PureHealth
MOLD INSPECTIONS

WHOLE HOME HEALTH ASSESSMENT

Inspection Overview and Remediation Plan

Prepared for Sample Client

Property	Address withheld for privacy
Inspection date	October 2026
Inspection type	Whole Home Health Assessment
Job number	Sample Report
Inspector	Jason Richards, PureHealth Mold Inspections
Laboratory	Sporecyte (results received two days after the inspection)

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1 Holistic Environmental Summary

REMEDIATION RECOMMENDED

Key issue points

Water-damage mold in the master bathroom walls

Both wall cavities beside the shower and tub contained Stachybotrys, Chaetomium and Ulocladium. Failed grout and caulk give water a direct path in.

Both HVAC systems affected

Growth on both blowers and the upper coil. These systems move air through every room, so each is remediated as a complete system.

Attic and basement

Growth on the attic framing and roof deck; water moving through every basement foundation wall.

Four suspected leak areas

Four areas show evidence of water intrusion or suspected leaks. Elevated moisture was documented at the Dining Room ceiling during the inspection; the others require further investigation.

Zone snapshot

Select a zone number to jump to it

Zone	Area	What we found	What happens next
3.1	**1F Master Bathroom shower and tub walls**	Stachybotrys, Chaetomium and Ulocladium in both wall cavities; eroded grout, separating caulk	Remediate, then rebuild with new waterproofing
3.2	**Attic framing, patio door opening, roof deck**	Growth confirmed on framing and roof deck; water-damage indicators in attic air	Remediate
3.3	**Basement foundation walls, sump, cold vented room**	Efflorescence on every perimeter wall; growth on the wall and in the cold vented room	Manage foundation water, then remediate
3.4	**HVAC system, lower level**	Growth on the blower	Remediate as a complete system
3.5	**HVAC system, upper level**	Growth on the blower and evaporator coil	Remediate as a complete system
3.6	**2F Blue Bedroom, north walls**	Staining across the wall; elevated cavity sample	Reseal exterior trim, then remediate
3.7	**2F Yellow Bedroom, north wall**	Staining out of the outlets; Chaetomium in the cavity	Reseal exterior trim, then remediate
3.8	**1F Mudroom Bathroom vanity**	Light growth confirmed from an old leak	Replace the vanity
4.1	**1F Dining Room ceiling and east window**	Suspected leak beside the fireplace: cool spots on the thermal image and an elevated moisture reading	Building envelope specialist, then monitor

Zone	Area	What we found	What happens next
4.2	**1F Living Room east corner and patio door**	Water staining at the corner and threshold	Building envelope specialist, then monitor
4.3	**1F Foyer north wall**	Staining below a window that appears to be leaking	Building envelope specialist, then monitor
4.4	**1F Library and West Bedroom west walls**	Suspected leak at the bay window and corner wall staining	Building envelope specialist, then monitor
5.1	**Exterior window and door trim**	Open siding-to-trim joints	Reseal
5.2	**1F Kitchen sink cabinet and ceiling**	Past staining, dry today	Repair; replacing the base cabinet is reasonable
5.3	**Garage walls**	Staining from items stored on the shelves	Clear the shelves, keep items off the walls

History: your August 2026 ERMI pointed to water-damage molds. Our sampling located sources that fit, led by the Master Bathroom walls, the attic, the basement and both HVAC systems.

1.1 The Path to Completion

1. **Correct the water**
   Stop the water first: plumbing leaks, roof, windows, drainage. A shower or tub being remediated is taken out of use until it is rebuilt.
2. **Remediate**
   The remediation team seals each area in containment, removes damaged materials, remediates the structure and cleans each zone inside its containment.
3. **Verify (PRV)**
   PureHealth checks every remediated area while it is still open. Nothing is closed up until it passes.
4. **Rebuild**
   Walls, ceilings, finishes and shower waterproofing are rebuilt only after verification passes.
5. **Final whole-home cleaning**
   A whole-home small-particle cleaning after rebuilding, separate from the zone cleaning during remediation.

The finish line: PureHealth Post-Remediation Verification

PureHealth evaluates the remediated areas before close-up. Inspection, moisture measurements and selected sampling are used as appropriate to the assembly and scope. Deficiencies must be corrected and rechecked before reconstruction.

- **What we always check:** every remediated assembly by visual inspection, the remaining wood and structure with a moisture meter (15% or less), and humidity in the work areas.
- **When we add sampling:** surface and air samples are selected for the assembly and scope, for example where the laboratory confirmed growth or water-damage molds during this inspection.
- **If an area does not pass:** the remediation team corrects it and cleans it again, and we recheck it. Reconstruction waits until it passes.
- **Keep it open:** every remediated area stays accessible, with no insulation, drywall or close-up, until PureHealth has cleared it.
- **Two different cleanings:** zone cleaning happens inside containment during remediation, before verification. The final whole-home cleaning happens after reconstruction.

We recommend an Annual Home Health Review one year after the work is complete to confirm the home is staying healthy.

2 Environmental Insights

Prior testing ERMI 33.6 (lab's highest category) · HERTSMI-2 36 · collected by you, August 3, 2026

Aspergillus penicillioides | Aspergillus versicolor | Wallemia sebi | Chaetomium globosum | Stachybotrys chartarum

The ERMI shows mold DNA in settled dust but not its source. Our sampling located sources that fit this pattern, detailed in the zones.

2.1 Room-by-room environmental scan

Every room compared with an outdoor reading taken the same morning. The scan is a snapshot; building, moisture and laboratory findings lead the conclusions in this report.

HUMIDITY
41–52%
All rooms below the 60% level where mold growth becomes more likely

FRESH AIR (CARBON DIOXIDE)
683–1,254 ppm
Highest in the Master Bathroom; outdoors read 815 ppm. Fresh-air exchange is limited when the home is closed up

VOCS
Up to 2.9× outdoors
Highest on the 2nd floor

Room		Humidity (60% line)	Carbon dioxide (ppm)	VOCs vs outdoors
1F	Mudroom	52%	685	1.2×
1F	Laundry	50%	859	1.3×
1F	Mudroom Bathroom	49%	943	1.4×
1F	Kitchen	46%	995	1.4×
1F	Dining Room	45%	1,012	1.4×
1F	Living Room	45%	1,020	1.4×
1F	Library	45%	1,026	1.5×
1F	West Bedroom	45%	1,031	1.5×
1F	Master Bedroom	41%	1,143	2.0×
1F	Master Bathroom	41%	1,254	2.7×
1F	Foyer	43%	1,151	lower
2F	Hallway	41%	1,076	2.9×
2F	Hall Bathroom	42%	1,072	2.8×
2F	Blue Bedroom	42%	1,095	2.9×
2F	Yellow Bedroom	44%	1,149	2.9×
	Attic	44%	1,035	2.4×
BSMT	Basement Main	49%	1,137	1.8×
	Garage	43%	683	similar

Carbon dioxide under 800 | 800–999 | 1,000–1,499 | 1,500+ ppm

VOCs vs outdoors similar or lower | slightly higher | higher | 2.5×+

What we recommend from these readings: improve controlled fresh-air exchange, especially on the 2nd floor and in the master suite. Once the HVAC systems are remediated, a professionally designed ERV with filtration is the best long-term way to do this. In the meantime, run bathroom exhaust fans during and after showers, store paints, solvents and chemicals in the garage rather than the living space, and keep indoor humidity near 45% and below 50%.

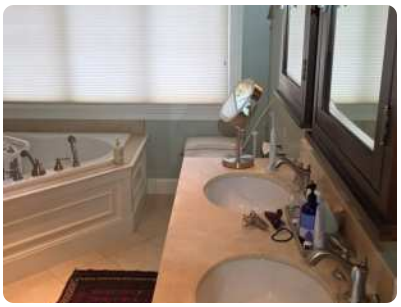
3 Red Zones · Highest-Priority Fixes and Remediation

These areas contain the home's most important corrective needs and take priority in the work plan.

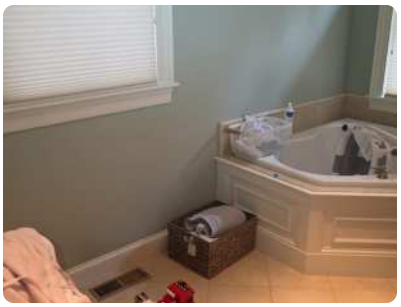
In the laboratory panels, red marks a water-damage indicator mold and amber marks an indoor growth type (Aspergillus/Penicillium, spore chains) above the outdoor control. Spore types that are common outdoors are listed but not highlighted. Surface excerpts are taken directly from the Sporecyte report.

3.1 RED ZONE · HIGHEST PRIORITY
1F Master Bathroom Shower and Tub Walls

- The grout along the interior shower wall below the faucet is **severely eroding**, and the caulking along the built-in tub is **separating**. The mold dog also flagged the tub area.
- Water staining is visible on the north wall immediately to the right of the shower entrance.
- We moisture metered and thermally scanned the staining, the grout and the tub caulk line: moisture was not elevated and the thermal scan showed no anomaly.
- **The wall cavity sample through the drywall gap beside the shower and the cavity sample at the tub caulk opening both contained Stachybotrys, Chaetomium and Ulocladium**, three water-damage indicators, with Aspergillus/Penicillium at about 29 and 19 times the outdoor level and very high hyphal fragments. These results describe the wall cavities, and they point to active growth inside them.
- The cavity behind the shower, sampled from the master closet side, was similar to outdoors, so the closet side of that wall does not appear affected at this point.



Master Bathroom · room view



Master Bathroom · room view

Required action: Stop using this shower and tub until it is rebuilt. Remediate the shower-adjacent and tub wall assemblies following our remediation protocol (Section 8, Assembly 1). Affected drywall and insulation are removed, and any framing or subfloor that looks deteriorated **must be evaluated for removal and replacement rather than treated in place.** If the opening shows the damage continues toward the master closet, expand the work to clean, dry material. While the walls are open, a plumber should confirm the shower valve, supply and drain connections are tight. **After PureHealth verification passes**, a qualified installer rebuilds the shower and tub surround with new backer, waterproofing, tile, grout and caulk. Regrouting or recaulking before remediation would only be removed again.



Staining to the right of the shower entrance



Eroded grout on the shower wall



Grout erosion below the faucet



Grout erosion, close view



Separating tub caulk

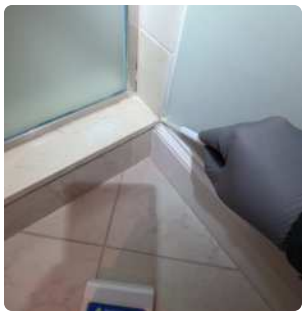


Tub caulk line

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ — **Master Bathroom · wall cavity through the drywall gap right of the shower** — 1F-BATH2-CAV-14

Organism	This sample	Outdoors	Comparison
Chaetomium	467	0	Water-damage indicator
Stachybotrys	4,067	0	Water-damage indicator
Ulocladium	5,067	0	Water-damage indicator
Aspergillus/Penicillium	2,333	80	About 29× outdoors
Cladosporium	8,533	0	Not in outdoor sample
Ascospores	1,133	0	Not in outdoor sample
Basidiospores	7,867	2,307	About 3.4× outdoors
Curvularia	133	0	Not in outdoor sample
Myrothecium	67	0	Not in outdoor sample
Smut/Periconia/Myxomycetes	667	0	Not in outdoor sample
Torula	67	0	Not in outdoor sample



Hyphal fragments were very high in this cavity, which is consistent with active growth on the materials inside it.

CAVITY AIR SAMPLE · SPORES/M³ **Master Bathroom · cavity at the tub caulk opening** 1F-BATH2-CAV-16

Organism	This sample	Outdoors	Comparison
Chaetomium	200	0	Water-damage indicator
Stachybotrys	400	0	Water-damage indicator
Ulocladium	1,533	0	Water-damage indicator
Aspergillus/Penicillium	1,533	80	About 19× outdoors
Asp/Pen strings (chains)	67	0	Not in outdoor sample
Cladosporium	5,133	0	Not in outdoor sample
Ascospores	67	0	Not in outdoor sample
Basidiospores	1,533	2,307	At or below outdoors
Curvularia	133	0	Not in outdoor sample
Epicoccum	67	0	Not in outdoor sample
Smut/Periconia/Myxomycetes	67	0	Not in outdoor sample

Stachybotrys and spore chains are present. Both point to growth close to the sampling point.



CAVITY AIR SAMPLE · SPORES/M³ **Master Bathroom · cavity behind the shower, from the master closet** 1F-BATH2-CAV-15

Organism	This sample	Outdoors	Comparison
Aspergillus/Penicillium	67	80	At or below outdoors

No water-damage indicator molds. The lab rated this sample similar to the outdoor control.



3.2

RED ZONE · HIGHEST PRIORITY

Attic Framing, Future Patio Door Opening and Roof Deck

- The lower portion of the future patio door opening shows **water staining from a past event**. It was not damp during our visit.
- Water staining is present on the lower wall framing at the northwest and southeast sides, and we noted suspected growth on the east roof deck at the sixth rafter from the masonry chimney.
- We moisture metered and thermally scanned the stained framing: moisture was not elevated and the thermal scan showed no anomaly at the time of our visit.
- **The laboratory confirmed growth on all three attic surfaces we sampled:** Aspergillus/Penicillium, Basidiospore, Cladosporium, hyphal and Ulocladium growth below the patio door opening; Cladosporium and hyphal growth on the roof deck rafter; and Cladosporium growth on the lower wall framing.
- Both attic air samples contained **Chaetomium**, and the upper sample also contained **Ulocladium**, both water-damage indicators. The lower sample showed Aspergillus/Penicillium at about twice the outdoor level with spore chains.
- The attic has blown-in cellulose insulation and ridge, soffit and powered vents.



Attic · room view



Attic · room view

> **Required action:** Confirm that the roof, the chimney flashing and the future patio door opening are weathertight, and correct any water entry before remediation. Then remediate the affected framing, roof deck and sheathing following our remediation protocol (Section 8, Assembly 2). Remove cellulose insulation in the affected areas so the framing can be reached, and any wood that looks deteriorated **must be evaluated for removal and replacement rather than treated in place.** Have the attic ventilation reviewed so the powered vent does not work against the ridge and soffit vents.



Staining below the future patio door opening



Lower wall framing staining



Lower wall framing staining, second side

LABORATORY RESULTS FOR THIS ZONE

AIR SAMPLE · SPORES/M³ **Attic · upper attic air** ATT-CMP-26

Organism	This sample	Outdoors	Comparison
Chaetomium	27	0	Water-damage indicator
Ulocladium	40	0	Water-damage indicator
Aspergillus/Penicillium	67	80	At or below outdoors
Cladosporium	187	0	Not in outdoor sample
Ascospores	40	0	Not in outdoor sample
Basidiospores	573	2,307	At or below outdoors
Botrytis	13	13	At or below outdoors
Myrothecium	13	0	Not in outdoor sample



Hyphal fragments were about 4.4 times the outdoor level.

AIR SAMPLE · SPORES/M³ **Attic · lower attic, central air** ATT-CMP-31

Organism	This sample	Outdoors	Comparison
Chaetomium	40	0	Water-damage indicator
Alternaria	13	0	Not in outdoor sample
Aspergillus/Penicillium	160	80	About 2.0× outdoors
Asp/Pen strings (chains)	13	0	Not in outdoor sample
Cladosporium	80	0	Not in outdoor sample
Ascospores	80	0	Not in outdoor sample
Basidiospores	760	2,307	At or below outdoors
Polythrincium	13	0	Not in outdoor sample
Smut/Periconia/Myxomycetes	40	0	Not in outdoor sample



Spore chains and Chaetomium point to growth within the attic.

SURFACE SAMPLE **Future patio door opening, lower portion** ATT-SWB-29

Sample ID: ATT-SWB-29 · Attic via Hallway · Future patio door — lower portion of th... | Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Ascospore	–	Present
Aspergillus / Penicillium	Light	–
Basidiospore	Light	–
Cladosporium	Light	–
Hypha	Light	–
Ulocladium	Light	–



Future patio door opening, lower portion: **light Aspergillus/Penicillium, Basidiospore, Cladosporium, hyphal and Ulocladium growth**.

SURFACE SAMPLE **East roof deck, sixth rafter from the chimney** ATT-SWB-32

Sample ID: ATT-SWB-32 · Attic via Hallway · East roof deck — sixth rafter from the ... | Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Cladosporium	Light	–
Hypha	Light	–



East roof deck, sixth rafter from the chimney: **light Cladosporium and hyphal growth**.

SURFACE SAMPLE **Lower wall framing, northwest and southeast** ATT-SWB-33

Sample ID: ATT-SWB-33 · Attic via Hallway · Framing — Lower wall framing NW and SE | Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Cladosporium	Light	–
Hypha	–	Present



Lower wall framing, northwest and southeast: **light Cladosporium growth**, with Aspergillus/Penicillium and hyphae in the background.

RED ZONE · HIGHEST PRIORITY

3.3 Basement Main Foundation Walls, Sump and Cold Vented Room

- **Efflorescence** (white mineral deposits) runs along the lower portion of every basement perimeter wall. It forms when water moves through the concrete and evaporates, so it shows a long-term moisture path through the foundation.
- The sump in the floor is **open, with no pump**, and suspected growth is visible inside it. The PVC piping near the water system also shows suspected growth.
- Water staining is present on the south wall of the cold vented room.
- We moisture metered and thermally scanned the perimeter walls and the cold vented room staining: moisture was not elevated and the thermal scan showed no anomaly.
- **The laboratory confirmed growth on the efflorescence at the lower northwest wall** (Basidiospore, Cladosporium and hyphal growth) **and on the south wall of the cold vented room** (Basidiospore and hyphal growth, with Stachybotrys in the background).
- The basement air contained Aspergillus/Penicillium at about **4.7 times the outdoor level** with spore chains.



Basement Main · room view



Basement Main · room view

Required action: Correct the water entering the foundation first, then remediate the basement following our remediation protocol (Section 8, Assembly 3):

- Check exterior grading, gutters and downspouts so water drains away from the foundation, and have the foundation walls evaluated for seepage.
- Evaluate the open sump: if water collects there, install a working pump with a discharge away from the house; in either case fit a sealed, gasketed lid.
- Replace the PVC section near the water system that shows suspected growth.
- Remediate the affected foundation wall surfaces and the cold vented room following the protocol. Any wood framing found against these walls that is non-load-bearing can be removed and replaced as an alternative to remediating it in place.
- Run dedicated basement dehumidification to keep humidity near 45% and below 50%.



Open sump with no pump



Efflorescence on the perimeter wall



Efflorescence along the lower wall



Efflorescence near the water system



PVC near the water system with suspected growth



Cold vented room



Cold vented room, south wall



Staining on the cold vented room south wall

LABORATORY RESULTS FOR THIS ZONE

AIR SAMPLE · SPORES/M³ **Basement Main · center of the basement** B-BED7-CMP-34

Organism	This sample	Outdoors	Comparison
Alternaria	13	0	Not in outdoor sample
Aspergillus/Penicillium	373	80	About 4.7× outdoors
Asp/Pen strings (chains)	27	0	Not in outdoor sample
Cladosporium	520	0	Not in outdoor sample
Ascospores	13	0	Not in outdoor sample
Basidiospores	187	2,307	At or below outdoors
Smut/Periconia/Myxomycetes	13	0	Not in outdoor sample



Aspergillus/Penicillium with spore chains above the outdoor level points to growth within the basement.

SURFACE SAMPLE **Efflorescence, lower northwest wall right of the water softener** B-BED7-SWB-35

Sample ID: B-BED7-SWB-35 · Basement
Basement Main · All walls lower portion
Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Basidiospore	Light	–
Cladosporium	Light	–
Hypha	Light	–



Efflorescence, lower northwest wall right of the water softener: **light Basidiospore, Cladosporium and hyphal growth**, with Aspergillus/Penicillium in the background.

SURFACE SAMPLE **Cold vented room, south wall** B-BED7-SLD-43

Sample ID: B-BED7-SLD-43 · Basement
Basement Main · South wall — In cold vented

Sample Type: Tape

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Basidiospore	Light	–
Cladosporium	–	Present
Hypha	Light	–
Stachybotrys	–	Present



Cold vented room, south wall: **light Basidiospore and hyphal growth**, with Aspergillus/Penicillium, Cladosporium and Stachybotrys in the background.

3.4 RED ZONE · HIGHEST PRIORITY
HVAC System – Lower Level


Lower-level HVAC · room view

- The laboratory confirmed **Basidiospore and Cladosporium growth on the blower**, with Aspergillus/Penicillium and hyphae in the background.
- The air sampled at the return and filter contained **Chaetomium**, a water-damage indicator, with Aspergillus/Penicillium at about twice the outdoor level with spore chains and hyphal fragments at about 14 times outdoors.
- We found **rusting on the lower return ducting**, which shows that moisture has been reaching it.
- The evaporator coil swab showed no growth, and the supply plenum swab showed only background Basidiospores, but the blower and return results show the system is carrying growth.

Required action: Remediate this system from end to end, not just the blower. A qualified HVAC contractor should clean the return path, filter housing, cabinet, blower, coil, condensate pan and line, supply plenum, ducts, boots and registers using HVAC-safe methods (Section 8, Assembly 4). Evaluate the rusted return ducting for replacement and find the moisture causing it. Any affected flexible duct must be **removed and replaced**, not cleaned. Seal any cabinet or return leakage, correct any filter bypass, then verify airflow, balance, static pressure and condensate drainage before the system returns to service.


Lower-level HVAC system


Return ducting with rust


Return and filter area


Blower compartment

LABORATORY RESULTS FOR THIS ZONE

AIR SAMPLE · SPORES/M³ Lower-level HVAC · return and filter air — B-HVAC1-INT-AIR-36

Organism	This sample	Outdoors	Comparison
Chaetomium	13	0	Water-damage indicator
Alternaria	13	0	Not in outdoor sample
Aspergillus/Penicillium	160	80	About 2.0× outdoors
Asp/Pen strings (chains)	13	0	Not in outdoor sample
Cladosporium	280	0	Not in outdoor sample
Ascospores	27	0	Not in outdoor sample
Basidiospores	400	2,307	At or below outdoors
Curvularia	53	0	Not in outdoor sample
Mitospores	13	0	Not in outdoor sample
Smut/Periconia/Myxomycetes	93	0	Not in outdoor sample
Torula	67	0	Not in outdoor sample

Hyphal fragments were about 14 times the outdoor level, which together with the spore chains points to growth inside the system.

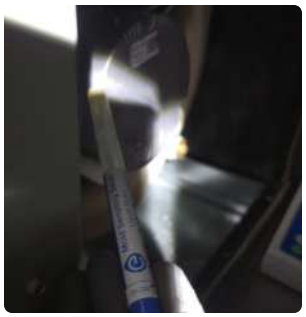


SURFACE SAMPLE Lower-level blower — B-HVAC1-SWB-BLW-37

Sample ID: B-HVAC1-SWB-BLW-37 · Basement HVAC Lower Level · Blower wheel / housing — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Basidiospore	Light	–
Cladosporium	Light	–
Hypha	–	Present

Lower-level blower: **light Basidiospore and Cladosporium growth**, with Aspergillus/Penicillium and hyphae in the background.



SURFACE SAMPLE Lower-level evaporator coil — B-HVAC1-SWB-EVP-38

Sample ID: B-HVAC1-SWB-EVP-38 · Basement HVAC Lower Level · Evaporator coil — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
–	None Found	None Found

Lower-level evaporator coil: **no fungal growth** and no background spores found.



SURFACE SAMPLE **Lower-level supply plenum** B-HVAC1-SWB-SUP-39

Sample ID: B-HVAC1-SWB-SUP-39 · Basement HVAC Lower Level · Supply plenum / trunk line — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Basidiospore	–	Present



Lower-level supply plenum: **no fungal growth**; Basidiospores in the background only.

3.5

RED ZONE · HIGHEST PRIORITY

HVAC System – Upper Level



Upper-level HVAC · room view

- This system is located in the basement and is a separate system from the lower-level unit.
- The laboratory confirmed **Basidiospore, Cladosporium, Chaetomium and hyphal growth on the blower wheel**, with Aspergillus/Penicillium and Ulocladium in the background. Chaetomium and Ulocladium are water-damage indicators.
- The laboratory also confirmed **Cladosporium growth on the evaporator coil**.
- The refrigerant (coolant) line is not connected at the evaporator coil. You confirmed this unit is used for heating only, so this is expected.
- The return air sample was similar to outdoors. The growth is on the components themselves.

> **Required action:** Remediate this system as a complete system, separately from the lower-level unit, using HVAC-safe methods (Section 8, Assembly 5): the return path, filter housing, cabinet, blower, coil, condensate pan and line, supply plenum, ducts, boots and registers. Any affected flexible duct must be **removed and replaced**, not cleaned. Verify airflow, balance, static pressure and condensate drainage before the system returns to service.



Upper-level HVAC system



Refrigerant line at the coil (unit used for heating only)

LABORATORY RESULTS FOR THIS ZONE

AIR SAMPLE · SPORES/M³ Upper-level HVAC · return air — B-HVAC2-INT-AIR-40

Organism	This sample	Outdoors	Comparison
Alternaria	13	0	Not in outdoor sample
Aspergillus/Penicillium	27	80	At or below outdoors
Cladosporium	67	0	Not in outdoor sample
Ascospores	13	0	Not in outdoor sample
Basidiospores	67	2,307	At or below outdoors

No water-damage indicator molds in the air. The lab rated this sample similar to the outdoor control.



SURFACE SAMPLE Upper-level blower wheel — B-HVAC2-SWB-BLW-41

Sample ID: B-HVAC2-SWB-BLW-41 · Basement HVAC Upper Level · Blower wheel / housing — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Basidiospore	Light	–
Cladosporium	Light	–
Chaetomium	Light	–
Hypha	Light	–
Ulocladium	–	Present



Upper-level blower wheel: **light Basidiospore, Cladosporium, Chaetomium and hyphal growth**, with Aspergillus/Penicillium and Ulocladium in the background.

SURFACE SAMPLE Upper-level evaporator coil — B-HVAC2-SWB-EVP-42

Sample ID: B-HVAC2-SWB-EVP-42 · Basement HVAC Upper Level · Evaporator coil — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Aspergillus / Penicillium	–	Present
Basidiospore	–	Present
Cladosporium	Light	–



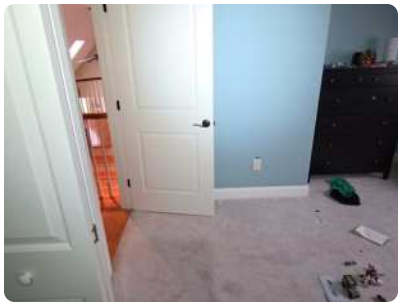
Upper-level evaporator coil: **light Cladosporium growth**, with Aspergillus/Penicillium and Basidiospore in the background.

3.6

RED ZONE · HIGHEST PRIORITY

2F Blue Bedroom North and Northwest Wall

- Water staining covers **nearly the entire north and northwest wall**, including staining coming out of the outlets.
- We moisture metered and thermally scanned the staining: moisture was not elevated and the thermal scan showed no anomaly at the time of our visit.
- **The wall cavity sample at the left outlet under the window showed Aspergillus/Penicillium at about 6.7 times the outdoor level with spore chains**. The lab rated this cavity highly elevated.
- The cavity samples at the left of the southwest wall and at the right outlet were similar to outdoors.
- Outside, we found separation between the siding and the window trim around most windows (see 5.1), which is a possible water path into this wall.



Blue Bedroom · room view



Blue Bedroom · room view

Required action: Find and correct the water entry at this wall first, starting with the window and the exterior siding-to-trim joints. Then remediate the north wall assembly following our remediation protocol (Section 8, Assembly 6). Affected drywall and insulation are removed, and the opening is expanded wherever staining or growth continues. Any framing or sheathing that looks deteriorated **must be evaluated for removal and replacement rather than treated in place.** Have an electrician check the outlets on this wall, because the staining comes out of them.



Staining on the north wall



Staining across the northwest wall



Staining at the outlet



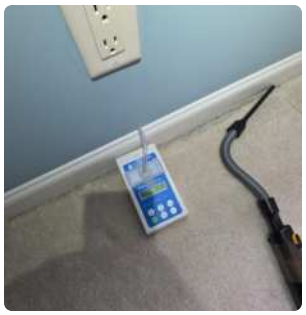
Outlet on the stained wall

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ — Blue Bedroom · wall cavity at the left outlet under the window — 2F-BED5-CAV-20

Organism	This sample	Outdoors	Comparison
Aspergillus/Penicillium	533	80	About 6.7× outdoors
Asp/Pen strings (chains)	67	0	Not in outdoor sample
Cladosporium	333	0	Not in outdoor sample

Spore chains show growth close to the sampling point inside this cavity.



CAVITY AIR SAMPLE · SPORES/M³ — Blue Bedroom · wall cavity, left of the southwest wall — 2F-BED5-CAV-19

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

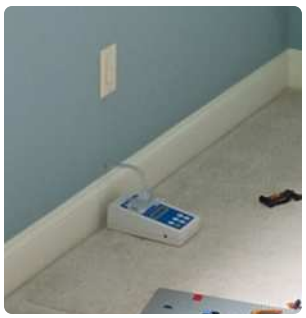
The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ — Blue Bedroom · wall cavity at the right outlet — 2F-BED5-CAV-21

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



3.7

RED ZONE · HIGHEST PRIORITY

2F Yellow Bedroom North Wall

- Water staining is present at several places along the **north wall, on the left and right sides and coming out of the outlets**.
- We moisture metered and thermally scanned the staining along the north wall: moisture was not elevated and the thermal scan showed no anomaly.
- **The wall cavity sample at the right side of the north wall staining contained Chaetomium**, a water-damage indicator, and the lab rated it highly elevated.
- The window cavity sample at the left outlet showed hyphal fragments at about 10 times outdoors. The lab rated it slightly elevated.
- The cavity samples near the left staining and at the right window outlet were similar to outdoors.

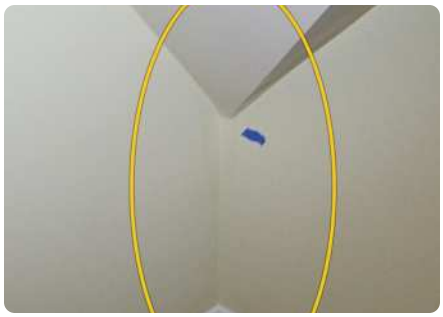


Yellow Bedroom · room view



Yellow Bedroom · room view

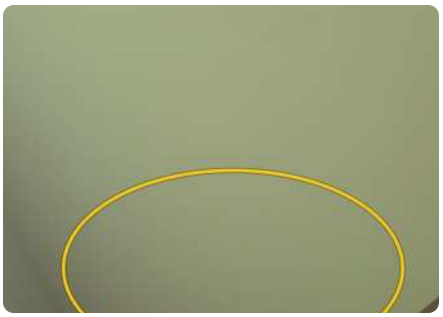
Required action: Find and correct the water entry at this wall first, starting with the windows and the exterior siding-to-trim joints (see 5.1). Then remediate the north wall assembly following our remediation protocol (Section 8, Assembly 7). Affected drywall and insulation are removed, and the opening is expanded wherever staining or growth continues. Any framing or sheathing that looks deteriorated **must be evaluated for removal and replacement rather than treated in place.** Have an electrician check the outlets on this wall.



Staining on the north wall



North wall corner



Staining on the north wall, right side

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ — Yellow Bedroom · wall cavity at the right north wall staining — 2F-BED6-CAV-25

Organism	This sample	Outdoors	Comparison
Chaetomium	67	0	Water-damage indicator
Ascospores	67	0	Not in outdoor sample
Basidiospores	133	2,307	At or below outdoors

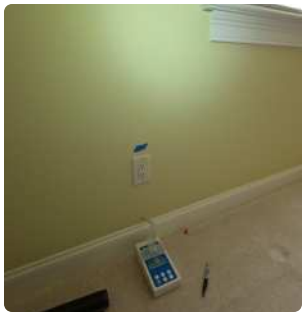
Chaetomium grows on wet cellulose materials such as drywall paper and wood, so its presence in this cavity points to past or ongoing wetting.



CAVITY AIR SAMPLE · SPORES/M³ — Yellow Bedroom · window cavity at the left outlet — 2F-BED6-CAV-23

Organism	This sample	Outdoors	Comparison
Cladosporium	267	0	Not in outdoor sample
Ascospores	67	0	Not in outdoor sample
Basidiospores	800	2,307	At or below outdoors
Pestalotiopsis	67	0	Not in outdoor sample
Smut/Periconia/Myxomycetes	67	0	Not in outdoor sample

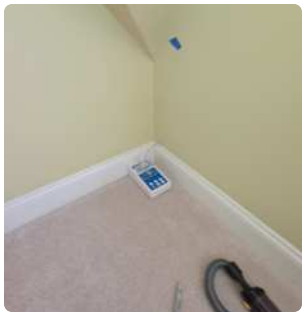
Hyphal fragments were about 10 times the outdoor level.



CAVITY AIR SAMPLE · SPORES/M³ — Yellow Bedroom · wall cavity near the left staining — 2F-BED6-CAV-22

Organism	This sample	Outdoors	Comparison
Basidiospores	133	2,307	At or below outdoors

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **Yellow Bedroom · window cavity at the right outlet** 2F-BED6-CAV-24

Organism	This sample	Outdoors	Comparison
Aspergillus/Penicillium	67	80	At or below outdoors
Basidiospores	333	2,307	At or below outdoors

The lab rated this sample similar to the outdoor control.



3.8

RED ZONE · HIGHEST PRIORITY

1F Mudroom Bathroom Vanity

- The lowest drawer under the vanity sink shows staining from what appears to be a **past leak at the P-trap**.
- We moisture metered and thermally scanned the drawer and cabinet floor: moisture was not elevated and the thermal scan showed no anomaly, so the leak was not active at the time of our visit.
- **The laboratory confirmed light hyphal growth on the vanity surface**, with Ascospore, Aspergillus/Penicillium, Basidiospore and Cladosporium in the background.
- Because the laboratory confirmed growth on an interior surface, this is a Red zone.



Mudroom Bathroom · room view



Mudroom Bathroom · room view

Required action: Have a plumber confirm the P-trap and drain connections are tight and dry. Then remove the affected vanity bottom and drawer box, or remove and replace the entire vanity, which is a reasonable decision and often the more practical one. Inspect the wall and floor behind the vanity and remediate following our remediation protocol (Section 8, Assembly 8).



Staining under the vanity sink

LABORATORY RESULTS FOR THIS ZONE

SURFACE SAMPLE **Vanity under the sink, lowest drawer** 1F-BATH1-SWB-01

Sample ID: 1F-BATH1-SWB-01 · 1F Bathroom Mudroom · Fixtures › Vanity › Under sink —... Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Ascospore	–	Present
Aspergillus / Penicillium	–	Present
Basidiospore	–	Present
Cladosporium	–	Present
Hypha	Light	–



Vanity under the sink, lowest drawer: **light hyphal growth**, with Ascospore, Aspergillus/Penicillium, Basidiospore and Cladosporium in the background.

4 Orange Zones · Correct and Monitor

We did not find significant elevations in these areas. Each one needs the recommended correction and monitoring. The remediation plan includes an optional protocol for each, in case the correction or further findings call for it.

4.1 ORANGE ZONE · CORRECT AND MONITOR
1F Dining Room Ceiling and East Window

- Our thermal image showed **cool spots in the ceiling immediately to the right of the fireplace**. Cool spots like these can mean moisture in the material.
- We moisture metered the same spot: it read **18%, which is elevated**.
- Together these point to a **suspected leak**. We could not confirm the source, or whether it is still active, from inside the room. The chimney flashing and the roof above are the first places to check.
- The mold dog alerted at the left side of the east window. We moisture metered and thermally scanned the window area as well, with no elevated moisture and no thermal anomaly there.
- Both wall and ceiling cavity samples were similar to outdoors.
- This is an Orange zone because of the suspected leak, even though both samples were similar to outdoors. If water is getting in here, it will damage the inside of the ceiling over time.

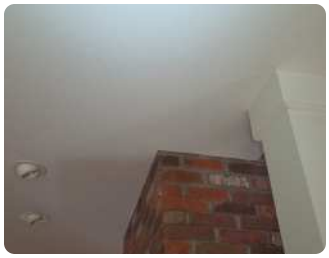


Dining Room · room view



Dining Room · room view

Required action: Have a **building envelope specialist** examine the ceiling beside the fireplace and determine whether and where water is getting in, starting with the chimney flashing and the roof above, and have any plumbing above this ceiling checked. Correct any leak they find. Then monitor the area (Section 8, Assembly 9). We did not find significant elevations here, so remediation is not required now. If the correction or further findings show hidden damage or growth, the optional protocol in that assembly applies. Reseal the east window trim as part of 5.1.



Ceiling right of the fireplace



Thermal image: cool spots in the ceiling



Moisture meter at the cool spot (18%)



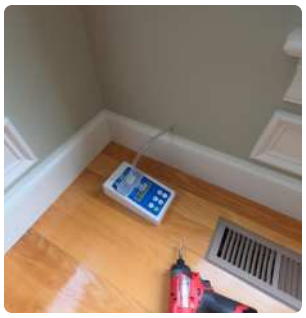
Mold-dog tape at the east window

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ **Dining Room · east window cavity, left side** 1F-DIN1-CAV-03

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **Dining Room · ceiling cavity right of the fireplace** 1F-DIN1-CAV-04

Organism	This sample	Outdoors	Comparison
Basidiospores	67	2,307	At or below outdoors

The lab rated this sample similar to the outdoor control.

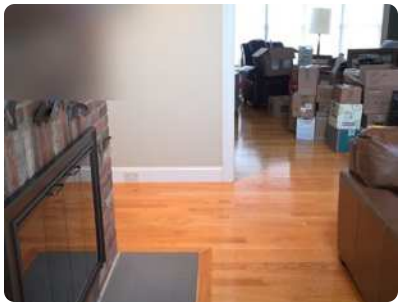


4.2

ORANGE ZONE · CORRECT AND MONITOR

1F Living Room East Wall Corner and Patio Door

- The top corner of the east wall is a **suspected leak point**, with water staining at the corner.
- We moisture metered and thermally scanned the stain: moisture was not elevated and the thermal scan showed no anomaly, so no water was entering at the time of our visit.
- The patio door threshold shows staining and wear from water. We moisture metered and thermally scanned the threshold as well: moisture was not elevated and the thermal scan showed no anomaly.
- The wall cavity sample at the corner was similar to outdoors, and the threshold swab showed no growth.



Living Room · room view



Living Room · room view

Required action: Have a **building envelope specialist** examine the east corner and the patio door and find where water is getting in, including the roof edge, gutter and exterior wall above the corner and the door threshold, sill pan and sealant. Correct any leaks they find. Then monitor the area (Section 8, Assembly 10). We did not find significant elevations here, so remediation is not required now. If the correction or further findings show hidden damage or growth, the optional protocol in that assembly applies.



East wall top corner



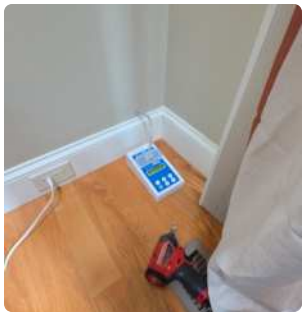
Patio door threshold

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ **Living Room · east wall cavity, top corner** 1F-LIV1-CAV-05

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.

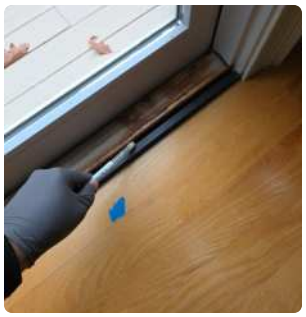


SURFACE SAMPLE **Patio door threshold** 1F-LIV1-SWB-06

Sample ID: 1F-LIV1-SWB-06 · 1F Living Room · East wall › Door › Threshold — Sample Type: Swab

Fungal Identification	Fungal Growth	Background Spores
Hypha	–	Present
Ulocladium	–	Present

Patio door threshold: **no fungal growth**; hyphae and Ulocladium in the background only.



4.3

ORANGE ZONE · CORRECT AND MONITOR

1F Foyer North Wall Above the Closets

- Two water stains streak down the north wall, one above each closet. The stain above the right closet is the more prominent.
- **The window above this wall appears to be leaking**, and the staining runs down the wall below it.
- We moisture metered and thermally scanned both stains: moisture was not elevated and the thermal scan showed no anomaly. The wall was dry at the time of our visit. If the window is letting water in, the staining will return when water reaches it again.
- Both wall cavity samples were similar to outdoors.



Foyer · room view



Foyer · room view

Required action: Have a **building envelope specialist** examine the window above this wall, including its flashing and sealant, and the wall below it. Find the water entry point and correct it. Then monitor the area (Section 8, Assembly 11). We did not find significant elevations here, so remediation is not required now. If the correction or further findings show hidden damage or growth, the optional protocol in that assembly applies.



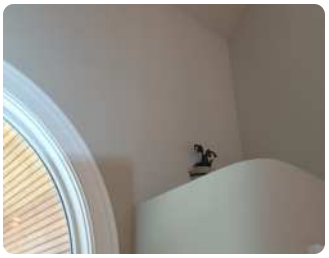
Staining above the closets



Staining above the left closet



Staining above the right closet



North wall, second stain

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ **Foyer · north wall cavity above the closets** 1F-HALL2-CAV-08

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **Foyer · north wall cavity, second stain** 1F-HALL2-CAV-09

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



4.4

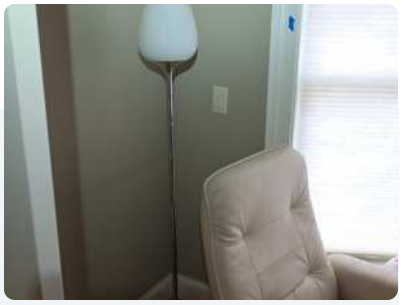
ORANGE ZONE · CORRECT AND MONITOR

1F Library Bay Window and West Bedroom West Wall

- In the Library, the mold dog alerted below the west bay window. We moisture metered and thermally scanned the bay window: moisture was not elevated and the thermal scan showed no anomaly.
- In the West Bedroom, **water staining** is visible at the top west corner where the crown molding meets the wall, which points to a suspected leak above this wall.
- We moisture metered and thermally scanned the West Bedroom staining as well: moisture was not elevated and the thermal scan showed no anomaly.
- All three wall cavity samples were similar to outdoors.



Library · room view



West Bedroom · room view

Required action: Have a **building envelope specialist** examine the Library bay window and the exterior wall and roof edge above the West Bedroom west wall, find any water entry point, and correct it, including the exterior trim on these walls from 5.1. Then monitor the area (Section 8, Assembly 12). We did not find significant elevations here, so remediation is not required now. If the correction or further findings show hidden damage or growth, the optional protocol in that assembly applies.



West Bedroom staining at the top west corner

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ **Library · west bay window cavity, through the right outlet** 1F-BED2-CAV-07

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **West Bedroom · west wall cavity, top corner** 1F-BED3-CAV-10

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **West Bedroom · cavity at the outlet under the bay window** 1F-BED3-CAV-11

Organism	This sample	Outdoors	Comparison
Cladosporium	67	0	Not in outdoor sample

The lab rated this sample similar to the outdoor control.



5 Yellow Zones · Preventive and Supporting Corrections

These standalone issues need correction to improve conditions and help prevent future problems.

5.1 YELLOW ZONE · PREVENTIVE CORRECTION
Exterior Window and Door Trim

- Around most windows and doors on the southwest, southeast and northeast sides, the joint where the siding meets the window and door trim shows **separation and cracking**.
- We could not confirm water entry from the outside alone, but these joints are a possible water path into the walls behind them, including the 2nd floor bedroom walls in 3.6 and 3.7.

> **Required action:** Have a qualified siding or exterior contractor inspect and reseal the siding-to-trim joints and check the window and door flashing. Correct the windows serving the 2nd floor bedrooms first. If the repair exposes wet or stained sheathing, stop and let us review it before the area is closed.


Southwest side, trim separation


Southwest side, close view


Southeast side window trim


Southeast side trim joint


Southeast side window


Southeast side trim cracking


Southeast side trim, second window

5.2

YELLOW ZONE · PREVENTIVE CORRECTION

1F Kitchen Sink Cabinet and Ceiling

- The cabinet floor under the main sink shows bubbling from a past leak.
- We moisture metered and thermally scanned the cabinet: moisture was not elevated and the thermal scan showed no anomaly.
- A crack runs across the ceiling. You told us you believe it is from settling, and we saw no water staining with it. We moisture metered and thermally scanned the crack and found no elevated moisture and no thermal anomaly.
- The cavity sample under the sink was similar to outdoors.



Kitchen · room view



Kitchen · room view

Required action: Have a plumber confirm the sink supply lines, drain and dishwasher connections are tight and dry. Remove the damaged cabinet floor; replacing the whole sink base cabinet is a reasonable decision and often the more practical one. Monitor the ceiling crack; if staining appears with it, contact us.



Ceiling crack

LABORATORY RESULTS FOR THIS ZONE

CAVITY AIR SAMPLE · SPORES/M³ **Kitchen · cabinet cavity under the main sink** 1F-KIT-CAV-02

Organism	This sample	Outdoors	Comparison
Aspergillus/Penicillium	67	80	At or below outdoors
Basidiospores	200	2,307	At or below outdoors
Rust spores	67	0	Not in outdoor sample

The lab rated this sample similar to the outdoor control.



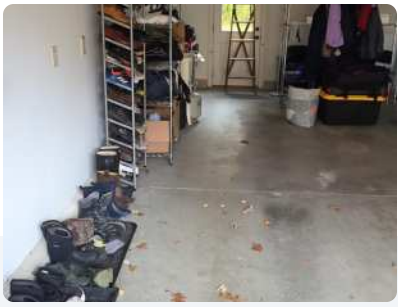
5.3

YELLOW ZONE · PREVENTIVE CORRECTION

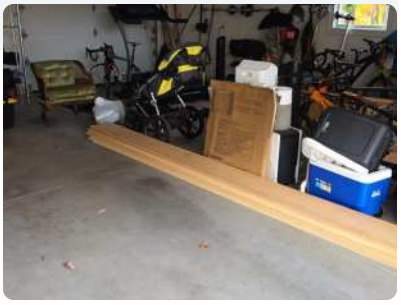
Garage Wall Staining

- Water staining is visible on the north and south garage walls behind the shelving. It appears to be from historical items stored on those shelves and was not sampled.
- We moisture metered and thermally scanned the staining: moisture was not elevated and the thermal scan showed no anomaly.

Required action: Remove any remaining items that may have leaked or spilled, and keep stored items off the walls so they can dry. If the staining spreads or the drywall softens, contact us.



Garage · room view



Garage · room view



North wall staining



South wall staining behind the shelving

6 Areas Inspected With No Defects Found

Every room in the home received the same inspection: a visual inspection with room photographs, any mold-dog tape locations checked, humidity and temperature recorded, and our environmental scan compared with the outdoor reading. The rooms below showed no defects that need correction. Where we took a laboratory sample in one of these rooms, the result is shown with that room. Rooms with findings are covered in Sections 3 to 5.

1F Mudroom

Humidity 53% Carbon dioxide 685 ppm; VOCs about 1.2× **No defects found**

Highest humidity in the home during the scan, still below 60%.





1F Laundry

Humidity 50% Similar to outdoors; VOCs about 1.3× **No defects found**

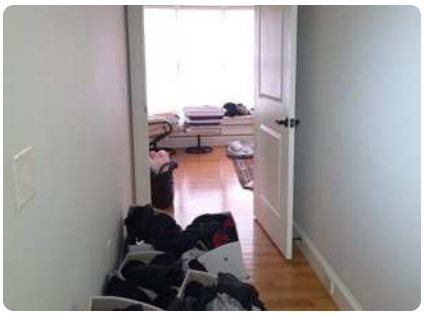
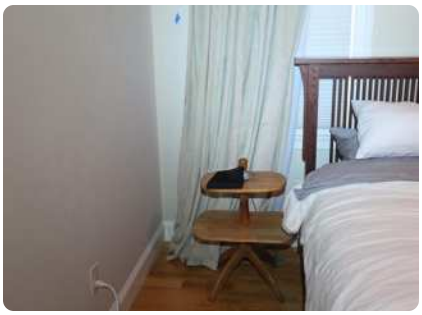




1F Master Bedroom

Humidity 41% Carbon dioxide 1,143 ppm; VOCs about 2× **No defects found**

Both mold-dog locations were sampled; results similar to outdoors.

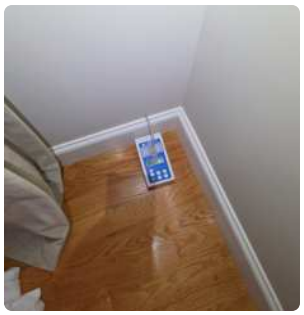




LABORATORY RESULTS FOR THIS ROOM

CAVITY AIR SAMPLE · SPORES/M³ — **Master Bedroom · southeast wall cavity, right side (mold-dog location)** — 1F-BED4-CAV-12

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ — **Master Bedroom · northeast wall cavity behind the master bath sink (mold-dog location)** — 1F-BED4-CAV-13

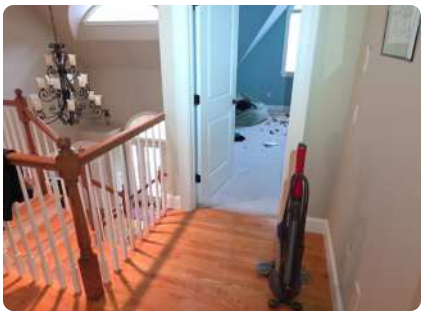
Organism	This sample	Outdoors	Comparison
Aspergillus/Penicillium	67	80	At or below outdoors
Ascospores	67	0	Not in outdoor sample
Basidiospores	200	2,307	At or below outdoors

No water-damage indicator molds. The lab rated this sample similar to the outdoor control.



2F Hallway

Humidity 41% Carbon dioxide 1,076 ppm; VOCs about 2.9× **No defects found**



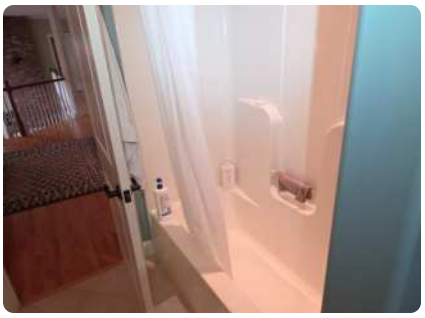


2F Hall Bathroom

Humidity 42% Carbon dioxide 1,072 ppm; VOCs about 2.9× **No defects found**

Cavities behind the shower and toilet were similar to outdoors.





LABORATORY RESULTS FOR THIS ROOM

CAVITY AIR SAMPLE · SPORES/M³ **Hall Bathroom · wall cavity behind the shower** 2F-BATH3-CAV-17

Organism	This sample	Outdoors	Comparison
Ascospores	133	0	Not in outdoor sample

No water-damage indicator molds. The lab rated this sample similar to the outdoor control.



CAVITY AIR SAMPLE · SPORES/M³ **Hall Bathroom · wall cavity behind the toilet** 2F-BATH3-CAV-18

Organism	This sample	Outdoors	Comparison
No mold spores detected	0	—	None found

The lab rated this sample similar to the outdoor control.



Dust and debris counts inside wall and ceiling cavities were higher than outdoor air, which is normal for a closed cavity and is not a sign of mold growth. Full results are in the Sporecyte report.

6.1 Samples offered but declined

No samples were declined. Every sample we recommended during the inspection was collected and analyzed.

7 Organisms Identified

Mycotoxins are listed because some species or strains within these organisms can produce them, not because they were measured here. Identifying an organism does not establish that its mycotoxins are present in this home.

7.1 Stachybotrys

- Stachybotrys needs cellulose materials that stay wet for an extended period. It is a water-damage indicator, and finding it indoors warrants investigation.

WHERE WE FOUND IT

3.1 1F Master Bathroom · both wall cavities (shower and tub)

3.3 Basement · cold vented room south wall (surface, background)

Associated mycotoxins: satratoxins G, H, roridin E, verrucarin J

7.2 Chaetomium

- Chaetomium grows on wet cellulose materials, such as wood, drywall paper and cardboard, that have stayed damp. It is a water-damage indicator.

WHERE WE FOUND IT

3.5 Upper-level HVAC · blower wheel (growth)

3.1 1F Master Bathroom · both wall cavities

3.2 Attic · upper and lower attic air

3.4 Lower-level HVAC · return air

3.7 2F Yellow Bedroom · north wall cavity

Associated mycotoxins: chaetoglobosins A, C, F

7.3 Ulocladium

- Ulocladium needs very wet conditions and often grows where water collects or condenses on a surface. It is a water-damage indicator.

WHERE WE FOUND IT

3.2 Attic · below the future patio door opening (growth) and upper attic air

3.1 1F Master Bathroom · both wall cavities

3.5 Upper-level HVAC · blower wheel (background)

7.4 Aspergillus/Penicillium

- These closely related molds are reported together by the laboratory. They grow quickly on damp building materials and dust. Spore chains (strings) in an air sample usually mean growth is close by.

WHERE WE FOUND IT

- 3.2 Attic · below the future patio door opening (growth); lower attic air, with chains
- 3.1 1F Master Bathroom · both wall cavities, about 19 to 29 times outdoors
- 3.6 2F Blue Bedroom · left outlet cavity, with chains
- 3.3 Basement Main · room air, with chains
- 3.4 Lower-level HVAC · return air, with chains

Associated mycotoxins: aflatoxins B1, B2, G1, G2, ochratoxin A, sterigmatocystin, gliotoxin, citrinin, patulin, mycophenolic acid

7.5 Cladosporium

- Cladosporium is common outdoors. When the laboratory reports it as growth on a material, it means an established colony on that surface, so these are the locations that matter.

WHERE WE FOUND IT

- 3.2 Attic · all three surfaces sampled (growth)
- 3.3 Basement · efflorescence on the northwest wall (growth)
- 3.4 Lower-level HVAC · blower (growth)
- 3.5 Upper-level HVAC · blower wheel and evaporator coil (growth)

7.6 Hyphal Growth

- Hyphae are the thread-like structures a mold grows as it spreads across a material. When the laboratory reports them as growth, they confirm an active colony on that surface.

WHERE WE FOUND IT

- 3.8 1F Mudroom Bathroom · vanity (growth)
- 3.2 Attic · patio door opening and roof deck rafter (growth)
- 3.3 Basement · efflorescence and cold vented room wall (growth)
- 3.5 Upper-level HVAC · blower wheel (growth)
- 3.1 1F Master Bathroom · both wall cavities, very high in the air
- 3.4 Lower-level HVAC · return air, elevated
- 3.7 2F Yellow Bedroom · window cavity, elevated

7.7 Basidiospores reported as growth

- Basidiospores are a broad group that includes wood-decay fungi and mushrooms. They are common outdoors, but where the laboratory reported them as growth we treat them as part of the source.

WHERE WE FOUND IT

- 3.2 Attic · below the future patio door opening
- 3.3 Basement · efflorescence and cold vented room wall

3.4 Lower-level HVAC · blower

3.5 Upper-level HVAC · blower wheel

7.8 Outdoor-associated and other background findings

Alternaria, Ascospores, Botrytis, Curvularia, Epicoccum, Myrothecium, Pestalotiopsis, Polythrincium, Torula, rust spores, Mitospores and the Smut/Periconia/Myxomycete group were found at low levels in a few samples. Most of these organisms are common outdoors. The remediation, cleaning and verification steps in this plan address them along with the main sources.

8 Remediation Plan

PART A Materials & Products

STRUCTURAL REMEDIATION PRODUCTS

- Bioesque OxyPro
- SERUM 1000
- Equivalent professional hydrogen peroxide-based remediation oxidizers

STRUCTURAL CLEANING EQUIPMENT

- Commercial HEPA vacuum systems
- HEPA-assisted sanding equipment
- HEPA-assisted rotary abrasion equipment
- HEPA-assisted drill-mounted abrasive equipment
- HEPA dust extraction equipment

HVAC REMEDIATION PRODUCTS & EQUIPMENT (IF APPLICABLE)

- HVAC-approved cleaning products
- HVAC-approved evaporator coil cleaning products
- NADCA-compliant source removal equipment
- HVAC-approved filtration products
- Replacement HVAC filters meeting manufacturer specifications

SMALL PARTICLE CLEANING PRODUCTS

- Micro Balance EC3 Mold Solution
- Superstratum Building Cleaner
- Branch Basics Concentrate diluted according to manufacturer instructions

ENVIRONMENTAL CONTROL EQUIPMENT

- Commercial HEPA air scrubbers
- Commercial dehumidifiers
- HEPA air purifiers
- Air movers where appropriate
- Hygrometers
- Thermometers
- Moisture meters

PERSONAL PROTECTIVE EQUIPMENT

- N95 respirators
- Half-face respirators with P100 filters
- Full-face respirators with P100 filters
- Disposable protective suits
- Protective gloves
- Eye protection

OPTIONAL MINERAL FINISH SYSTEMS (POST-PRV ONLY & IF RECOMMENDED)

- Romabio MicroGrip Primer
- KEIM Mineral Silicate Systems

STEP 1

Containment & Engineering Controls

CONTAINMENT

- Establish full containment around each active remediation assembly using sealed 6-mil polyethylene containment with critical barriers and controlled access points.
- Utilize ZipWall® or equivalent temporary containment systems where remediation is limited to a portion of an occupied room.
- Expand or modify containment whenever additional contaminated assemblies or concealed reservoirs are identified.
- Protect unaffected rooms, flooring, furnishings, electronics, textiles, and contents from dust and cross-contamination throughout the project.
- Establish dedicated equipment staging areas outside occupied living spaces whenever practical.
- Maintain containment until structural remediation, structural cleaning, drying verification, and Phase 1 Small Particle Cleaning have been completed.

NEGATIVE PRESSURE & AIR MANAGEMENT

- Establish and continuously maintain negative pressure within containment before demolition begins.
- Operate commercial HEPA air scrubbers continuously throughout demolition, material removal, structural cleaning, HVAC remediation, and debris handling.
- Exhaust filtered air to the exterior with no exceptions while preventing re-entry into the structure.
- Verify containment integrity and negative pressure continuously, correcting any deficiencies before remediation resumes.

HVAC ISOLATION

- Seal all HVAC supply registers, return registers, and exposed duct openings serving remediation areas.
- Isolate the HVAC system from remediation activities to prevent contamination redistribution.
- Do not restore HVAC operation until HVAC remediation has been completed and system cleanliness has been verified.

ENVIRONMENTAL CONTROLS

- Maintain stable indoor environmental conditions throughout remediation to minimize secondary moisture accumulation and microbial amplification.
- Maintain indoor relative humidity at 45% or below and indoor temperature generally between 68°F and 75°F whenever practical using commercial dehumidifiers, temporary heating or cooling equipment, and air movers as necessary.
- Monitor and document indoor temperature and relative humidity daily using calibrated instruments, adjusting equipment as needed to prevent condensation on exposed framing, sheathing, HVAC components, and other structural materials.
- Continue environmental controls and monitoring throughout demolition, structural cleaning, HVAC remediation, drying, and Phase 1 Small Particle Cleaning.

DEBRIS HANDLING

- Remove contaminated materials through protected containment pathways whenever direct exterior removal is not available.
- Bag or wrap contaminated materials before transport according to material size.
- Maintain clean debris transport pathways, avoid staging contaminated materials within occupied portions of the residence, and remove demolition debris regularly to minimize particulate loading.

WORKER DECONTAMINATION

- Establish separate clean and contaminated work zones whenever practical.
- HEPA vacuum equipment, clean tools, and remove or decontaminate PPE before leaving containment or relocating between remediation zones.
- Maintain separation between contaminated and clean equipment throughout the project.

STEP 2 Worker Safety & Personal Protective Equipment

- Utilize respiratory protection appropriate for the scope of work, including N95, half-face P100, or full-face P100 respirators.
- Wear disposable protective suits, protective gloves, and eye protection during demolition, structural cleaning, debris handling, HVAC remediation, and all other remediation activities.
- Restrict remediation areas to authorized personnel only.
- Follow all manufacturer safety requirements, Safety Data Sheets (SDS), and applicable OSHA regulations for remediation products, equipment, and work practices.
- Utilize safe lifting techniques and proper material handling procedures throughout the project.
- Verify electrical safety before opening concealed assemblies or operating powered equipment.
- Confirm plumbing systems have been isolated before demolition adjacent to active plumbing systems.
- Verify HVAC equipment has been safely de-energized before beginning HVAC remediation.
- Immediately identify, correct, and document any unsafe working conditions before continuing remediation activities.

STEP 3

Structural Remediation

ASSEMBLY 1

RED ZONE · SECTION 3.1 OF THIS REPORT

1F Master Bathroom Shower and Tub Wall

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Plumber:** Check the shower valve, tub filler, supply lines and drain while the wall is open. Repair any leak.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- North wall right of the shower entrance (drywall gap that was sampled)
- Shower walls: tile, grout, backer and waterproofing below and around the faucet
- Tub surround, tub deck, caulk line and the cavity behind it
- Drywall, insulation, studs, plates and blocking in these cavities
- Wall shared with the master closet
- Subfloor and framing where the wall and tub meet the floor

WHAT WE FOUND

- Grout below the faucet is badly eroded. Tub caulk is separating. The mold dog alerted at the tub.
- Water staining on the north wall right of the shower entrance.
- **Mold types the lab confirmed here: Chaetomium**, **Stachybotrys**, **Ulocladium** (water-damage molds); Aspergillus/Penicillium.

FIX THE WATER SOURCE FIRST

- Stop using this shower and tub until it is rebuilt.

REMOVE

- Open at least 4 ft wide, centered on each sample location.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove tile, grout and backer as needed to reach the cavity behind the shower and at the tub.
- Remove the drywall, insulation and tile backer in the affected cavities.
- Check the closet side of the shared wall. If growth or water damage continues, open that cavity too.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.

2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Plumber confirms the shower valve, tub filler, supply lines and drain have no leaks.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

AFTER PRV PASSES: REBUILD

- **Tile and waterproofing installer:** Rebuild the shower and tub surround with new tile backer, waterproofing, tile, grout and caulk.

Do this only after PureHealth clears the area. Work done earlier would be removed during remediation.

ASSEMBLY 2

RED ZONE · SECTION 3.2 OF THIS REPORT

Attic Framing, Future Patio Door Opening and Roof Deck

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Roofer:** Check the roof covering and the chimney flashing and counterflashing. Fix any water entry.
- **Building envelope specialist:** Make the future patio door opening weathertight.
- **Ventilation contractor:** Check that the powered vent is not working against the ridge and soffit vents. Correct it.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- Lower part of the future patio door opening: framing, sheathing, subfloor
- Lower wall framing on the northwest and southeast sides
- East roof deck and rafters near the sixth rafter from the chimney
- Chimney penetration and flashing
- Blown-in cellulose in these areas
- Ridge, soffit and powered vents

WHAT WE FOUND

- Old water staining at the bottom of the future patio door opening (dry during the inspection).
- Water staining on the lower wall framing, northwest and southeast.
- **Mold types the lab confirmed here: Chaetomium**, **Ulocladium** (water-damage molds); Aspergillus/Penicillium, Cladosporium, Basidiospores.

REMOVE

- Remove the cellulose in these areas to expose the framing, sheathing and opening.
- Keep going into the next rafter bays wherever staining, growth or damage continues.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.

4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Roof, chimney flashing and patio door opening are weathertight.
- [ ] Attic ventilation corrected.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 3

RED ZONE · SECTION 3.3 OF THIS REPORT

Basement Main Foundation Walls, Sump and Cold Vented Room

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Foundation and drainage contractor:** Fix grading, gutters and downspouts so water drains away. Check the foundation walls for seepage.
- **Plumber or waterproofing contractor:** Fit a sealed, gasketed sump lid. Where water collects, install a working sump pump that discharges away from the foundation.
- **HVAC contractor:** Install dedicated basement dehumidification to hold humidity near 45% and below 50%.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- Lower part of every perimeter foundation wall (efflorescence)
- Lower northwest wall right of the water softener
- Cold vented room: south wall and anything touching it
- Open sump and surround
- PVC pipe near the water system with suspected growth
- Stored porous items against affected walls

WHAT WE FOUND

- Efflorescence (white mineral deposits) along the bottom of every perimeter wall.
- Open sump, no pump, suspected growth inside. Suspected growth on PVC pipe near the water system (not sampled).
- **Mold types the lab confirmed here:** Aspergillus/Penicillium, Cladosporium, Basidiospores.

REMOVE

- Replace the PVC section near the water system that shows growth.
- Remove stored porous items, debris and porous finishes touching the affected walls.
- Non-load-bearing framing or shelving touching the walls: replacing it is a reasonable alternative to cleaning it.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

BEFORE CLEANING

- Clean the efflorescence off the foundation walls by HEPA-assisted brushing or abrasive methods before the oxidizer.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Drainage, sump lid (and pump if needed) and dehumidifier installed. Basement humidity below 50%.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 4

RED ZONE · SECTION 3.4 OF THIS REPORT

HVAC System – Lower Level

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **HVAC contractor:** Find what is rusting the lower return duct (condensation, leaks or water entry) and fix it. Seal filter bypass, missing panels, failed gaskets and return leaks. Check condensate drain, trap and overflow protection, and equipment sizing and airflow.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- Return path, plenum, filter housing, cabinet, blower, evaporator coil and cabinet, drain pan, condensate line and trap
- Supply plenum, connected supply and return ducts, boots, registers and grilles
- Lower return duct with rust
- Flex duct, duct board and lined duct on this system

WHAT WE FOUND

- Rust on the lower return duct.
- Evaporator coil: no growth. Supply plenum: background Basidiospores only.
- **Mold types the lab confirmed here: Chaetomium** (water-damage mold); Aspergillus/Penicillium, Cladosporium, Basidiospores.

REMOVE

- Rusted lower return duct: evaluate for replacement.
- Contaminated, wet-damaged, deteriorated or unreachable flex duct: **remove and replace**. Never clean flex duct in place.
- Duct board and lined duct: remove and replace if contaminated, damaged, eroded, or if you cannot reach and check all of it.
- Porous insulation inside the cabinet: remove and replace if contaminated, damaged or delaminated.
- Bag or wrap removed duct and insulation before carrying it through the house.
- If contamination is widespread or cleaning cannot be verified, get a repair-versus-replace evaluation.

CLEAN THE SYSTEM licensed HVAC contractor, in this order

1. Shut off and lock out power. Open and take apart the system as far as needed to reach every surface.
2. Set up containment and HEPA debris capture at the equipment.
3. Pull the blower when practical. Clean the wheel, blades, housing, motor exterior and compartment: HEPA vacuum, nylon brushes, microfiber, controlled compressed air, contact vacuuming.
4. Clean the cabinet, coil cabinet, filter rack, drain pan and transitions by hand (non-porous surfaces).
5. Clean the evaporator coil with a manufacturer-approved coil cleaner.
6. Clean the return path, plenums, sheet-metal ducts, boots, registers and grilles with methods that suit the duct type.

7. Clean collars, boots and transitions before installing new flex duct. Size, support, insulate and seal the new duct.
8. Reassemble and seal everything to manufacturer requirements.

Do not use sanding, abrasive methods or structural oxidizers in HVAC equipment or ducts. **Do not** soak motors, bearings, controls or insulation. **Do not** fog, mist, ozone, coat or encapsulate in place of removal. HVAC-approved treatments only after all growth is physically removed.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Rusted return duct replaced or restored. All cabinet, return and supply leaks sealed.
- [ ] System is clean and dry, with no loose debris or cleaning residue.
- [ ] HVAC tech confirms: blower installed and turning the right way; runs without odd noise or vibration; filter fits with no bypass; normal supply and return airflow and static pressure; condensate drains with overflow protection.
- [ ] Panels and components left reachable for PRV.

ASSEMBLY 5

RED ZONE · SECTION 3.5 OF THIS REPORT

HVAC System – Upper Level

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **HVAC contractor:** Seal filter bypass, panels, gaskets and return leaks. Check the condensate drain, trap and overflow protection.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- Return path, plenum, filter housing, cabinet, blower, evaporator coil and cabinet, drain pan, condensate line and trap
- Supply plenum, connected supply and return ducts, boots, registers and grilles
- Flex duct, duct board and lined duct on this system

WHAT WE FOUND

- Refrigerant (coolant) line not connected at the evaporator coil. The homeowner confirmed this unit is used for heating only.
- **Mold types the lab confirmed here: Chaetomium** (water-damage mold); Cladosporium, Basidiospores.

REMOVE

- Contaminated, wet-damaged, deteriorated or unreachable flex duct: **remove and replace**. Never clean flex duct in place.
- Duct board and lined duct: remove and replace if contaminated, damaged, eroded, or if you cannot reach and check all of it.
- Porous insulation inside the cabinet: remove and replace if contaminated, damaged or delaminated.
- Bag or wrap removed duct and insulation before carrying it through the house.
- If contamination is widespread or cleaning cannot be verified, get a repair-versus-replace evaluation.

CLEAN THE SYSTEM

licensed HVAC contractor, in this order

1. Shut off and lock out power. Open and take apart the system as far as needed to reach every surface.
2. Set up containment and HEPA debris capture at the equipment.
3. Pull the blower when practical. Clean the wheel, blades, housing, motor exterior and compartment: HEPA vacuum, nylon brushes, microfiber, controlled compressed air, contact vacuuming.
4. Clean the cabinet, coil cabinet, filter rack, drain pan and transitions by hand (non-porous surfaces).
5. Clean the evaporator coil with a manufacturer-approved coil cleaner.
6. Clean the return path, plenums, sheet-metal ducts, boots, registers and grilles with methods that suit the duct type.
7. Clean collars, boots and transitions before installing new flex duct. Size, support, insulate and seal the new duct.
8. Reassemble and seal everything to manufacturer requirements.

Do not use sanding, abrasive methods or structural oxidizers in HVAC equipment or ducts. **Do not** soak motors, bearings, controls or insulation. **Do not** fog, mist, ozone, coat or encapsulate in place of removal. HVAC-approved treatments only after all growth is physically removed.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] System is clean and dry, with no loose debris or cleaning residue.
- [ ] HVAC tech confirms: blower installed and turning the right way; runs without odd noise or vibration; filter fits with no bypass; normal supply and return airflow and static pressure; condensate drains with overflow protection.
- [ ] Panels and components left reachable for PRV.

ASSEMBLY 6

RED ZONE · SECTION 3.6 OF THIS REPORT

2F Blue Bedroom North and Northwest Wall

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Building envelope specialist:** Fix the open siding-to-trim joints and window flashing on this wall while the inside is open.
- **Electrician:** Check the stained outlets and wiring in this wall.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- North and northwest wall, window wall and stained outlets
- Drywall, insulation, studs, plates and blocking in these cavities
- Window rough opening, sill and interior trim
- Exterior sheathing exposed by demolition
- Electrical boxes and penetrations

WHAT WE FOUND

- Water staining across almost the whole north and northwest wall, and out of the outlets.
- Siding pulling away from window trim around most of the home.
- **Mold types the lab confirmed here:** Aspergillus/Penicillium.

REMOVE

- Open at least 4 ft wide, centered on each sample location.
- Exterior wall: open floor to ceiling, and at least 2 ft past the sample location on each side.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove the drywall and insulation in the affected cavities.
- Keep going into the next stud bays and the window rough opening wherever staining, growth or damage continues.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.

4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Siding-to-trim joints and window flashing fixed. Electrician has checked the outlets.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 7

RED ZONE · SECTION 3.7 OF THIS REPORT

2F Yellow Bedroom North Wall

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Building envelope specialist:** Fix the open siding-to-trim joints and window flashing on this wall while the inside is open.
- **Electrician:** Check the stained outlets and wiring in this wall.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- North wall: left and right stained areas and the window wall outlets
- Drywall, insulation, studs, plates and blocking in these cavities
- Window rough opening, sill and interior trim
- Exterior sheathing exposed by demolition
- Electrical boxes and penetrations

WHAT WE FOUND

- Water staining at several places along the north wall, left and right, and out of the outlets.
- **Mold types the lab confirmed here: Chaetomium** (water-damage mold).

REMOVE

- Open at least 4 ft wide, centered on each sample location.
- Exterior wall: open floor to ceiling, and at least 2 ft past the sample location on each side.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove the drywall and insulation in the affected cavities.
- Keep going into the next stud bays and the window rough opening wherever staining, growth or damage continues.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.

4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Siding-to-trim joints and window flashing fixed. Electrician has checked the outlets.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 8

RED ZONE · SECTION 3.8 OF THIS REPORT

1F Mudroom Bathroom Vanity

SPECIALIST WORK: SCHEDULE WHILE THIS AREA IS OPEN

- **Plumber:** Check the P-trap, drain and supply connections. Make them tight and dry.

Book them so they can work while the area is opened up, before anything is closed.

SCOPE

- Vanity sink base, lowest drawer, drawer box and cabinet floor
- Sink drain, P-trap and supply connections
- Wall and floor behind and under the vanity

WHAT WE FOUND

- Staining in the lowest drawer under the sink, from a past P-trap leak.

REMOVE

- **Removing and replacing the whole vanity is a reasonable decision**, and is often more practical than repairing it.
- If the vanity stays: remove the drawer box, cabinet floor and any other affected cabinet material.
- Check the wall and floor behind and under the vanity. Keep removing wherever staining, growth or damage continues.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:
   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.
5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

READY FOR PUREHEALTH PRV: CHECK EVERY BOX

- [ ] Plumber confirms the P-trap and connections are dry.
- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

Orange Zones: Correct and Monitor

We did not find significant elevations in these areas, so they are not part of the required remediation. Each one needs the recommended correction and monitoring. A remediation protocol is included with each as an option, in case the correction or further findings call for it.

ASSEMBLY 9

ORANGE ZONE · OPTIONAL PROTOCOL · SECTION 4.1 OF THIS REPORT

1F Dining Room Ceiling Beside the Fireplace and East Window

RECOMMENDED CORRECTION

- **Building envelope specialist:** Check the chimney flashing, the roof above and the ceiling beside the fireplace. Confirm whether water is getting in and where, and fix it.
- **Plumber:** Check any plumbing above this ceiling and repair it.
- **Window contractor:** Reseal the east window trim and check its flashing.

WHAT WE FOUND

- Suspected leak: cool spots on the thermal image in the ceiling right of the fireplace, with an **18% moisture reading** at the same spot. Source not confirmed.
- The mold dog alerted at the left side of the east window.

MONITOR

- After the correction, recheck moisture at the stained or suspect area, and again after the next heavy rain.
- Watch for new or spreading staining, bubbling paint, soft material or a musty odor.
- If any of these appear, or the correction uncovers hidden damage, call PureHealth. The optional protocol below may then apply.
- We recheck this area at the Annual Home Health Review.

OPTIONAL REMEDIATION PROTOCOL

Use this only if the correction or further findings show hidden damage or growth.

SCOPE IF USED

- Ceiling finish, cavity and framing right of the fireplace
- Chimney flashing and roof above this ceiling
- East window trim, sealant and the wall cavity beside it

REMOVE

- Start only after the correction is complete.
- Open at least 4 ft wide, centered on each sample location.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove stained or water-damaged drywall, insulation and trim. Check the cavity for hidden damage.

- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.
5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

IF THIS PROTOCOL IS USED: READY FOR PUREHEALTH PRV

- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 10

ORANGE ZONE · OPTIONAL PROTOCOL · SECTION 4.2 OF THIS REPORT

1F Living Room East Wall Corner and Patio Door

RECOMMENDED CORRECTION

- **Building envelope specialist:** Check the roof edge, gutter and exterior wall above the east corner. Find where water gets in and fix it.
- **Door contractor:** Repair the patio door threshold, sill pan and sealant so water cannot reach the floor.

WHAT WE FOUND

- Water staining at the top corner of the east wall (suspected leak point).
- Staining and water wear at the patio door threshold.

MONITOR

- After the correction, recheck moisture at the stained or suspect area, and again after the next heavy rain.
- Watch for new or spreading staining, bubbling paint, soft material or a musty odor.
- If any of these appear, or the correction uncovers hidden damage, call PureHealth. The optional protocol below may then apply.
- We recheck this area at the Annual Home Health Review.

OPTIONAL REMEDIATION PROTOCOL

Use this only if the correction or further findings show hidden damage or growth.

SCOPE IF USED

- East wall top corner: finish, cavity and framing
- Roof edge, gutter and exterior wall above the corner
- Patio door threshold, sill pan, sealant and nearby flooring

REMOVE

- Start only after the correction is complete.
- Open at least 4 ft wide, centered on each sample location.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove stained or water-damaged drywall, insulation and trim. Check the cavity for hidden damage.
- Lift the flooring at the threshold where staining or water wear continues, and check the subfloor.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

IF THIS PROTOCOL IS USED: READY FOR PUREHEALTH PRV

- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 11

ORANGE ZONE · OPTIONAL PROTOCOL · SECTION 4.3 OF THIS REPORT

1F Foyer North Wall and Window

RECOMMENDED CORRECTION

- **Building envelope specialist:** The window above this wall appears to be leaking. Check the window, its flashing and sealant, and the wall around it. Find where water gets in and fix it.

WHAT WE FOUND

- Two water stains run down the north wall, one above each closet, below a window that appears to be leaking.

MONITOR

- After the correction, recheck moisture at the stained or suspect area, and again after the next heavy rain.
- Watch for new or spreading staining, bubbling paint, soft material or a musty odor.
- If any of these appear, or the correction uncovers hidden damage, call PureHealth. The optional protocol below may then apply.
- We recheck this area at the Annual Home Health Review.

OPTIONAL REMEDIATION PROTOCOL

Use this only if the correction or further findings show hidden damage or growth.

SCOPE IF USED

- North wall finish and cavities above both closets
- The window above this wall: flashing and sealant
- Exterior wall around the window

REMOVE

- Start only after the correction is complete.
- Open at least 4 ft wide, centered on each sample location.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove stained or water-damaged drywall, insulation and trim. Check the cavity for hidden damage.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.
2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.

3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

IF THIS PROTOCOL IS USED: READY FOR PUREHEALTH PRV

- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

ASSEMBLY 12

ORANGE ZONE · OPTIONAL PROTOCOL · SECTION 4.4 OF THIS REPORT

1F Library Bay Window and West Bedroom West Wall

RECOMMENDED CORRECTION

- **Building envelope specialist:** Check the Library bay window, and the exterior wall and roof edge above the West Bedroom west wall. Find where water gets in and fix it. Reseal the exterior trim and check the window flashing.

WHAT WE FOUND

- The mold dog alerted below the Library bay window.
- Water staining at the top west corner of the West Bedroom, where the crown molding meets the wall.

MONITOR

- After the correction, recheck moisture at the stained or suspect area, and again after the next heavy rain.
- Watch for new or spreading staining, bubbling paint, soft material or a musty odor.
- If any of these appear, or the correction uncovers hidden damage, call PureHealth. The optional protocol below may then apply.
- We recheck this area at the Annual Home Health Review.

OPTIONAL REMEDIATION PROTOCOL

Use this only if the correction or further findings show hidden damage or growth.

SCOPE IF USED

- Library west bay window: trim, sealant and wall cavity
- West Bedroom west wall top corner: finish, crown molding, cavity and framing
- Exterior wall, trim and roof edge above these walls

REMOVE

- Start only after the correction is complete.
- Open at least 4 ft wide, centered on each sample location.
- The opening is where you start, not where you stop. Keep removing until you reach clean, dry, sound material.
- Remove stained or water-damaged drywall, insulation and trim. Check the cavity for hidden damage.
- Rotted, soft or deteriorated framing, sheathing or subfloor: evaluate for removal and replacement, not cleaning in place. Non-load-bearing studs can simply be replaced.
- Remove any hidden growth or water damage you find along the way.
- Bag or wrap removed material inside containment before carrying it out.

CLEAN THE STRUCTURE in this order

1. HEPA vacuum every exposed surface.

2. Remove all visible growth by HEPA-assisted sanding, abrasive blasting, or another method suited to the material.
3. HEPA vacuum again.
4. **Apply an oxidizer.** Fully wet every remediated surface with one of the following:

   - **Bioesque OxyPro:** keep the surface wet for **5 to 15 minutes**. Reapply anywhere it is still bubbling.
   - **SERUM 1000:** use only when the wood reads **15% moisture or less**. Leave it until dry to the touch, **about 1 hour**.
   - **An approved equivalent:** follow the dwell time on its label.

5. **Wait out the full dwell time.** Do not wipe, vacuum, sand or cover the surface until it is done.
6. When dry, HEPA vacuum one last time.

IF THIS PROTOCOL IS USED: READY FOR PUREHEALTH PRV

- [ ] No visible growth, dust or debris on any exposed surface.
- [ ] Wood reads **below 15% moisture**. Write the readings down. Any reading at 15% or higher: find and fix the cause before calling for PRV.
- [ ] Phase 1 Small Particle Cleaning is done in the work area.
- [ ] **Leave it all open.** No insulation, drywall or close-up until PureHealth clears it (PRV), unless we have approved it in writing.

STEP 4

Phase 1 Small Particle Cleaning (Remediation Work Area)

CLEANING SCOPE

- Complete Phase 1 Small Particle Cleaning within all remediated work areas immediately following structural remediation.
- Limit cleaning to the remediation workspace and immediately adjacent affected areas unless otherwise specified.
- Complete all cleaning prior to PureHealth Post-Remediation Verification.

SMALL PARTICLE CLEANING PROCEDURE

- HEPA vacuum all exposed horizontal and vertical structural surfaces, including framing, sheathing, subfloors, ceilings, wall cavities, ledges, trim, windows, doors, and other accessible building components within the remediation workspace.
- Damp wipe or detail clean all remaining cleanable structural surfaces, permanently installed fixtures, finish materials approved to remain, and other accessible building components using approved small particle cleaning products.
- Clean HVAC registers, diffusers, electrical covers, lighting components, plumbing fixtures, cabinetry, shelving, countertops, appliances, and other permanently installed components located within the remediation workspace whenever they remain in place.
- Clean contents protected within containment that are intended to remain in the remediation workspace, using cleaning methods appropriate for the material and level of contamination.
- Replace cleaning materials as necessary throughout the cleaning process to prevent cross-contamination.
- Repeat HEPA vacuuming and detail cleaning as necessary until no visible dust, debris, or remediation residue remains.

CLEANING VERIFICATION

- Verify the remediation workspace is visibly clean and free of dust, debris, and construction residue.
- Verify no visible particulate accumulation remains on structural surfaces, permanently installed fixtures, remaining contents, or accessible building components.
- Leave the remediation workspace ready for PureHealth Post-Remediation Verification.

STEP 5

PureHealth Post-Remediation Verification (PRV)

PRV READINESS REQUIREMENTS

- Complete all structural remediation activities identified within this remediation plan.
- Complete Phase 1 Small Particle Cleaning throughout all remediation work areas.
- Remove all remediation equipment, demolition debris, waste materials, and unnecessary supplies from inspection areas.
- Leave all remediated structural assemblies fully exposed for visual inspection unless otherwise authorized by PureHealth.
- Restore safe access to all remediation areas requiring inspection.

- Maintain environmental conditions established during remediation until PureHealth Post-Remediation Verification (PRV) has been completed.

VERIFICATION CRITERIA

- The following conditions are expected during PureHealth Post-Remediation Verification (PRV). PureHealth may utilize one or more verification methods as appropriate for the project scope.
- Remediated assemblies shall be visibly clean, dry, and free of dust, debris, visible microbial growth, and other conditions indicating incomplete remediation.
- Surface sampling shall demonstrate no active fungal growth and no background water-damage indicator molds on remediated surfaces. Light background levels of common outdoor environmental molds may be acceptable when consistent with normal environmental conditions and professional interpretation.
- Indoor air sampling shall demonstrate no detectable water-damage indicator molds. Aspergillus/Penicillium and common allergenic outdoor molds shall remain below the established outdoor baseline and, whenever practical, be non-detectable.
- Remediated structural materials shall measure 15% moisture content or less, or be consistent with the acceptable dry standard for the specific building material and surrounding environment.
- Relative humidity within remediated areas shall remain below 50%, with stable environmental conditions appropriate for normal occupancy.

PRV OUTCOMES

Successful Verification

- Reconstruction may begin following successful PureHealth Post-Remediation Verification (PRV).
- Proceed to Step 6 – Environmental Stability & Phase 2 Whole-Home Small Particle Cleaning following reconstruction.

Additional Remediation Required

- Any deficiencies identified during PureHealth Post-Remediation Verification (PRV) shall be corrected prior to reconstruction.
- Repeat remediation and localized Phase 1 Small Particle Cleaning within affected areas as necessary.
- Schedule a repeat PureHealth Post-Remediation Verification (PRV) following completion of corrective work.

STEP 6 Environmental Stabilization & Phase 2 Whole-Home Small Particle Cleaning

ENVIRONMENTAL STABILIZATION

- Following successful PureHealth Post-Remediation Verification (PRV) and completion of reconstruction, restore the residence to stable environmental operating conditions.
- Restore HVAC operation after confirming all remediation activities have been completed and all HVAC components are clean and ready for service.
- Install new HVAC filters meeting manufacturer specifications immediately prior to returning the HVAC system to normal operation.

- Maintain indoor relative humidity at approximately 45%, remaining below 50% to reduce the potential for future microbial amplification.
- Maintain stable indoor temperatures appropriate for normal occupancy while minimizing condensation potential.
- Operate commercial or residential dehumidification equipment as necessary to maintain target humidity levels.
- Recommend appropriately sized HEPA air purifiers throughout occupied living spaces to continuously reduce airborne particulate matter and improve indoor air quality.
- Consider photocatalytic oxidation (PCO) air purification systems as a supplemental air treatment technology when appropriate for the occupants and when tolerated. PCO systems are intended to supplement—not replace—source control, HEPA filtration, ventilation, and humidity management.
- Recommend routine cleaning using a sealed HEPA vacuum system to effectively capture fine particulate matter while minimizing particle redistribution into the indoor environment.
- Replace HVAC filters according to manufacturer recommendations and maintain routine HVAC service intervals.
- Promptly correct any future plumbing leaks, roof leaks, condensation issues, elevated humidity, or other moisture sources to reduce the potential for future microbial growth.

PHASE 2 WHOLE-HOME SMALL PARTICLE CLEANING

- Following successful PureHealth Post-Remediation Verification (PRV) and completion of reconstruction, perform Phase 2 Whole-Home Small Particle Cleaning throughout the residence.
- HEPA vacuum and detail clean all accessible horizontal and vertical surfaces throughout the home, including floors, walls, ceilings, trim, windows, doors, shelving, cabinetry, lighting, furnishings, and other accessible building components.
- Clean HVAC supply registers, return registers, diffusers, ceiling fans, light fixtures, appliances, and other dust-collecting surfaces throughout the residence.
- Clean furnishings, contents, and personal belongings using cleaning methods appropriate for each material.
- Replace cleaning materials as necessary throughout the cleaning process to prevent cross-contamination.
- Repeat HEPA vacuuming and detail cleaning as necessary until no visible dust or residual particulate contamination remains throughout the residence.

STEP 7 Reconstruction Recommendations & Mold-Resistant Building Practices

The following recommendations are intended to reduce the potential for future moisture accumulation and microbial growth during reconstruction. Recommendations should be implemented where practical and appropriate for the building design, project scope, and budget.

WALL & CEILING ASSEMBLIES

- Consider replacing conventional paper-faced drywall in moisture-prone areas with magnesium oxide (MgO) board, fiberglass-faced gypsum board, or other mold-resistant wall systems where appropriate.
- Verify all framing and structural materials are dry prior to enclosure.
- Optional: once the wall sheathing and studs are confirmed dry, they may be coated with a breathable mineral coating system, such as Romabio MicroGrip Primer or a KEIM mineral silicate system, after successful PureHealth Post-Remediation Verification (PRV) and before insulation and drywall go in. This is for exposed sheathing and framing only, not for stained walls or finished surfaces.

- Avoid enclosing building assemblies until moisture sources have been permanently corrected.

FLOORING SYSTEMS

- Consider Luxury Vinyl Plank (LVP), tile, or other moisture-resistant flooring materials in areas at increased risk for water exposure.
- Avoid installing carpet in basements, bathrooms, laundry rooms, or other moisture-prone areas whenever practical.
- Avoid installing finished flooring directly over below-grade concrete slabs without an appropriate moisture mitigation system.

BATHROOMS & WET AREAS

- Consider one-piece fiberglass or acrylic shower and tub systems to reduce seams, grout joints, and long-term moisture intrusion risks.
- Properly waterproof all shower assemblies using manufacturer-approved waterproofing systems.
- Verify bathroom exhaust fans are properly sized, vented directly to the exterior, and operating effectively.

HVAC & MECHANICAL SYSTEMS

- Install new HVAC filters meeting manufacturer specifications following reconstruction.
- Verify condensate drain systems, drip pans, and condensate pumps are functioning properly.
- Insulate cold surfaces where condensation may occur.

BUILDING ENVELOPE

- Verify exterior grading, gutters, downspouts, flashing, roofing, windows, doors, and exterior penetrations effectively manage water away from the structure.
- Correct any deficiencies contributing to water intrusion before project completion.