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I. Job and Contact Information

A. Contact Information:

Contact:

Firm:

Address:

Address:

Phone:

Email:

B. Site Information:

Contact:

Firm:

Address:

Address:

Email:

Project #:

C. **Recommended Remediation Firms:** upon request



II. Scope of Work

The assessment was conducted at the request of (Client Name), at (Site Address). The object of the assessment was to establish the indoor air quality of the building and to inspect areas of mold concerns.

A. Scope of Work:

1. Assess the location(s) and size of visible mold contamination,
2. Consider the possibility of hidden mold,
3. Investigate areas associated with occupant complaints,
4. Identify the source of the water-damaged materials or moisture problem(s),
5. Check inside air ducts and air handling units if necessary,
6. Throughout the process, consult other qualified professionals if necessary,
7. Outline follow-up options for next steps to clean-up,
8. Test and analyze viable, non-viable and surface samples where appropriate to identify sources and possible Indoor Air Quality concerns. (The physical inspection is always the paramount to a successful indoor air quality assessment).

III. Building Overview

The building is a single-story ranch style community home with an unfinished basement. There have been issues in the past with water coming from the shower in the hallway bathroom getting the sheetrock and bathroom door frame wet. There was currently mold growth on said sheetrock. The basement ceiling that is below the same bathroom was wet at time of the assessment, with visible signs of water staining. There were also leaks from the sprinkler pipes in the attic.

IV. Findings

A. Visible Mold

1. Visible mold was observed on the bottom part of the sheetrock next to the bathroom door frame in the hallway, on the opposite side of the shower. This mold was identified as heavy growth of *Stachybotrys sp.* and *Aspergillus sp.*

B. The Source of Water

1. Moisture is the main reason mold will grow on organic material. It is always imperative to find the source of mold and correct the moisture intrusion, or the mold will return. There appear to be multiple sources of moisture.
2. The source appears to be originating from the hallway bathroom shower, possibly related to water getting the sheetrock wet during showering. Ensure water is being drained properly away from the hallway.

C. Environmental Measurements

1. **Moisture Contents of Building Materials**
 - a) Moisture measurements collected indicate above normal (>16%) water or moisture content in some areas tested. Measurements in organic building



materials above 20% may support environmental conditions conducive to the growth of common indoor molds.

- b) Elevated moisture measurements of **20 – 68%** were collected from the basement ceiling surrounding the PVC pipping below the hallway bathroom, in the area of the ceiling that is painted white.
- c) Elevated moisture measurements of **99%** were collected from small damaged area of sheetrock in the hallway, directly across from the bathroom. There was no identifiable source of moisture here and the area of elevated moisture was limited to just around the hole in the wall. The area is about 4 – 5 ft. up from the floor.
- d) The area of sheetrock in the hallway with the mold growth did not currently have elevated moisture.

2. **Indoor air quality samples collected**

Spore trap were utilized for sample collection, countable spore traps count identify the types of mold, whether they are viable or non-viable. The samples are analyzed by microscopy. An outdoor sample was collected as a baseline for comparison. The lab data with spore counts are attached at the end of this report.

- a) An IAQ, Indoor Air Quality, sample was collected in the Basement, directly below where the wet ceiling was. The sample results identified elevated levels of *Aspergillus/Penicillium sp.*
- b) An IAQ, Indoor Air Quality, sample was collected in the hallway just outside the Bathroom. The sample results identified normal levels of mold spores.

3. **Environmental Surface Samples**

Environmental surface samples were collected and analyzed for mold by microscopy. The following test results were identified by microscopy.

- a) An environmental surface sample was collected from the sheetrock behind the plastic wall panel in the hallway on the opposite side of the shower. The sample results identified heavy growth of *Stachybotrys sp.* and *Aspergillus sp.*

V. **Conclusions and Recommendations**

Recommendations are based upon guidelines written by the professional industry agencies listed on the reference page. Due to the lack of standards in the “mold” industry, judgment is paramount with both the Indoor Environmental Professional and a Remediator. Professional judgment is always required to further increase or lessen the remediation and clean-up methods. The EPA states that you are to “Use professional judgment, consider potential for remediator/occupant exposure and size of contaminated area.”



The following recommendations have been made, fully understanding that all remedial action will follow guidelines and industry standards referenced. **Based on sample results and findings, mold remediation from a professional firm is recommended.**

Best professional judgment is always required before, during and after clean-up by the remediation firm. Therefore, additional steps or delineation of steps may occur to achieve the best remediation results. One set of standards for clean-up are written by the Institute of Inspection, Cleaning, Restoration and Certification (IICRC). Mold remediation is standard “S520” and should be followed as a guideline. The EPA Indoor Air Quality Division and the American Industrial Hygiene Association (AIHA) also have industry guidelines.

A. Set up Protocol: Basement and Hallway

- a) Containment is to be in place.
- b) Negative air is to be in place throughout the clean up process.
- c) Appropriate PPE is to be used while inside of containment.
- d) All building material that has lost its integrity shall be replaced.
- e) Remediation shall follow the IICRC S520 Standard and Reference Guide.

B. Clean-up recommendations: Hallway outside Bathroom

- a) Ensure water from the shower is drained properly and away from the hallway.
- b) Remove sheetrock in hallway that is on the other side of the bathroom shower. At least 2 feet up from floor should be removed and then 2 feet beyond visible growth
- c) Cut out and repair the small damaged area of sheetrock in the hallway directly across from the bathroom. It is a small hole in the wall about 4 – 5ft. up from the floor that contained high moisture content.
- d) Any insulation in contaminated area should be discarded.
- e) Any contaminated woodwork should be cleaned and free of visible growth.
- f) A wire brush may be required in hard to reach areas of any contaminated woodwork.
- g) All surfaces in the contaminated area should be HEPA vacuumed.
- h) All surfaces and materials should be wiped down with a mild detergent or approved disinfectant.
- i) A final HEPA vacuuming of the entire area is highly recommended prior to air scrubbing.
- j) When remediation is complete, no dust or debris should be visible inside containment.
- k) No mold growth should be visible after remediation is complete.
- l) Air scrubbers should run for a minimum of 72 hours after clean-up and prior to build-back.
- m) It is highly recommended that ARA perform a Post-Remediation Verification (PRV) at the end of the remediation as a quality control check. A PRV is to establish that the Scope of Work and the protocols described above have been conducted as prescribed and that the PRV has been achieved



C. Clean-up recommendations: Basement

- a) Any plumbing leaks should be corrected that are associated with the pipes that run up through the floor to the hallway Bathroom. There was visible water staining and elevated moisture content in the basement ceiling below the hallway bathroom.
- b) The area to be remediated is the ceiling below the bathroom containing several PVC pipes, and is currently painted white.
- c) All materials should be thoroughly dried with fans or dehumidifiers.
- d) The ceiling in this area should be sanded or effectively cleaned in order to remove any penetrated growth. Approved chemicals designed for mold remediation on porous surfaces may be used.
- e) A wire brush may be required in hard to reach areas of any contaminated woodwork.
- f) All surfaces in the contaminated area should be HEPA vacuumed.
- g) All surfaces and materials should be wiped down with a mild detergent or approved disinfectant.
- h) A final HEPA vacuuming of the entire area is highly recommended prior to air scrubbing.
- i) When remediation is complete, no dust or debris should be visible inside containment.
- j) No mold growth should be visible after remediation is complete.
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D. Additional recommendations: Attic

- a) The sprinkler pipes across from the air handling unit should have all leaks fixed.

E. General Housekeeping Recommendations

Molds can be found almost anywhere; they can grow on virtually any organic substance, as long as moisture and oxygen are present. There are molds that can grow on wood, paper, carpet, foods, and insulation. When excessive moisture accumulates in buildings or on building materials, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. **It is impossible to eliminate all mold and mold spores in the indoor environment. However, mold growth can be controlled indoors by controlling moisture indoors.**

When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. Molds gradually destroy the things they grow on. Since mold requires water to grow, it is important to prevent moisture problems in buildings. Moisture problems can have many causes, including uncontrolled humidity.



Prevention

The key to mold control is moisture control. Solve moisture problems before they become mold problems!

Mold Prevention Tips

- a. Keep food refrigerated or in sealed containers until ready for use.
- b. Dust may contain enough organic material to provide nutrient for mold growth. Always keep your home dust free, neat and clear of potential organic foods/nutrient for mold.
- c. Fix leaky plumbing and leaks in the building envelope as soon as possible.
- d. Watch for condensation and wet spots. Fix source(s) of moisture problem(s) as soon as possible.
- e. Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- f. Keep heating, ventilation, and air conditioning (HVAC) drip pans clean, flowing properly, and unobstructed.
- g. Vent moisture-generating appliances, such as dryers, to the outside where possible.
- h. Maintain low indoor humidity, below 60% relative humidity (RH), ideally 30-50%, if possible.
- i. Perform regular building/HVAC inspections and maintenance as scheduled.
- j. Clean and dry wet or damp spots within 48 hours.
- k. Don't let foundations stay wet. Provide drainage and slope the ground away from the foundation.

VI. Expectations

If called in to conduct a post-remediation verification, the following items will be included in the post-remediation verification.

1. Verify remediation followed the scope of work set forth at the start of the project.
2. Verify that moisture sources have been effectively addressed unless otherwise noted.
3. Verify all identified mold contaminated materials have been removed and or “treated” and that all surfaces are free of visible dust and debris.
4. Employ qualitative or quantitative testing (such as air sampling or surface sampling) as needed as a non-visual evaluation tool in determining whether conditions are acceptable for re-occupancy.



VII. References

EPA:	A brief guide to mold, moisture, and your building
EPA:	Mold remediation in school and commercial buildings
ACGIH:	Bioaerosols assessment and control
AIHA:	American Industrial Hygiene Association
IICRC:	Institute of Inspection, Cleaning and Restoration Certification
AIHA:	The Occupational Environment- It's Evaluation and Control
AIHA/ASGIH:	Journal of Occupational & Environmental Hygiene
OSHA:	Technical Manual

VIII. Limits of Liability

The IAQ assessment does not cover concealed areas or items not inspected. The extent of the limited area also depends on the building construction and conditions, weather, building usage and other factors. Due to the nature of the investigation and the limited data available, (Company) cannot warrant against undiscovered environmental liabilities.

Any use which a third party makes of this report, or reliance on decisions made based upon it, is the responsibility of such third parties. (Company) accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The conclusions presented in this report represent the best technical judgment of (Company) based on the data collected from the work. The conclusions are based on the site conditions encountered by (Company) at the time the assessment was performed. The assessment does not cover concealed area or items not inspected. The assessment does not cover information that was concealed, or information that was not revealed during the assessment.

Airborne sample collection should be a part of the IAQ assessment when investigating the potential for unwarranted exposure. Limiting the number and/or type of samples collected may limit the defensibility of the data and results of the overall assessment. The consultant cannot be responsible for associated liabilities due to cost restraints or customer requests.

Due to the nature of the investigation and the impact natural conditions may have on the findings and conclusions, the limit of viability for the use of this report to make decisions is limited to 30 days

IX. Attachments

- A. Test Results
- B. Chain of Custody