Professional 3rd Party Review
By Licensed MAC
September 11, 2025

PREPARED BY

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ACO-1171
exp 1/30/2027

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Richard Arnett, Attorney at Law - Brim & Brim, P.C., Of Counsel
5926 Balcones Dr., #220 - Austin, Texas 78731 - (720)-366-7774

Re: ERC Mold Report dated 9/4/25 (ERC Project P-25017.26.08D) for Plano ISD – Murphy Middle School

Dear Mr. Arnett,

Thank you for reaching out to FixAIRx to offer a 3rd party professional review of this matter. You have asked me to review the ERC mold assessment for Murphy Middle School and to advise whether additional investigation is warranted. Based on my review of the ERC report, on-site photographs, and reported stakeholder complaints (teachers, staff, students, and parents) of their reported building-related symptoms, possibly caused or exacerbated by multiple areas that ERC identified with elevated humidity and recurring visible fungal growth. It is my professional opinion that a **re-inspection with an expanded scope is required** to protect occupant health, comply with best-practice guidance, and restore confidence in the campus environment.

Sincerely,

Wendy Michaelis, MAC
Public Speaker, Asthma & Allergy Patient Advocate,
Experienced Indoor Hygienist & TDLR Mold Assessment Consultant
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Executive Summary

- **Elevated indoor humidity was documented by ERC.** The report shows **indoor RH ranging from ~62% up to ~81%**, with CO_2 indoors **658–1322 ppm** vs **~420 ppm outdoors**. Sustained RH **>60%** is widely recognized by EPA/ASHRAE guidance as a condition that **supports mold amplification** and dust mite proliferation, while CO_2 >~1100 ppm during testing suggests **inadequate outside air/ventilation** for the tested conditions.
- **Visible fungal growth was reported by occupants** in multiple rooms (e.g., B119) at the start of the school year, consistent with humidity excursions and/or hidden moisture sources.
- **Sampling strategy and scope were limited** in ways that can **understate health risks** in schools:
    - Heavy reliance on **tape lifts of settled dust** and **after-hours sampling**, which may **not reflect occupied, HVAC-operating conditions** when exposure risk is highest.
    - **No intrusive HVAC inspection** (supply/return plenums, coils, drain pans, insulation liners) despite concerns about visible growth at **supply registers**—a classic indicator that contamination **may be within the air-handling path**.
    - **No particulate assessment (PM/particle counts)** and **no wall-cavity testing or moisture diagnostics** to identify possible **hidden sources** from prior roof and envelope leaks.
    - **No HVAC evaluation for proper operation** (recommended to be performed by a licensed HVAC technician)– if the HVAC system is not functioning at the proper efficiency, it is possible that the HVAC system may be causing or contributing to the elevated humidity conditions.
- **ERC's Conclusion that "no health risk" exists is not supported** by the above limitations and by EPA's *IAQ in Schools* guidance, which emphasizes controlling **moisture (RH 30–60%)**, verifying **ventilation per ASHRAE 62.1**, and investigating **sources/HVAC/pathways** under **realistic occupancy conditions**.

Given evidence of multiple areas with re-occurring visible growth, elevated RH in multiple rooms, and numerous health complaints, a **source-focused investigation**—not just screening samples—**is warranted**.

Why a Re-Inspection Is Required (Standards & Best-Practice Basis)

1. **EPA — IAQ in Schools (Appendix H: Mold & Moisture; Sections 4–6 Problem Solving).**
    - *Recommends best practice:* Keep RH 30–60%; diagnose sources + HVAC + pathways; evaluate occupied conditions; and address hidden moisture (e.g.,

interstitial wall cavities, roof leaks). After-hours snapshots and passive dust lifts do not characterize peak occupant exposure.
    - Photos of visible growth plus ERC-documented RH up to the 80% range meet EPA's definition of conditions that support amplification and warrant corrective action.
2. **ASHRAE 62.1 Ventilation for Acceptable IAQ (Classrooms: min. outdoor air ≈ 15 cfm/person).**
    - Indoor CO_2 ~1322 ppm with outdoors ~420 ppm indicates a differential ~900 ppm, exceeding the commonly referenced ~700 ppm guideline above outdoors used as a screening flag for underventilation. Underventilation compounds moisture and contaminant control problems.
3. **Texas Health & Safety Code, Ch. 385 (HB 2850 – IAQ in School District Buildings).**
    - While framed as voluntary guidelines, the Legislature directs the state to provide schools with IAQ guidance, including proper ventilation and pollution control. Considering documented high RH, visible growth, and stakeholder symptoms, following these guidelines by fully investigating sources and HVAC is a reasonable and prudent risk management response for the District.
4. **EPA/School Best Practices for HVAC Hygiene.**
    - Visible growth at supply registers obligates inspection of upstream HVAC components (supply/return plenums, liner, coils, drain pans, insulation, and ductwork) because register growth often reflects contamination within the air path, not just room surfaces.

Specific Technical Gaps in the ERC Approach

- **Timing & Operating Mode:** Evidence suggests sampling occurred after hours with the HVAC possibly cycled down, which suppresses airborne loads and undercounts exposure compared to a live classroom with movement, door cycling, and continuous air mixing. EPA emphasizes diagnosing under actual occupancy.
- **Method Selection:** Tape lifts/swabs of settled dust are qualitative and location-biased; they miss airborne peaks and HVAC-entrained reservoirs.
- **HVAC was Not Investigated:** No documentation of coil, drain pan, insulation liner, filters or plenum inspections; no borescope checks; no internal microbial surface bioburden screening; no condensate management verification; no filter specification/pressure drop or fresh-air damper performance checks.
- **Moisture Source Tracking Not Performed:** No infrared survey, pin/hammer probe, or wall-cavity air/borescope checks adjacent to leak histories (roof/wall transitions, window heads, mechanical penetrations).
- **No Particulate/Particle Count Data:** In schools, real-time particle counts (PM1/2.5/10) are a critical exposure surrogate and HVAC performance indicator; none were collected.
- **No Occupied-condition Air Sampling Plan:** Spore traps and particle counts should be performed with students present or during simulated occupancy (HVAC at normal setpoints, doors cycling, typical activity), not only after hours or with HVAC off.

Health & Risk Context (for Parents, Staff, and Board)

- Texas, the EPA and CDC all recognize that **moisture and mold** can cause health responses, trigger asthma, allergic responses, and irritant symptoms—effects that align with the complaints reported at MMS.
- Even when species and counts are "inconclusive," **visible growth + high humidity + symptoms meet the required action threshold for schools**: find the source(s), fix moisture, clean the HVAC, verify ventilation, and validate with post-work testing.
- Where an occupant (e.g., a teacher) has had **medical testing results indicating positive mycotoxin exposure**, it would also be prudent to perform similar mycotoxin testing in the school, especially when it helps identify focused remediation and communication. Mycotoxin testing results must be interpreted cautiously by qualified professionals.

Recommended Scope for the Re-Inspection (Actionable, Source-Focused)

A. Moisture/Building Envelope Diagnostics

1. **Full moisture mapping**: IR thermography plus pin/protimeter readings at exterior walls, roof transitions, window heads, and past leak areas; document hidden wet materials.
2. **Selective borescope or wall-cavity air testing** where readings or history indicate potential interstitial growth.
3. **Roof and flashing review** with above-ceiling inspection for wet insulation/drywall.

B. HVAC Hygiene & Ventilation Performance

1. **Intrusive HVAC inspection** (each AHU/RTU serving affected areas):
    - Coils (biofilm), drain pans (slope/standing water), insulation liners, supply/return plenums, and representative duct interiors; document with photographs.
    - Filter type and fit (recommend MERV-13 where the equipment can accommodate), differential pressure, fresh-air damper position and control logic, economizer function.
2. **Operate systems in normal occupied mode**; log CO_2, Temp, RH for at least one school week (data loggers) to confirm ventilation and dehumidification.
3. **Balance check by Licensed HVAC Technician** (spot measurements) to confirm proper function of HVAC system and ventilation from outdoor air intake approximates ASHRAE 62.1 rates for classrooms.

C. Occupied-Condition Air & Dust Characterization

1. **Real-time particle counts (PM1/2.5/10)**: indoors vs outdoors, at start of day, mid-day, and end of day, under typical activity.

2. **Spore trap air samples** during class in session (or simulated occupancy): representative rooms with complaints, adjacent controls, and outdoor references.
3. **Targeted surface/tape lifts**: only where visible growth is present (registers, diffusers, windowsills, ceiling grid above leaks).
4. **HVAC interior surface swabs**: coils/liners/drain pans/plenums where growth is suspected.

In Closing

Given the documented high humidity, visible fungal growth reports, multiple occupant complaints, and limitations in the prior methodology (after-hours, no HVAC inspection, no particulate or wall-cavity diagnostics), a renewed, source-centric investigation is the prudent and evidence-based course of action. This will allow the District to identify causes, remediate effectively, and deliver a clear, defensible PRV that reassures teachers, students, parents, and the community.

Thank you for this opportunity to opine on this project. I'm available to mobilize the re-inspection team, coordinate with Facilities and campus staff, and draft the interim control memo and parent/staff Q&A aligned to EPA's *IAQ Tools for Schools* communications best practices.

Respectfully,

Wendy Michaelis, MAC
Public Speaker, Asthma & Allergy Patient Advocate,
Experienced Indoor Hygienist & TDLR Mold Assessment Consultant
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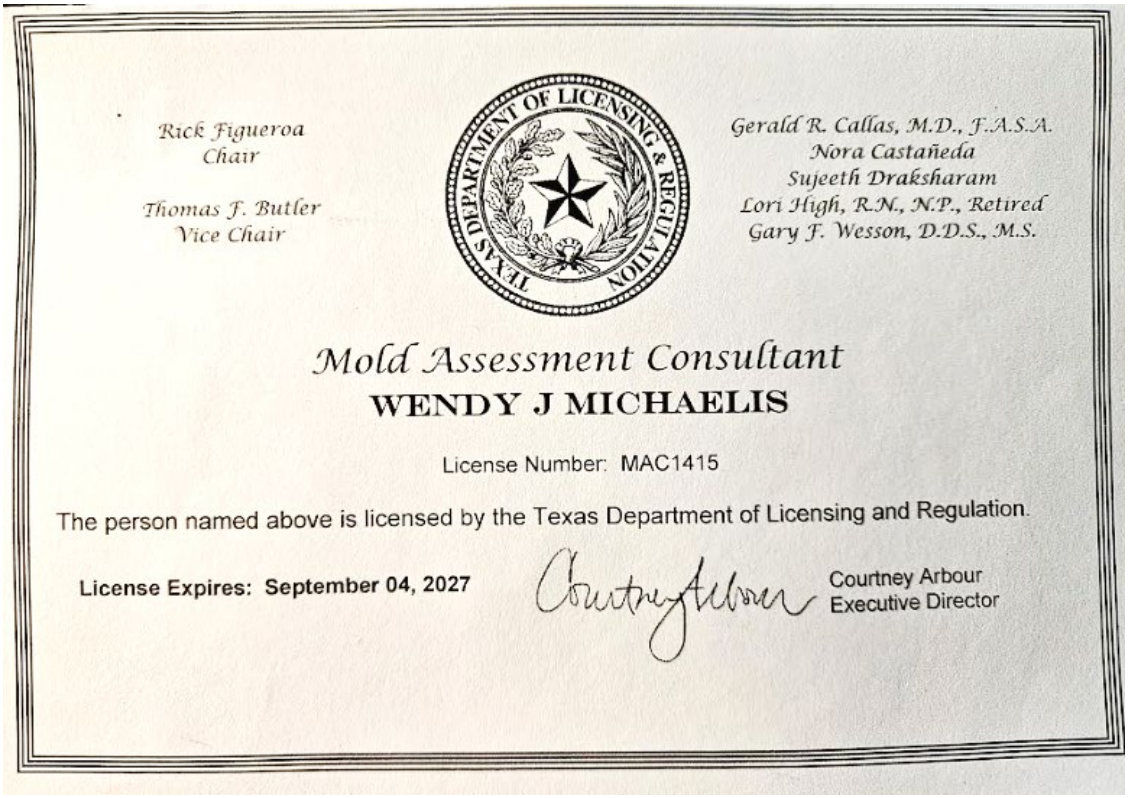

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