Mold Inspection, Remediation, and Testing

Office of Maintenance Services Procedures

I. Introduction

In 2021, the Virginia General Assembly passed Senate Bill 845 requiring school divisions to develop a plan for testing and remediation of mold in public school buildings. The bill amends the *Code of Virginia* as follows:

22.1-138.D

> *Each local school board shall develop and implement a plan to test and, if necessary, a plan to remediate mold in public school buildings in accordance with guidance issued by the U.S. Environmental Protection Agency. Each local school board shall (i) submit such testing plan and report the results of any test performed in accordance with such plan to the Department of Health and (ii) take all steps necessary to notify school staff and the parents of all enrolled students if testing results indicate the presence of mold in a public school building at or above the minimum level that raises a concern for the health of building occupants, as determined by the Department of Health.*

Virginia Beach City Public Schools has developed this document as guidance for mold inspection, remediation, sampling, and prevention in accordance with the above regulation. This document is based on information published by the U.S. Environmental Protection Agency and contains both direct and indirect quotations accessible from epa.gov/mold. Additional references are provided in Section VII: Appendix.

II. Background Discussion

Molds are a natural part of the environment and can be found almost anywhere where moisture and oxygen are present. Many types of molds exist. All molds have the potential to cause health effects including sneezing, runny nose, red eyes, skin rashes, dizziness, headaches, or asthma attacks. Potential health concerns are important

reason to prevent mold growth and to remediate/clean up any existing indoor mold growth.

There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture. When excessive moisture accumulates in buildings or building materials, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed.

III. EPA Guidance for School Buildings

Although there are currently no federal regulations or threshold limits for mold, the U.S. Environmental Protection Agency has developed resources to provide information and guidance on mold in relation to indoor air quality. The guidance documentation, *Mold Remediation in Schools and Commercial Buildings* is designed to address mold and moisture remediation in public and commercial buildings with the intention of safe-guarding building occupant health. EPA guidance focuses on preventing mold growth through the control of moisture and remediating/cleaning up indoor mold growth when it occurs.

IV. Virginia Beach City Public Schools Inspection and Remediation

Virginia Beach City Public Schools utilizes a work order system to report maintenance requests and concerns. There is a specific problem code used to report mold concerns. All mold concerns are taken seriously, investigated, and resolved using EPA recommendations and industry best practices. If simple repairs or material replacement are needed, work orders are forwarded to tradesmen or contractors for completion. For more complex concerns, the Occupational Health and Safety Specialist works with a third-party Indoor Air Quality consultant.

Initial assessments are performed by the Virginia Beach City Public Schools' Occupational Health and Safety Specialist or the Occupational Health and Safety Technician; assessments include the following:

- Gathering background information regarding the mold concern
- Inspection of area of concern; looking for active mold growth or conditions conducive to mold growth
- Inspection of Mechanical Systems (HVAC, Plumbing, Carpentry, or Roofing), looking for active water intrusion.
- Readings using moisture meters and humidity gauges to evaluate moisture in building materials and potential HVAC related issues.

If mold is visually identified, the Occupational Health and Safety Specialist or Occupational Health and Safety Technician provides recommendations for remediation. The purpose of remediation is to remove existing indoor mold growth and to correct factors contributing to moisture problems and to prevent further damage to building materials that will promote mold growth.

Remediation activities include but are not limited to:

- Correction of moisture or water intrusion includes adjusting the HVAC system, cleaning coils and drip pans in HVAC units, repairing the roof, caulking around windows and other points of water entry into the building.
- In-house custodial staff are equipped to clean mold growth on non-porous surfaces using an EPA-approved disinfectant. Porous items such as papers or fabrics may be recommended for disposal.
- Porous building surfaces such as ceiling tiles or wallboards are referred to in-house carpenters or outside contractors for removal and repair.
- For large scale remediations (ex: following a flood event), Virginia Beach City Public Schools utilizes contractors specializing in property restoration and emergency response.

A follow-up investigation is carried out by the Occupational Health and Safety Specialist or Occupational Health and Safety Technician to determine if problems have been resolved. If a problem persists, a third-party indoor air quality consultant is contracted to assist in resolving issues. Further investigation and sampling, if utilized, is performed by the consultant. A report is provided with findings and recommendations. The consultant's testing plan, report, and recommendations will be submitted to the Virginia Department of Health using the online portal in accordance with *Code of Virginia* 22.1-138.D. Corrective measures are taken as recommended by the third-party indoor air quality consultant.

V. Sampling Discussion

Sampling can be a useful tool within the scope of an investigation; however, the Environmental Protection Agency (EPA) does not recommend routine sampling as a building assessment tool. The EPA states that "Currently, there are no EPA regulations or standards for airborne mold contaminants. Since no EPA or other federal limits have been set for mold or mold spores, sampling cannot be used to check a building's compliance with federal mold standards."

Virginia Beach City Public Schools contracts the assistance of a third-party indoor air quality consultant in the event of persistent or more complex issues. Sampling may be performed at the recommendation of the third-party inspector. As stated by the EPA, "this individual can help you decide if sampling for mold is useful and/or needed and will be able to carry out any necessary sampling. It is important to remember that the results of sampling may have limited use or application. Sampling may help locate the source of mold contamination, identify some of the mold species present and differentiate between mold and soot or dirt." "Sampling should be done only after developing a sampling plan that includes a confirmable theory regarding suspected mold sources and routes of exposure." The most common types of sampling performed are bioaerosol (air) sampling and surface sampling by swab or tape lift.

All samples are analyzed by a qualified laboratory using analytical methods recommended by the American Industrial Hygiene Association (AIHA), the American Conference of Governmental Industrial Hygienists (ACGIH), or other professional organizations. For sampling to provide meaningful information, results must be interpreted by an experienced inspector within the context of a visual inspection.

As previously stated, the consultant's testing plan, report, and recommendations will be submitted to the Virginia Department of Health using the online portal in accordance with *Code of Virginia* 22.1-138.D.

VI. Prevention

The most effective way to prevent mold growth in indoor environments is to control moisture. Regular maintenance, prompt reporting of issues, and routine cleaning are all critical pieces in addressing indoor air quality concerns. Prevention of moisture issues includes:

- Monitor for leaks from building systems (roofs, windows/do
- ors, HVAC, plumbing, etc.) and repair promptly.
- Reduce the potential for water damage from condensation.
    - Maintain insulation on cold water piping
    - Avoid storing items against windows
    - Use exhaust fans in high moisture areas like bathrooms and kitchens
- Reduce indoor humidity. Ideal relative humidity ranges from 30-60%
    - Ensure proper use of HVAC equipment and using exhaust fans where present.
    - Avoid personal appliances that add moisture to the air (ex: humidifiers, misting scent diffusers, aquariums).
    - Do not prop windows or doors open during periods of high outdoor humidity or precipitation.
- Maintain HVAC systems in good working order
    - Pleated air filters are replaced on a schedule by an in-house filter crew
    - HVAC supply and return vents that can be reached from a 6' ladder are cleaned by custodial staff. Higher vents are cleaned by School Plants HVAC staff twice per year.
    - Preventative maintenance on HVAC units is performed on a rotating schedule to cleans coils, change belts and lubricate bearings.
- Utilize good housekeeping practices
    - Use damp cleaning methods and EPA approved disinfectants for surface cleaning
    - Use vacuums equipped with HEPA filters

- Avoid cluttering. Clutter makes it more difficult to clean effectively, leading to buildup of dust reservoirs, creating harborage for pests, and potentially concealing maintenance issues.

VII. Appendix

Additional information is available from the following resources:

Environmental Protection Agency, Mold in Schools and Commercial Buildings; Learn how to address mold growth in schools and large buildings, and find resources including tips, publications and EPA's Tools for Schools.

https://www.epa.gov/mold/mold-schools-and-commercial-buildings

Environmental Protection Agency, Mold Remediation in Schools and Commercial Buildings
The EPA's recommendations on mold remediation.
https://www.epa.gov/sites/default/files/2014-08/documents/moldremediation.pdf