been developed with the intent of providing step-by-step Standards of practice for the collection of environmental samples for mold contamination.

These Standards do not include indications for sampling, data interpretation or promote a specific product.

When performing sampling Personal Protective Equipment (PPE) should be worn. The minimum items of PPE worn are a disposable facemask rated N-95 or higher, gloves, and eye protection.

Environmental Solutions Association

The Standard For Air Sampling (Non-Viable)

Standard Number 1201

1. Purpose

- 1.1** The purpose of air sampling is to collect a known amount of air through a collection device with an air pump in specific indoor environments as well as an outdoor comparison sample. The collected sample is then sent to a laboratory for analysis.

2. Scope

- 2.1** An air sample is collected in “client defined” or “red flag” areas and is not a complete assessment of the subject property. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations regarding extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in a designated area or areas.
- 2.3** The results of air sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled, at the time the air sampling was performed. All air samples are to be collected using the same sampling time, air flow, and type of sampling media.

3. Air Sampling Equipment and Sampling Devices

- 3.1** A vacuum pump and tubing which can draw an amount of air between 5-20 liters per minute (Lpm) (i.e., Gast, Megalite and Thomas air pumps) and which can be set at an elevation of 3'-6' in height (for example, using a sampling stand).
- 3.2** An air flow meter (Rotameter) which is attached either directly to the air pump or located inline between the air pump and sampling device (the rotameter is to be read at the middle of the ball).
- 3.3** A valid spore trap used in air sampling, including but not limited to, Air-O-Cell™ (Zefon International), Micro5™ (Environmental Monitoring Systems) and Cyclex-d™ (Environmental Monitoring Systems). If using a different media than listed, follow the manufacture’s recommendations.
 - 3.3.1** Qualify that the cassette has not met the expiration date or will not expire during analysis.
- 3.4** A calibration flow meter that meets the National Institute of Standards and Technology (NIST).
- 3.5** A cut-off timer that will stop the air sampling pump at the proper sampling time (refer to section 8).

4. Procedure for Indoor Air Sampling

- 4.1 Air samples are only taken in livable spaces using the same type of sampling media that was or will be used for the outdoor air sample using the same appropriate sample time (refer to section 7).
- 4.2 Air sampling is performed near the center of each room where “red flags” have been found.
- 4.3 If no “red flag” conditions are obvious, collection is made near the HVAC return.
- 4.4 Air sampling media is set at a respiration height of 3'-6' within a room.

5. Procedure for Outdoor Air Sampling (Control Sample)

- 5.1 An outside air sample must be taken when indoor air sample(s) are taken.
- 5.2 Air sampling is performed between 5'-10' away from the most frequently used entrance to the home, excluding under a roof overhang, carport, or porch.
- 5.3 Air sampling media is set at a respiration height of 3'-6'.
- 5.4 Air sampling should be performed during stable weather conditions using the same type of sampling media that was or will be used for the indoor air sample.
 - 5.4.1 Do not take outdoor air samples if: it is actively raining or rained within the past 2 hours, the temperature is below 32° Fahrenheit, or if snow or ice has completely covered the ground.
 - 5.4.2 If samples have to be taken during adverse weather conditions, then a deviation from Standards must be written or documented. The control sample will then be taken within an area in the building with no obvious “red flags.”

6. Flow Meter Rate (Rotameter)

- 6.1 Designate an air sampling media of choice and mark it in permanent marker as a NFAM (Not For Analysis Media) or a label that you will not send this sample to the lab.
- 6.2 Remove the protective end caps from the NFAM and place on the end of the tubing.
- 6.3 Turn the air sampling pump on.
- 6.4 Adjust the control on the Rotameter by placing the center of the ball to the recommended number flow rate for the sampling media (refer to Standards 1201.1, 1201.2, 1201.3).
- 6.5 When proper flow rate is achieved, turn the sampling pump off.
- 6.6 Remove the NAFM from the tubing and replace with the sampling media to be used.

7. Recommended Sampling Time Chart

Air Sampling Environment	Examples	Sampling Time
Calm	Windless, clean, clear, little dust	10 Minutes
Active	Breeze, mild dust, minor construction	5 Minutes
Highly Active	Construction, dusty	1 Minute

Note: Sampling chart based on manufacture’s recommendations. See sampling media subsections (i.e., 1201.1, 1201.2, 1201.3). Verify with sampling media.

8. Cut-Off Timer (Non AC/DC Pump Kit)

8.1 Plug cut-off timer into a live outlet.

8.1.1 Ensure that a battery back-up device is used in case of power outage during sampling.

8.2 Plug an extension cord capable of handling the air sampling pump into the cut-off timer.

8.3 Program timer to start and shut down the air sampling device using the appropriate sampling time (refer to section 7).

8.4 If more than one air sample is taken, move all equipment to the next sampling area and repeat prior steps in this section.

References

Air-O-Cell™ Cassettes, Zefon International, St. Petersburg, FL.

CyClex-d™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

Gast Air Pumps, Gast Manufacturing, Inc., Benton Harbor, MI.

MegaLite Air Pumps, EMS: Environmental Monitoring Systems, Charleston, SC.

Micro5™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

NIST: National Institute of Standards and Technology, Gaithersburg, MD.

Thomas Air Pumps, Thomas Industries, Inc., Louisville, KY.

Environmental Solutions Association

The Standard For Air-O-Cell™ Cassettes

Standard Number 1201.1

1. Purpose

- 1.1** The purpose of this Standard is to properly attain air samples using an Air-O-Cell cassette, utilizing 15 liters of air per minute at the appropriate sampling time.

2. Scope

- 2.1** An air sample is collected in “client defined” or “red flag” areas and is not a complete assessment of the subject property. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations, extent, or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in designated area or areas.
- 2.3** The results of air sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled, at the time the air sampling was performed.
- 2.4** All air samples are to be collected using the same sampling time, air flow, and type of sampling media, as defined in this Standard.

3. Procedure Utilizing an Air-O-Cell Cassette

- 3.1** Qualify that the Air-O-Cell cassette(s) that will be used has not met the expiration date or will not expire during analysis.
- 3.2** Plug battery back-up cut-off timer into a live outlet.
- 3.3** Plug extension cord or air pump supply cord into cut-off timer.
- 3.4** Turn air sampling pump on and pre-adjust the flow meter by placing on the tubing an NIST-approved calibrator or by using your NFAM Air-O-Cell cassette to 15 liters per minute.
- 3.5** Turn off the air sampling pump, and remove the calibrator or NFAM.
- 3.6** Place the qualified Air-O-Cell round end on the supplied tubing adaptor by removing the seals from both ends of the cassette, placing them on the side of the cassette, and attach the tubing adaptor with cassette to the inlet end of the sampling pump tubing.
- 3.7** Place the Air-O-Cell at respiration height on a sampling stand in the center of the room.
- 3.8** Program the timer to turn on, and shut down the air sampling pump for the appropriate sampling time (refer to Standard 1201, section 7).
- 3.9** When sampling is complete, place the seals over the ends of the cassette.
- 3.10** Properly label the cassette with a unique sample number or identification (i.e. outside, BD1).

- 3.11 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 3.12 If more than one air sample is taken, repeat prior steps in this section.
- 3.13 Package the cassette(s) and Chain-of-Custody, and overnight the cassette(s) to an appropriate laboratory for analysis.

References

Air-O-Cell™ Cassettes, Zefon International: St. Petersburg, FL.

Zefon: User's Manual for the Use of the Air-O-Cell™ Air Quality Particle Sampler, St. Petersburg, FL (2002).

Environmental Solutions Association

The Standard For Micro5™ Cassettes

Standard Number 1201.2

1. Purpose

- 1.1** The purpose of this Standard is to properly attain air samples using a Micro5 cassette utilizing 5 liters of air per minute at the appropriate sampling time.

2. Scope

- 2.1** An air sample is collected in “client defined” or “red flag” areas and is not a complete assessment of the subject property. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment, before mold can be identified in a designated area or areas.
- 2.3** The results of air sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled at the time the air sampling was performed.
- 2.4** All air samples are to be collected using the same sampling time, air flow, and type of sampling media as defined in this Standard.

3. Procedure Utilizing a Micro5 Cassette

- 3.1** Qualify that the Micro5 cassette(s) to be used has not met the expiration date or will not expire during analysis.
- 3.2** Plug battery back-up cut-off timer into a live outlet.
- 3.3** Plug extension cord or air pump supply cord into cut-off timer.
- 3.4** Turn air sampling pump on and pre-adjust the flow meter by placing on the tubing an NIST-approved calibrator or by using your NFAM Micro5 cassette to 5 Liters per minute.
- 3.5** Turn the air sampling pump off, and remove the calibrator or NFAM.
- 3.6** Place the qualified Micro5 on the tubing by removing the seals from both ends of the cassette, placing them close to the cassette, and attach the tubing to the cassette.
- 3.7** Place the Micro5 at respiration height on a sampling stand in the center of the room.
- 3.8** Program the timer to turn on and shut down the air sampling pump for the appropriate sampling time (refer to Standard 1201, section 7).
- 3.9** When sampling is complete, place the seals over the ends of the cassette.
- 3.10** Properly label the cassette with a unique sample number or identification (i.e. outside, BD1).
- 3.11** Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).

3.12 If more than one air sample is taken, repeat prior steps in this section.

3.13 Package the cassette(s) and Chain-of-Custody, and overnight the cassette(s) to an appropriate laboratory for analysis.

References

Micro5™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

Environmental Solutions Association

The Standard For CyClex-d™ Cassettes

Standard Number 1201.3

1. Purpose

- 1.1** The purpose of this Standard is to properly attain air samples using a CyClex-d cassette utilizing 20 liters of air per minute at the appropriate sampling time.

2. Scope

- 2.1** An air sample is collected in “client defined” or “red flag” areas and is not a complete assessment of the subject property. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations, extent, or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in a designated area or areas.
- 2.3** The results of air sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled at the time the air sampling was performed.
- 2.4** All air samples are to be collected using the same sampling time, air flow, and type of sampling media as defined in this Standard.

3. Procedure Utilizing a CyClex-d Cassette

- 3.1** Qualify that the CyClex-d cassette(s) to be used has not met the expiration date or will not expire during analysis.
- 3.2** Plug battery back-up cut-off timer into a live outlet.
- 3.3** Plug extension cord or air pump supply cord into cut-off timer.
- 3.4** Turn on air sampling pump and pre-adjust the flow meter by placing on the tubing an NIST-approved calibrator or by using your NFAM CyClex-d cassette to 20 liters per minute.
- 3.5** Turn off the air sampling pump and remove the calibrator or NFAM.
- 3.6** Place the qualified CyClex-d on the tubing by removing the seals from both ends of the cassette, placing them close to the cassette, and attach the tubing to the cassette.
- 3.7** Place the CyClex-d at respiration height on a sampling stand in the center of the room.
- 3.8** Program the timer to turn on and shut down the air sampling pump for the appropriate sampling time (refer to Standard 1201, section 7).
- 3.9** When sampling is complete, place the seals over the ends of the cassette.
- 3.10** Properly label the cassette with a unique sample number or identification (i.e. outside, BD1).

- 3.11 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 3.12 If more than one air sample is taken, repeat prior steps in this section.
- 3.13 Package the cassette(s) and Chain-of-Custody, and overnight the cassette(s) to an appropriate laboratory for analysis.

References

Air-O-Cell™ Cassettes, Zefon International, St. Petersburg, FL.

CyClex-d™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

EMS: “Sampling Procedures,” CyClex-d™ brochure, Charleston, SC (2002).

Micro5™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

NIST: National Institute of Standards and Technology, Gaithersburg, MD.

Environmental Solutions Association

The Standard For Common Swab Sample(s)

Standard Number 1301

1. Purpose

- 1.1** The purpose of swab sampling is to collect a sample where one sees visible mold or active moisture stains. The collected sample is then sent to a laboratory for analysis. Because spores may be disturbed, disposable gloves and a facemask are recommended.

2. Scope

- 2.1** A swab sample is collected in each room where there is visible mold. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in a designated area or areas.
- 2.3** The results of a swab sample are an analysis of the presence or absence of mold in the selected areas sampled, at the time the swab sample was performed.

3. Common Swab Sampling Devices

- 3.1** Swabs come with a plastic tube container with a liquid preservative stored in an ampoule at one end.
- 3.2** A valid swab to be used in swab sampling includes but is not limited to: Bacti-Swab™ (Remel), Venturi Transystem™ (Copan) and numerous others.

4. Procedure for Common Swab Sampling

- 4.1** Swab sampling is performed in each room where there is visible mold or water stains.
 - 4.1.1** If mold is found on different substrates or in different colors, a separate swab is used for each substrate or color.
- 4.2** Qualify that the collection and transport system has not met the expiration date or will not expire during analysis.
- 4.3** Hold the swab in the container upright with the liquid ampoule located at the top.
- 4.4** Pinch the ampoule so the liquid will flow down onto the swab, or follow manufacturer's instructions.
- 4.5** Pull on the cap to remove the moistened swab.
- 4.6** Sample the designated surface by rolling the wet swab over a one-inch square area.
- 4.7** Place the swab sample back in the tube and push the cap on tightly.
- 4.8** Properly label the swab with a unique sample number.
- 4.9** If more than one swab sample is taken, repeat prior steps.

4.10 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).

4.11 Package the swab(s) and Chain-of-Custody, and overnight the swab(s) to an appropriate laboratory for analysis.

References

Bacti-Swab™, REMEL, Lenexa, KS

Venturi Transystem™, Copan Innovation, Corona, CA

Environmental Solutions Association

The Standard For Carpet Cassette Sampling

Standard Number 1401

1. Purpose

- 1.1** The purpose of carpet sampling is to discover a previous or undetected mold problem(s) that may have been covered over or cleaned up. A carpet may contain a history of mold that has previously been or is in a building.

2. Scope

- 2.1** Carpet sampling is done using an air pump, a disposable template and a carpet cassette to vacuum a small area of the carpet as deep into the pile as possible. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2** Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in a designated area or areas.
- 2.3** The results of a carpet cassette sampling are an analysis of the presence or absence of mold in the selected areas sampled at the time the carpet sampling was performed.

3. Carpet Cassette Sampling Devices

- 3.1** Carpet sampling kits include a high volume pump, vinyl tubing, carpet cassette, flow meter, Luer adapters, disposable templates, zip bags and labels.

4. Procedure for Carpet Cassette Sampling

- 4.1** Calibrate the sample pump to 10 L/min before sampling (refer to Standard 1201, section 6).
- 4.2** Remove the plugs from the ends of the carpet cassette.
- 4.3** Insert the tubing adapter to the tubing (if applicable) and connect the cassette to the adapter.
- 4.4** Place the disposable template in an area of the carpet away from major foot traffic, and not under furniture, where a “red flag” or designation of sampling is to occur.
- 4.5** Turn on the pump and begin vacuuming the area inside the template using a back and forth side to side motion, then in an up and down cross direction.
- 4.6** Sample the carpet using a cut-off timer (refer to Standard 1201, section 8) for no longer than two minutes, or stop sampling as soon as a visible trace of debris can be seen on the filter.
- 4.7** Upon completion of sampling place the plugs back on the ends of the cassette(s).
- 4.8** Properly label the cassette with a unique sample number.
- 4.9** Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 4.10** Package the cassette(s) with the Chain-of-Custody and overnight the cassette(s) to an appropriate laboratory for analysis.

References

EMS: Environmental Monitoring Systems, Charleston, SC.

Zefon International, St. Petersburg, FL.

Environmental Solutions Association

The Standard For Dust Cassette Sampling

Standard Number 1501

1. Purpose

- 1.1 The purpose of dust cartridge sampling is to provide an indication of the microbial condition of a home with the material having potential to be an amplifier or a reservoir for fungi.

2. Scope

- 2.1 A dust cartridge sample is performed by using a vacuum cleaner and a dust sampling cassette to vacuum an area of carpet. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2 Determinations, extent, or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate sample must be collected as determined by the visual assessment before mold can be identified in designated area or areas.
- 2.3 The result of a dust cassette sampling is an analysis of the presence or absence of mold in the selected areas sampled at the time the dust cassette sampling was performed.

3. Dust Cassette Sampling Devices

- 3.1 A microbial dust cassette such as but not limited to: DustCheck™ (Aerotech Lab), moldchek™ (Health Chek, LLC); household vacuum cleaner, Shark™ vacuum or portable vacuum device, zip top bags, and labels.
- 3.2 If applicable, qualify that the cassette has not met the expiration date or will not expire during analysis.

4. Procedure for Carpet Cassette Sampling

- 4.1 Set up vacuum device in the location to be sampled.
- 4.2 Clean vacuum hose attachment with warm soapy water and dry thoroughly.
- 4.3 Remove the end plugs on the cassette, and attach the dust cassette to the vacuum cleaner hose.
- 4.4 Start in a corner of the room by turning on vacuum cleaner, and vacuum the room from corner to opposite corner. Repeat this step in the other corner of the room, creating a sampling pattern representing an "X."
- 4.5 Remove the dust cassette, place the plugs back on the ends of the cassette, and place it in a small zip top bag or the return box that may be supplied.
- 4.6 Properly label the cassette with a unique sample number.
- 4.7 Rinse the vacuum hose attachment with warm, soapy water, and dry thoroughly for additional samples; follow prior steps in this section.

- 4.8 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107) or supplied information card.
- 4.9 Package the cassette(s) and Chain-of-Custody or information card and overnight the cassette(s) to an appropriate laboratory for analysis.

References

DustCheck™ Cassette, Aerotech Laboratories, Inc., Phoenix, AZ.

Moldcheck™, Health Chek, LLC.

Shark™ Vacuum, Euro-Pro Corp.

Environmental Solutions Association

The Standard For Test Tape Sampling (Tape Lift)

Standard Number 1601

1. Purpose

- 1.1** The purpose of test tape sampling allows for the determination of the presence of fungal spores as well as what types of fungi are present.

2. Scope

- 2.1** A test tape sample is done using a flexible plastic microscope slide with a pre-defined adhesive area. Each slide is packed in a slide mailer to prevent cross contamination.
- 2.2** Determinations, extent, or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate sample must be collected as determined by the visual assessment, before mold can be identified in designated area or areas.
- 2.3** The result of a test tape sampling is an analysis of the presence or absence of mold in the selected areas sampled at the time the test tape sampling was performed.

3. Test Tape Sampling Devices

- 3.1** The test tape sampling kit will include flexible plastic microscope slide and a slide mailer to prevent cross contamination with a unique serial number for traceability.
- 3.2** Test tape sampling kits include but are not limited to: Bio-Tape™ Lift (Zefon International), Test Tape (Moldetect), and QLab-Tape™.
- 3.3** If applicable, qualify that the test tape has not met the expiration date or will not expire during analysis.

4. Procedure for Test Tape Sampling

- 4.1** Test tape sampling is performed in each room where there is visible mold or water stains.
- 4.2** If applicable, qualify that the collection and transport system has not met the expiration date or will not expire during analysis.
- 4.3** Wear protective gloves in order to prevent cross-contamination from other contaminated areas onto the test tape.
- 4.4** Remove the test tape from the container or plate (if applicable, remove protective adhesive covering) and hold the test tape by the edges, being careful not to touch the actual sample window.
- 4.5** Place the actual sampling media over the area to be sampled.
- 4.6** Lightly rub over the test tape, placing a trace amount of potential mold on the test tape.
- 4.7** Gently remove the test tape from the area being sampled, not touching the mold sample by holding the edge of the test tape.
- 4.8** Place the test tape either back into the supplied container or attach the tape back to a glass slide.

- 4.9 Properly label the test tape with a unique sample number.
- 4.10 If more than one test tape sample is taken, repeat prior steps.
- 4.11 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 4.12 Package the test tape(s) and Chain-of-Custody, and overnight the test tape(s) to an appropriate laboratory for analysis.

References

Bio-Tape™ Lift, Zefon International: St. Petersburg, FL.

QLAB-Tape™, QLAB, Cherry Hill, NJ.

Test Tape, Moldetect.

Environmental Solutions Association

The Standard For Bulk Sampling

Standard Number 1701

1. Purpose

- 1.1 The purpose of bulk sampling allows for the determination of the presence of fungal spores as well as what types of fungi are present by sending a small amount of substrate to a laboratory for analysis. This is performed **only** if swab sampling or tape tests cannot be done or if the client requests this service.

2. Scope

- 2.1 A bulk sample is done by removing a piece of suspected mold substrate (i.e. carpet, wallpaper, drywall) that will fit into a sealable airtight bag.
- 2.2 Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate sample must be collected as determined by the visual assessment before mold can be identified in a designated area or areas.
- 2.3 The result of a bulk sampling is an analysis of the presence or absence of mold in the selected areas sampled at the time the test tape sampling was performed.

3. Bulk Sampling Devices

- 3.1 The bulk sampling kit will include a device able to remove the piece of substrate and a sealable airtight bag with a unique serial number for traceability.

4. Procedure for Bulk Sampling

- 4.1 Bulk sampling is performed where there is damage caused by visible mold or water stains.
- 4.2 Place the sealable bag under the area to be collected or close to the area that is going to be collected to prevent cross-contamination.
- 4.3 Wear protective gloves in order to prevent cross-contamination.
- 4.4 Rinse the removal device, which is capable of removing the substrate, with warm soapy water, and dry thoroughly to prevent cross-contamination.
- 4.5 Remove a small portion of the substrate no larger than the sealable bag with the removal device, and place the sample in the sealable bag.
- 4.6 Close the sealable bag and place into another sealable airtight bag, closing this as well for shipping purposes.
- 4.7 Properly label the bag with a unique sample number.
- 4.8 If more than one bulk sample is taken, repeat prior steps.
- 4.9 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 4.10 Package the bulk sample(s) and Chain-of-Custody, and overnight the bulk sample(s) to an appropriate laboratory for analysis.

References

ESA: Environmental Solutions Association, Williamsport, PA.

Environmental Solutions Association

The Standard For Wall Cassette Sampling

Standard Number 1801

1. Purpose

- 1.1 The purpose of wall sampling is to discover a previous or undetected mold problem(s) within a wall cavity that may have been covered over or that is within an enclosed area such as a HVAC ductwork. Wall cassette sampling is **only** performed if the client agrees to an intrusive mold sampling, as you may have to drill a 3/8" hole in the "red flag" area of a wall or into HVAC ductwork.

2. Scope

- 2.1 Wall cassette sampling is performed by using an air pump, a disposable sampling tube long enough to be placed in a wall or enclosed area, and an approved wall sampling cassette. Proper collection, handling, and documentation of samples are required for valid analysis.
- 2.2 Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in designated area or areas.
- 2.3 The results of a wall cassette sampling are an analysis of the presence or absence of mold in the selected areas sampled, at the time the wall sampling was performed.

3. Wall Cassette Sampling Devices

- 3.1 A vacuum pump and tubing which can draw an amount of air between 5-20 liters per minute (Lpm).
- 3.2 An air flow meter (Rotameter) which is attached either directly to the air flow pump or located inline between the air pump and sampling device (the rotameter is to be read at the middle of the ball).
- 3.3 Disposable tubing that is attached to the sampling end of the cassette.
- 3.4 A valid spore trap used in wall sampling, including but not limited to: Air-O-Cell™ (Zefon International), Micro5™ (Environmental Monitoring Systems) and Cyclex-d™ (Environmental Monitoring Systems). If using a different media than listed, follow the manufacture's recommendations.
 - 3.4.1 Qualify that the cassette has not met the expiration date or will not expire during analysis.
- 3.5 A calibration flow meter that meets the National Institute of Standards and Technology (NIST)⁴.
- 3.6 A low speed drill with a 3/8" drill bit or device able to create a 3/8" hole.

4. Procedure for Wall Cassette Sampling

- 4.1 Have the Agreement for Intrusive Sampling (form #106A) signed by the client.

- 4.2 Drill a 3/8" hole into the "red flag" area or section of HVAC ductwork to be sampled slowly as to not create a dusty testing environment.
 - 4.2.1 If an area being sampled has a cover that can be removed (i.e. outlet/switch cover, light cover) or a separation that is large enough to place the sample tube into, this may be utilized if it is within the estimated wall cavity where the mold is located.
- 4.3 Calibrate the sample pump before sampling.
 - 4.3.1 Refer to Standard 1201, section 6 for sampling media and flow rate.
- 4.4 Remove the plugs or seals from the ends of the cassette.
- 4.5 Insert the tubing adapter to the tubing (if applicable) and connect the cassette to the adapter.
- 4.6 Connect the wall sampling tube to the end of the cassette.
- 4.7 Place the sampling tube into the 3/8" hole or opening where a "red flag" or designation of sampling is to occur.
- 4.8 Turn the pump on and run the sample until a trace of debris is noticed on the cassette, or take a sample for up to 2 minutes.
- 4.9 Upon completion of sampling, remove the disposable sampling tube and place the plugs or seals back on the ends of the cassette(s).
- 4.10 Properly label the cassette with a unique sample number.
- 4.11 Cover the hole that was drilled with tape, spackle, caulking, or what the client may supply to prevent contamination or place the covering that was removed back into place.
- 4.12 If more than one wall sample is taken, repeat prior steps.
- 4.13 Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 4.14 Package the cassette(s) with the Chain-of-Custody, and overnight the cassette(s) to an appropriate laboratory for analysis.

References

Air-O-Cell™ Cassettes, Zefon International, St. Petersburg, FL.

CyClex-d™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

Micro5™ Cassettes, EMS: Environmental Monitoring Systems, Charleston, SC.

NIST: National Institute of Standards and Technology, Gaithersburg, MD.

Section 3:

Procedures and Media for Viable/Culturable Mold Sampling

The following Standards in Section 2 have been developed with the intent of providing step-by-step Standards of practice for the collection of environmental samples for mold contamination.

These Standards do not include indications for sampling, data interpretation or promote a specific product.

When performing sampling Personal Protective Equipment (PPE) should be worn. The minimum items worn are a disposable facemask rated N-95 or higher, gloves and eye protection.

Environmental Solutions Association

The Standard For Air Sampling (Viable Impactor)

Standard Number 1901

1. Purpose

- 1.2 The purpose of viable air sampling is to draw a known amount of air over a culture media contained in a petri dish using an air pump in specific indoor environments as well as an outdoor comparison sample. The collected sample is then sent to a laboratory for analysis. Viable sampling will identify the genus and species of mold.

2. Scope

- 2.1 An air sample is collected in “client defined” or “red flag” areas and is not a complete assessment of the subject property. Proper collection, handling and documentation of samples are required for valid analysis.
- 2.2 Determinations as to the extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment before mold can be identified in designated area or areas.
- 2.3 The results of air sampling are not a guarantee that mold does or does not exist in the subject property. The results are indicative only of the presence or absence of mold in the selected areas sampled, at the time the air sampling was performed. All air samples are to be collected using the same sampling time, air flow, and type of sampling media.

3. Viable Impactor Equipment and Sampling Devices

- 3.1 A vacuum pump with tubing which can draw an amount of air of 28 liters per minute (Lpm) including but not limited to Gast, Megalite and Thomas air pumps.
- 3.2 A sampling stand, with platform, that is adjustable to an elevation of 3’-6’ in height.
- 3.3 An air flow meter (Rotameter) able to achieve a reading of 28 Lpm which is attached either directly to the air flow pump or located inline between the air pump and sampling device (the rotameter is to be read at the middle of the ball).
- 3.4 A valid impactor used in viable sampling, including but not limited to, Anderson N6™, Buck-BioAire™ B6, CyClex BioAerosol, EMS E6™ and BioSIS Slit Impactor.
 - 3.4.1 If using a different impactor than listed, follow the manufacturer’s recommendations for use and sampling media type.
- 3.4 A calibration flow meter that meets standards of the National Institute of Standards and Technology (NIST).
- 3.5 A cut-off timer that will stop the air sampling pump at the proper sampling time (refer to section 9).
- 3.6 An approved cooler with an ice pack to transport the petri dish/agar plate from the office to the job, from the job back to the office, or shipping to the laboratory.
- 3.7 Isopropyl alcohol (70% or higher).

- 3.8 Drying material such as a cloth or paper towel.
- 3.9 A standard petri dish/agar plate containing an applicable culture media for the identification of general or specific mold(s). See chart 3.9.2.
 - 3.9.1 Agar plates must be kept in a refrigerator or cooler with ice packs until use and after use, during transport to and from a job, and when shipping to the laboratory.
 - 3.9.2 If using agar plates other than listed follow manufacturer's applications.

Common Agar Plates	Applications for Use
Malt Extract Agar (MEA)	General purpose culture for identification of a diversity of mold.
Cellulose Agar	For identification of fungal pathogens in high moisture areas.
Corn Meal Agar	General purpose culture for identification of a diversity of mold
Dichloran-Glycerol Agar 18 (DG18)	For identification of fungal pathogens in low moisture areas.
Potato Dextrose Agar (PDA)	General purpose culture for identification of a diversity of mold.

4. Overview for Indoor Air Sampling

- 4.1 Air samples are only taken in livable spaces using the same type of sampling media that was or will be used for the outdoor air sample using the same appropriate sample time (refer to section 7).
- 4.2 Air sampling is performed near the center of each room where “red flags” are known.
- 4.3 If no “red flag” conditions are obvious, collection is made near the HVAC return.
- 4.4 Air sampling media is set at a respiration height of 3’-6’.
- 4.5 Agar plates need to achieve room temperature before sampling.

5. Overview for Outdoor Air Sampling (Control Sample)

- 5.1 An outside air sample must be taken when indoor air sample(s) are taken.
- 5.2 Air sampling is performed between 5’-10’ away from the most frequently used entrance to the home, excluding under a roof overhang, carport, or porch.
- 5.3 Air sampling media is set at a respiration height of 3'-6'.
- 5.4 Agar plates need to achieve room temperature before sampling.
- 5.5 Air sampling should be performed during stable weather conditions using the same type of sampling media that was or will be used for the indoor air sample.
 - 5.5.1 Do not take outdoor air samples if: it is actively raining or has rained within the past 2 hours, the temperature is below 32° Fahrenheit, or snow or ice has completely covered the ground.
 - 5.5.2 If samples have to be taken during adverse weather conditions, then a deviation from standards must be written or documented. The control sample will then be taken within an area in the building with no obvious “red flags”.

6. Flow Meter Rate (Rotameter) Adjustment

- 6.1 Designate an air sampling impactor of choice for use.
- 6.2 Connect the pump tubing to the barb fitting on the base of the impactor.
 - 6.2.1 Do not open the impactor or place an agar plate inside the impactor.
- 6.3 Turn the air sampling pump on.
- 6.4 Adjust the control on the Rotameter by placing the center of the ball to the recommended number flow rate of 28 Lpm for the impactor or to the manufacturer's recommendations.
- 6.5 When proper flow rate is achieved, turn the sampling pump off.
- 6.6 Flow meter rates should be calibrated often using a NIST approved calibrator.

7. Recommended Sampling Time Chart

Air Sampling Environment	Examples	Sampling Time
Calm	Windless, clean, clear, little dust	5 Minutes
Active	Breeze, mild dust, minor construction	3 Minutes
Highly Active	Construction, dusty	2 Minutes

Note: Sampling chart based on manufacturer's recommendations. Verify with sampling media.

8. Cut-Off Timer

- 8.1 Plug cut-off timer into a live outlet.
 - 8.1.1 Ensure that a battery back-up device is used in case of power outage during sampling.
- 8.2 Plug an extension cord, capable of handling the air sampling pump, into the cut-off timer.
- 8.3 Program timer to start and shut down the air sampling device using the appropriate sampling time (refer to section 7).
- 8.4 If more than one air sample is taken, move all equipment to the next sampling area and repeat prior steps in this section.

9 Sampling Procedure

- 9.1 Qualify that the petri dish/agar plate that will be used has not met the expiration date or will not expire during analysis.
- 9.2 Plug battery back-up, cut-off timer into a live outlet.
- 9.3 Plug extension cord or air pump supply cord into cut-off timer.
- 9.4 Connect the pump tubing to the barb fitting on the base of the impactor.
 - 9.4.1 Do not open the impactor or place an agar plate inside the impactor.
- 9.5 Turn the air sampling pump on.
- 9.6 Adjust the control on the Rotameter by placing the center of the ball to the recommended number flow rate of 28 Lpm for the impactor or to the manufacturer's recommendations.
- 9.7 When proper flow rate is achieved, turn the sampling pump off.
- 9.8 Open the impactor by unhooking the springs and lay the top on a clean area.
- 9.9 Before sampling clean the impactor with the Isopropyl Alcohol and dry.

- 9.10** Place the qualified agar plate inside the impactor on the base tines.
- 9.11** Remove the agar lid and place face down on a clean area
- 9.12** Place the lid of the impactor back on and reattach the springs or hooks sealing the impactor.
- 9.13** Place the impactor at respiration height on a sampling stand in the center of the room (refer to section 4) or outside at respiration height (refer to section 5).
- 9.14** Program the timer to turn on and shut down the air sampling pump for the appropriate sampling time (refer to section 7).
- 9.15** When sampling is complete, remove the top of the impactor and remove the agar plate.
- 9.16** Visually check the agar plate for impaction of debris and place the agar lid back on the agar plate.
 - 9.16.1** If visible signs are not shown, test may be invalid, and retesting should occur by repeating prior steps.
- 9.17** Properly label the agar plate with a unique sample number or identification (i.e. outside, BD1) and place in a cooler with ice packets.
 - 9.17.1** Do not place petri dish(es)/agar plate(s) in loose ice as this may contaminate the sample.
- 9.18** Properly fill out all areas of the Chain-of-Custody (refer to Standard 1107).
- 9.19** If more than one air sample is taken, repeat prior steps in this section.
- 9.20** Package the agar plate(s) in a sealable bag and Chain-of-Custody and overnight the petri dish/agar plate(s) to an appropriate laboratory for analysis.
 - 9.20.1** Petri dishes/agar plates must be placed in an approved cooler to ship to the laboratory.

References

Andersen N6™, Environmental Microbiology Laboratory, Inc.

BioSIS Slit Impactor, EMS: Environmental Monitoring Systems, Charleston, SC.

Buck-BioAire™, A.P. Buck Inc., Orlando, FL.

CyClex BioAerosol, EMS: Environmental Monitoring Systems, Charleston, SC.

E6™, EMS: Environmental Monitoring Systems, Charleston, SC.

Environmental Solutions Association

The Standard For Direct Sampling (Viable)

Standard Number 2001

1. Purpose

- 1.1.** The purpose of direct sampling (viable) is to discover an existing mold problem(s) that may have potential health affects and to identify the species and genus of that mold.

2. Scope

- 2.1** Direct sampling is performed by swab sampling (refer to Standard 1301) or by bulk sampling (refer to Standard 1701). Proper collection, handling and documentation of samples are required for valid analysis.
- 2.2** Determinations, extent or type of microbial contamination will not be made from results of the visual assessment alone; an appropriate number of samples must be collected as determined by the visual assessment, before mold can be identified in designated area or areas.
- 2.3** The results of a direct viable sampling are an analysis of the presence or absence of mold in the selected areas sampled, at the time the sampling was performed.

3. Sampling Devices

- 3.1** A valid swab used in swab sampling includes but is not limited to, Bacti-Swab™ (Remel), Venturi Transystem™ (Copan) and numerous others.

4. Procedure for Direct Sampling

- 4.1** If performing a direct sample utilizing a swab follow Standard 1301.
- 4.2** If performing a direct sample utilizing a bulk method follow Standard 1701.
- 4.3** Properly fill out all areas of the Chain-of Custody (refer to Standard 1107)
- 4.4** If more than one direct sample is taken, repeat prior steps in this section.
- 4.5** Package the Chain-of-Custody and place the samples in a sealable bag.
- 4.6** Place the sample(s) in a cooler with ice packets.
- 4.7** Overnight the sample(s) to an appropriate laboratory for analysis.
 - 4.7.1** The sample(s) must be placed in an approved cooler to ship to the laboratory.

References

Bacti-Swab™, REMEL, Lenexa, KS.

Venturi Transystem™, Copan Innovation, Corona, CA.