



**DORCHESTER II
MANAGEMENT**

**Operations and Maintenance Plan
for Mold and Moisture Control**



1.0 INTRODUCTION

QUICK POINTS	
	Mold is naturally present outdoors and indoors.
2	Wet building materials are targets for mold growth.
3	The key to mold prevention is moisture control and timely response to water events.
4	Mold and moisture problems may lead to health effects, structural damage, and costly repairs.

Mold is naturally present outdoors and indoors. Under certain conditions, when excess moisture accumulates in buildings or on building materials, mold growth is likely to occur unless it is discovered and addressed.

Excessive humidity, plumbing leaks, condensation, flooding, and defective construction are among the potential causes of moisture problems that may lead to health effects, structural damage, and costly repairs. **The keys to mold prevention are moisture control and timely response to incidents of water intrusion or mold.**

This Operations and Maintenance Plan for Mold and Moisture Control ("the Plan") is intended to assist the Maintenance Director, Community Manager, and Maintenance Staff with the prevention, recognition, and management of mold growth and moisture control at the property. The roles and responsibilities of management, staff, and residents are outlined. The Plan provides procedures for inspecting and maintaining buildings to reduce the potential for mold growth and to manage water intrusion events and mold remediation. Essential guidelines for communication, documentation, and training are also detailed.

The Plan has been designed so you do not have to read every section. For some sections, the Quick Points at the beginning highlight important information.

Definitions

Community Manager - the property manager responsible for managing the apartment community, resident relations, and management reporting policies.

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Condensation - moisture that collects on surfaces that are cooler than the surrounding warmer, moisture-laden air. See also Excessive Moisture.

Excessive Moisture - a condition where the presence of water leads to microbial growth. As used in the Plan, the term includes water intrusion (i.e., leaks, floods, etc.) and condensation.

Microbial Growth - or Mold Growth, the obvious (by visual observation or odor) presence of mold and/or bacteria on building materials, see Mold.

Mold - molds are defined as microscopic organisms (fungi) that absorb organic material and recycle nutrients in the environment. For molds to grow and reproduce, they need a food source (any organic material - such as leaves, wood, paper, dirt, etc.) and moisture. Mold growth often appears as a spot in a variety of colors including green, gray, brown, black, or white. It frequently appears as a powdery, fuzzy, or hairlike material. Actively growing molds can produce odors described as earthy, moldy, like mildew, and/or ammonia. Molds can release spores that are lightweight and can easily become airborne and be transported by air currents.

Plan - or "the Plan", this document entitled, *Operations and Maintenance Plan for Mold and Moisture Control*.

PM - preventative maintenance program which incorporates routine inspections of the equipment as part of the Maintenance Staff periodic function.

Regional Service Manager - area supervisor designated by Columbia Residential. to fulfill certain duties as described in the Plan.

Maintenance Director - a Maintenance Director that has been designated by Columbia Residential. to fulfill certain duties as described in the Plan.

Maintenance Staff - associates and contracted vendors responsible for conducting routine service, repair, and custodial activities at a Columbia Residential. property.

Water Intrusion - or Water Intrusion Event, see Excessive Moisture.

2.0 POLICY STATEMENT

QUICK POINTS	
1	It is the policy of Property Management to control mold and moisture by implementing the Plan.
2	Preventing mold and responding to water events requires a team effort that includes residents.
3	Being prepared for water events can help control the cost of drying and clean-up.

As is commercially reasonable, it is the policy of Columbia Residential. to control excessive moisture, water intrusion, and subsequent mold growth in property buildings by implementing a comprehensive service, inspection, and response program designed to prevent, identify, and mitigate moisture conditions conducive to property damage and mold growth. Columbia Residential. shall:

- Investigate resident or staff reports of water intrusion events, visible mold growth, or general indoor air quality complaints (e.g., odors) in a timely manner.
- Conduct routine service and scheduled inspections in conjunction with the Preventative Maintenance (PM) program to identify and control moisture problems and mold growth.
- Follow procedures and utilize controls during construction, renovation, or remediation work to prevent moisture problems and mold growth.
- Effectively communicate with ownership, Maintenance Staff, and residents.
- Properly document inspections, communications, remediation, training, and other Plan activities.

Effective preventative service and response to incidents requires coordination, planning, and team effort. Being prepared for major water intrusion events can prevent escalations of costs related to repair of damaged materials and mold remediation.

3.0 ROLES AND RESPONSIBILITIES

QUICK POINTS	
1	The Maintenance Director will review and approve mold and moisture investigations, restorations, and clean-up actions.
2	The Community Manager is responsible for daily administration of the Plan at the property.
3	Maintenance Staff will conduct inspections and service requests per the procedures in the Plan.
4	Residents will report signs of mold/moisture, keep their apartments clean, and avoid activities that may cause mold growth.

The Plan relies on the leadership of Corporate and Property Management, proactive implementation by Maintenance Staff, and the cooperation of residents. All parties must clearly know their role and duties as defined in the Plan. General roles and responsibilities are outlined below.

3.1 Maintenance Director

The Maintenance Director is responsible for oversight of the Plan as administered by the Community Manager. The Maintenance Director will have the authority to commit resources needed for compliance with the Plan and will provide guidance and approval of response actions as indicated by the Plan. No modifications to the policies and procedures in the Plan may be made unless authorized by the Maintenance Director.

3.2 Community Manager

The Community Manager has the primary responsibility for administration and implementation of the Plan, including:

- Investigating resident complaints or reports of water intrusion or mold growth.
- Coordinating response actions in the event of water intrusion or mold growth and providing appropriate communications with impacted residents and/or Maintenance Staff.
- Pre-qualifying local consultants and contractors to assist in implementation of the Plan.
- Administering the Mold Lease Addendum (Appendix A) for resident sign-off.

- Maintaining documentation per the Plan. Documentation shall be retained for at least five years or as required by law, whatever period is longer.

3.3 Regional Service Manager

The Regional Service Manager is responsible for coordinating and supervising activities related to the Plan. The responsibilities include, but are not limited to, the following:

- Communicating the objectives and policies of the Plan to Maintenance Staff.
- Ensuring that contractors working in property buildings are informed of the procedures in the Plan as it may impact their work.
- Ensuring that inspections and routine service procedures are conducted per the Plan.
- Monitoring mold remediation to ensure implementation of required procedures and engineering controls and effective completion.
- Ensuring that the training requirements of the Plan are met.

3.4 Maintenance Staff

Maintenance Staff (including contracted personnel) must be capable of recognizing potential water damage and mold growth conditions and be familiar with applicable policies and reporting procedures under this Plan. Maintenance Staff shall conduct routine inspections and relevant service activities guided by the Plan and promptly report the findings to the Community Manager. Maintenance Staff, with appropriate training, may conduct minor mold remediation work as approved by the Community Manager and Regional Service Manager.

3.5 Residents

Residents shall comply with the requirements of the Mold Lease Addendum. They shall report water intrusion events such as floods, leaks, condensation, or other instances of excess moisture on building materials to the Community Manager as soon as possible. Residents shall report obvious water intrusions and unusual odors or other signs of suspected mold growth or indoor air quality concerns to the Community Manager for appropriate investigation.

Residents shall control activities that may contribute to conditions that promote mold growth. Such activities include, but are not limited to:

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- Excess watering of plants resulting in water damage to carpets underneath or mold growth in the plant soil.
- Use of room humidifiers. Columbia Residential discourages the use of humidifiers by residents. Humidifiers not properly maintained can be a source of airborne microorganisms and excess moisture levels that are conducive to promoting mold growth or can result in condensation on cool surfaces.
- Adjusting thermostats, blocking vents, or otherwise tampering with the routine operation of heating and cooling equipment in the unit such that the temperature and relative humidity may contribute to excess moisture or mold growth.
- Allowing excess standing water on floors around bathtubs, showers, sinks, countertops, and sills.
- Failing to use exhaust fans in bathrooms and kitchen.
- Overloading or obstructing sewer drains in bathrooms and the kitchen.
- Inadequate cleaning and dusting of the apartment.

4.0 COMMUNICATIONS

QUICK POINTS	
1	All questions and complaints about mold, water damage, or indoor air quality should be immediately directed to the Community Manager.
2	Prompt and thorough response to complaints will increase trust and minimize rumors and speculation by residents.
3	Residents shall report signs of mold or moisture problems immediately to property staff.

Communication about mold and moisture control prevention and response is critical to fostering good management/resident relationships, as well as supporting Maintenance Staff's response actions. The Community Manager is responsible for generating factual and timely responses to complaints. All questions and complaints regarding mold, water damage, and indoor air quality should be directed to the Community Manager.

Maintenance Staff should quickly relay such observations or complaints to the Community Manager. Efforts should be made to respond promptly and thoroughly to minimize unfounded rumors and speculation by residents.

4.1 Maintenance Director

The Maintenance Director is responsible for assuring that Plan activities are appropriately communicated to the property owner and corporate persons or groups that may be significantly impacted by mold and moisture control events.

4.2 Community Manager

The Community Manager has the primary responsibility for communicating Plan activities with the Maintenance Director, Regional Service Manager, Maintenance Staff, contractors, and residents. The Community Manager shall manage the distribution and execution of the Mold Lease Addendum that includes information for residents (see Tip Sheet on Mold, Appendix A) regarding their role and responsibilities for preventing moisture conditions and mold growth.

4.3 Maintenance Staff

Maintenance Staff must document and report the results of inspections, service requests, service activities, and remediation involving moisture

control or mold to the Community Manager. The primary means for documenting and tracking service activities will be the PM program. A sample checklist and tracking log are provided in Appendix A.

4.4 Residents

Residents shall report water intrusion events such as floods, leaks, condensation, or other instances of excess moisture to the Community Manager as soon as possible. Residents shall report unusual odors or other signs of suspected mold growth or indoor air quality concerns to the Community Manager for appropriate investigation.

5.0 TRAINING

QUICK POINTS	
	Initial training is required for all property management and Maintenance Staff.
	Attending an annual mold update meeting is also required.
	Training attendance will be documented.

All property staff with responsibilities for implementing the Plan shall be adequately trained in recognition, prevention, and basic remediation work for water intrusion and mold on building materials. Training curricula shall be consistent with the Plan and include the topics listed below. The Community Manager shall maintain a file with documentation of training completion. New hire orientation shall include appropriate awareness of the Plan and/or initial training based on the guidelines below. A CD with basic Plan training curricula shall be available in the Property CD Library for orientation training and other uses as described below. A Mold Awareness Update meeting to review the Plan requirements, attended by all property management and Maintenance Staff, shall be conducted annually and attendance shall be documented.

5.1 Community Manager

The Community Manager shall complete training that includes the following topics:

- Introduction to mold
- Health effects of mold
- Basic mold assessment and identification techniques
- Water intrusion recognition, prevention, and response
- Preventative service inspection procedures
- Service request procedures
- Emergency response
- Handling mold complaints
- Construction and renovation issues
- Drying equipment and procedures
- Mold remediation equipment and procedures
- Communication and documentation
- Resident awareness and lease issues

- Using consultants and contractors

5.2 Maintenance Staff

Service Supervisors and Staff that will be responding to water intrusion events and mold remediation shall complete CD-based training that includes the following topics:

- Introduction to mold
- Health effects of mold
- Basic mold assessment and identification techniques
- Water intrusion recognition, prevention, and response
- Preventative service inspection procedures
- Service request procedures
- Emergency response
- Construction and renovation issues
- Drying equipment and procedures
- Mold remediation equipment and procedures
- Communication and documentation

5.3 Mold Awareness Update Meeting

Property management and Maintenance Staff shall annually attend an approximately two-hour Mold Awareness Update meeting conducted by the Community Manager and Regional Service Manager that includes a review and update of the following Plan information:

- Plan roles and responsibilities
- Communication protocol and procedures
- Service Request procedures
- Response to water intrusion events
- General mold remediation procedures
- Key contacts
- Legislative updates and/or new CD training information

Mold Awareness and general Plan information shall be included as part of the training of newly hired property management and/or Maintenance Staff.

6.0 DOCUMENTATION

QUICK POINTS	
	Property management and Maintenance Staff are required to document activities.
	Service requests involving potential mold or moisture problems shall be recorded and tracked on the Incident Tracking Log.
	All documents shall be maintained in the Property Management Office.

Maintaining appropriate records and documenting responses to resident concerns are responsibilities shared by both the Community Manager and Maintenance Staff. However, the Community Manager is responsible for maintaining all written correspondence generated by the service and business office staff. The Plan requires documentation of water intrusions events, resident complaints, responses actions, and follow-up. The sample documents in Appendix A are templates for these records and can be tailored as needed. All original documents shall be maintained in the Business Management Office. Documentation shall be retained for at least five years or as required by law, whatever period is longer.

Documentation shall include:

- Records of resident complaints, investigations conducted, and response actions (Incident Tracking Log).
- Signed Mold Lease Addendum.
- PM service records.
- Drying, restoration, and remediation project records.
- List of qualified staff, consultants, and/or contractors for restoration and mold remediation.
- List of emergency numbers including the Maintenance Director, Risk Manager, and corporate counsel.
- A map of the locations of water supply shut-offs, sewer clean-out traps, storm sewer inlets, and roof drains.
- Written communications regarding mold or excessive moisture between the property and residents.

7.0 INSPECTIONS AND SERVICE

QUICK POINTS	
	Include looking for mold and moisture problems during scheduled service inspections.
	It is important to fix the source of moisture problems as soon as possible within 48 hours to prevent mold growth.
	Inspections and service actions shall be documented.

Preventative service and routine inspection of HVAC system components and other building systems (e.g., roof, building envelope) are keys to identifying and preventing chronic moisture conditions and leaks that can lead to water damage and mold growth. As indicated below, periodic inspections and service activities shall be conducted in conjunction with the semi-annual filter change inspection during PM.

7.1 General Procedures for Maintenance Staff

- Visually inspect each unit at least twice annually and document your findings if mold is suspected.
- Identify the source and fix plumbing leaks, condensation problems, wet spots, and other moisture problems as soon as possible within 48 hours.
- Prevent moisture due to condensation by increasing surface temperature or reducing moisture level in the air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cool and dry), or dehumidify (if outdoor air is warm and humid).
- Vent moisture-generating appliances, such as clothes dryers, to the outside where possible and ensure that the vents are unobstructed.
- Maintain relative humidity below 60%, ideally 30% to 50% if possible.
- Do not let foundations stay wet. Provide drainage and slope the ground away from the foundation.
- Inspect and fix landscape sprinkler and irrigating systems to ensure that the water is properly directed away from the buildings. Sprinklers should not direct water onto unit exterior walls and foundations.
- Check rain gutters, downspouts, diverters, and storm drains to ensure they are free of debris.

- Conditions requiring potentially large, unbudgeted sums to remedy the situation need to be thoroughly documented with pictures and backup of expenses.

7.2 HVAC System Service and Inspections

Integrate the inspection for mold and moisture conditions into ongoing HVAC service during PM to ensure continued and efficient operation of the system. For the purposes of the Plan, the existing PM program will include the following:

- Inspection of condensate drain pans and drains to ensure proper operation (e.g., drains properly trapped, drain lines sloped for proper drainage).
- Inspection of insulation for evidence of physical damage, water damage, or mold growth.
- Check cleanliness of coils and fans when easily accessible or if the situation warrants.
- Check ducts for tears and gaps.
- Inspection and scheduled replacement of filters to ensure proper fit and desired efficiency.
- Inspection of cool surfaces (e.g., cold water pipes, uninsulated ducts in plenum space) for evidence of condensation.
- Inspection of outside air intakes for intact bird screens, evidence of freestanding water, or mold growth proximate to the intake.
- Inspection of kitchen and bathroom exhaust fans and any other exhausts utilized to remove airborne moisture from the units.

Visual inspection resulting in the identification of possible mold growth shall be photographed and documented.

7.3 Zone Inspections

Building exterior components that are commonly involved in water intrusion events include roofing (e.g., roof penetration leaks, clogged roof drains, excessive ponding, snow buildup over skylights, and other flashed components), exterior caulking (e.g., windows, doors, expansion joints), and poor drainage away from foundations. Condensation may form on cold surfaces such as poorly insulated roof drains, windows, and concrete slab on grade.

A visual roof inspection shall be conducted every six months. Maintenance Staff may conduct these inspections. Depending on the age of the roof or other factors, Property Management may conduct more comprehensive inspections performed by a certified roof inspector and/or

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may conduct infrared moisture testing of roofing systems. Property Management will maintain documentation of roofing inspections.

During zone inspections, the management team will also conduct and document visual inspections of exterior and interior surfaces of perimeter walls and foundations and on-grade slabs when evidence of water intrusion is apparent. These inspections will include the following:

- Condition of exterior caulking.
- General condition of exterior facade (cracks, water stains below windows, moss growth, or other suspect discoloration).
- Evidence of water intrusion or condensation on interior surfaces of the perimeter wall.
- Evidence of water ponding against foundation walls.
- Evidence of water intrusion through foundation wall or slab.
- Evidence of finished floor damage (e.g., stained carpeting, lifting floor tiles, suspect odors).

All inspections shall be documented.

8.0 CONSTRUCTION AND RENOVATION ACTIVITIES

QUICK POINTS	
1	Take care to prevent water from entering the building during construction and renovation activities.
	Check that materials used during construction are dry prior to installation.
	Be aware that demolition may uncover mold and do not disturb mold impacted materials unless proper personal protection equipment and dust control measures are in place.

Construction and renovation activities can result in floods, leaks, excessive humidity, and other moisture control problems. Demolition activities may disturb concealed reservoirs of mold growth in areas such as walls, ceilings, and floors, resulting in the generation of airborne mold contaminants. Even when no water intrusion has occurred, residents are likely to be concerned about dust and odors from the construction process and may confuse them with mold contaminants. It is therefore useful to consider methods to control moisture and minimize exposure to construction related contaminants. The following guidelines are to be implemented during all construction and renovation activities on the property.

- All renovations adjoining occupied areas should be conducted per Sheet Metal and Air Conditioning Contractors National Association and applicable state and local guidelines. These include taking measures to minimize the entry of water from construction areas into occupied areas, the maintenance of appropriate construction barriers, selection of low-toxicity materials, selecting work times to avoid generating contaminants (dust and toxic volatile organic compounds when the building is occupied), air cleaning (if needed), and negative air pressure when feasible.
- All porous materials such as insulation, carpet, lumber, and gypsum board must be supplied dry and maintained dry during the construction process.
- Demolition of areas that may have been water damaged or where mold is observed shall be conducted with precautions in place (see Section 11) to prevent release of mold contaminants into occupied areas.

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- Renovations to gypsum board walls should leave a 1/2-inch gap between concrete floor and wall to prevent moisture from wicking into gypsum board if a future water intrusion occurs.
- Air handlers that have return air from a construction area may also supply occupied areas. Efforts to isolate return air registers from construction contaminants should be employed. Turn off the HVAC system when possible.

9.0 PROCEDURES FOR SERVICE REQUESTS

QUICK POINTS	
1	If mold growth or moisture problems are suspected, then immediately document the request on the Incident Tracking Log.
2	Treat service requests as a priority. Remember that quick response may reduce the potential for mold to grow and spread.
3	Immediately report indications of health concerns or property damage to the Community Manager.
	Thoroughly document the response and any follow-up.

The Community Manager and Maintenance Staff shall use the following procedures when responding to a water intrusion incident or a potential mold condition.

At the office (before response)

- Fill out a service request and enter it on the Incident Tracking Log and record the observations of the resident regarding the incident or condition - whether they believe mold growth is present, and if they expressed a health concern or symptoms that they attribute to the condition. Do not question the resident regarding mold or health effects; only record what they tell you. If health concerns or property damage are reported, then immediately notify the Community Manager and Maintenance Director. If the resident has had mold or other indoor air quality tests conducted, ask for a copy and forward the results to Hamilton Dorsey Alston and the Maintenance Director.
- Treat the service request as a priority. When possible, two staff members should visit the unit together.

At the service location (initial response)

- Observe the nature and extent of the condition and check for the source of any water infiltration or excessive moisture sources - interior and exterior. In multi-story buildings, adjoining units (including above and below as the case may dictate) shall also be checked for impact from excessive moisture.
 - o If a source of water or excessive moisture is found, stop the leak or cause of moisture and dry affected areas completely as soon as possible within 24 hours of notification. Consult the procedures for drying various surfaces in Section 10 of the Plan.

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- o If no mold is found - If no indications of mold growth are observed, then the Community Manager shall send the Resident Follow-up Letter (Appendix A) indicating the results of the investigation.
- o If mold is found - Follow the procedures outlined in Section 11. Maintenance Staff may only conduct remediation of small areas of mold impact. Inform the resident on the service request (and the Resident Follow-up Letter) of the corrective action completed and additional steps to be taken, if any.
- Take photographs to show that the area has been dried, cleaned, and repaired. Label and file all photographs with the Incident Tracking Log for future reference.

Back at the office {after initial response}

- Before determining that a condition will require the use of outside consultants or contractors, consult with the Maintenance Director for guidance. If a decision is made to relocate the resident or offer any rent concessions or relocation reimbursement, contact Hamilton Dorsey Alston for a release of liability letter. If a health concern is expressed at any time or property damage is observed or suspected, immediately contact the Maintenance Director.
- Complete the Incident Tracking Log to reflect what action was taken.
- If mold remediation is conducted, create a project file with records of the clean-up.

Within 10 days (follow-up)

- When a condition involved repair, drying, and/or clean-up of mold, conduct a follow-up visit to the location and confirm that the response was effective and there has been no re-occurrence of the condition and there are no complaints. If no further response is indicated, then send the Resident Follow-up Letter to document the follow-up. If further response is indicated, repeat the service request procedure.
- Log the follow-up action on the Incident Tracking Log.
- Maintain a file of all written communications with residents regarding mold and/or water intrusion.

10.0 PROCEDURES FOR WATER INTRUSION

QUICK POINTS	
1	Identify the source of water intrusion (flood, leak, etc.) and stop the water flow as soon as possible.
-1.!	Drying activities need to begin immediately after the source is stopped and be completed within - 48 hours.
3	
3	
Water from sewer back-ups/leaks may be hazardous and require specialized procedures, equipment, and safety measures.	
Have a drying/restoration contractor pre-qualified for quick response to large or hazardous water events.	

Immediate response to water intrusion events (flood, leaks, etc.) will minimize the potential for mold growth. Maintenance Staff responding to a water intrusion event should initially identify the source of the water. If the source of the water is "clean" (e.g., potable), complete drying of porous materials within a 48-hour period may prevent significant mold growth.

Water intrusion from broken potable water pipes, rainwater or storm drains usually does not require personal protective equipment, at least initially. Conversely, sewer back-ups may carry harmful bacteria and generally result in the removal and disposal of porous materials and should be treated with caution, with remediation workers wearing appropriate personal protection equipment and employing engineering controls.

Have a remediation/drying restoration contractor pre-qualified for rapid response to water damage situations prior to water intrusions. Restoration contractors shall perform work per IICRC standards.

- When a water intrusion occurs, identifying the source of the water, and stopping the water entry as soon as possible is important. If the source of the water intrusion is from the sanitary sewer system, then drying is not an effective solution and removal of porous material (carpets, insulation, and gypsum board) is required.
- Clean and dry wet or damp spots within 48 hours, otherwise mold growth may become established.
- Clean carpets with high temperature dry steam and clean with a HEPA

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filtered vacuum.

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- Water damaged gypsum board and insulation that has not been dried effectively and quickly (within 48 hours) should be removed. Clean-up personnel should wear appropriate personal protection (Section 11).
- Clean-up of the affected area should be conducted when the area is unoccupied.
- Conduct appropriate post water-intrusion event investigation to ensure that mold growth has not been established on impacted building materials. Depending on the nature of the water intrusion event and the materials impacted, post event investigation can range from simple visual inspections to extensive inspection and testing by a qualified consultant.

The following table summarizes the methods for responding to clean water damage events.

Table 1: Water Damage - Clean-up and Mold Prevention*	
<i>Guidelines for Response to Clean Water Damage within 24-48 hours to Prevent Mold Growth</i>	
Water Damaged Material	Actions
Carpet and backing - dry within 24-48 hours**	<ul style="list-style-type: none">• Remove water with water extraction vacuum• Reduce ambient humidity levels with dehumidifier• Accelerate drying process with fans
Ceiling tile	<ul style="list-style-type: none">• Discard and replace
Cellulose insulation	<ul style="list-style-type: none">• Discard and replace
Concrete or cinder block surfaces	<ul style="list-style-type: none">• Remove water with water extraction vacuum• Accelerate drying process with dehumidifier, fans, and/or heaters
Fiberglass insulation	<ul style="list-style-type: none">• Discard and replace
Hard surface, porous flooring** {linoleum, ceramic tile, vinyl}	<ul style="list-style-type: none">• Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary• Check to make sure underflooring is dry; dry underflooring if necessary
Non-porous, hard surfaces (plastics, metals)	<ul style="list-style-type: none">• Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary
Upholstered furniture	<ul style="list-style-type: none">• Remove water with water extraction vacuum• Accelerate drying process with dehumidifier, fans, and/or heaters• May be difficult to complete within 48 hours. If the piece is valuable, you may wish to consult a restoration/water damage professional who specializes in furniture
Wallboard {drywall and gypsum board}	<ul style="list-style-type: none">• May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace.• Open and ventilate the wall cavity, if possible
Window drapes	<ul style="list-style-type: none">• Follow laundering or cleaning instructions recommended by the manufacturer
Wood surfaces	<ul style="list-style-type: none">• Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying. (Use caution when applying heat to hardwood floors.)• Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry• Wet paneling should be pried away from wall for drying

* this table is adapted from the U.S. EPA "Mold Remediation in Schools and Commercial Buildings" (March 2001, updated June 2001)

** The subfloor under the carpet or other flooring material must be cleaned and dried. This may involve removing the carpet when practicable. See the appropriate section of this table for recommended actions

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depending on the composition of the subfloor.

11.0 PROCEDURES FOR MOLD REMEDIATION

QUICK POINTS	
1	Clean-up of mold requires specialized procedures to reduce the release and spread of mold in the air and pore and protective equipment to prevent exposures.
2	Property Maintenance Staff may conduct clean-up of small areas of mold when properly trained and equipped.
3	Larger and more complex projects require the use of qualified consultants and contractors.

Remediation of established mold growth, or of water intrusion events involving sewage, shall be conducted utilizing procedures and engineering controls that will not result in further contamination of the building or result in adverse exposure to remediation workers and building occupants. Property Maintenance Staff, when properly trained, may conduct clean-up of small, localized mold conditions. For larger, more complex conditions, the Community Manager will contact the Regional Service Manager to determine if the services of a qualified consultant and/or a remediation contractor are needed develop appropriate work procedures on a case-by case basis. Procedures and engineering controls used shall be based on published generally accepted guidelines (see References) as outlined below.

11.1 Inspection Procedures

- Visual Inspection - A thorough visual inspection is an important initial step towards identifying mold growth. Ceiling tiles, gypsum wallboard, cardboard, duct liner, wood, carpet paper and other cellulose containing surfaces should be given particular attention during a visual inspection. The extent of any water damage and mold growth should be evaluated, as this will be important in determining remedial strategies. If the source of moisture has been present over a long period of time, mold may be hidden behind walls and the Community Manager should contact the Regional Service Manager or Maintenance Director to determine if a qualified consultant is needed to determine the extent of the mold. The use of equipment, such as a borescope to view spaces in ductwork or behind walls, or a moisture meter to detect moisture in building materials, may be helpful in identifying hidden sources of mold and the extent of water damage. Ventilation systems should also be visually checked, particularly for damp filters. The maintenance checklist in Appendix A may be used as a guideline for inspections when the location of mold is not obvious

or to assure that mold has not spread to multiple locations in the impacted area.

- **Pre-remediation Assessment** - Sampling and analyses are not required to undertake most remediation. In some cases, it may assist the design of remediation protocols and restoration criteria and may be used as a baseline to evaluate the effectiveness of the remediation. According to various governmental agencies, when the size of the affected areas is small (Level 1 or 2), decisions about appropriate remediation strategies can be made based on a visual review. Maintenance Staff (if properly trained, see Section 5) shall only perform small areas of remediation. Larger areas or more complex remediation generally requires the use of a qualified consultant and/or contractor, and they will advise the Community Manager, Regional Service Manager, and the Maintenance Director to determine if pre remediation sampling and analyses is needed. If the resident already has test results that show elevated levels of mold, regardless of the size of the area, then the Community Manager and the Maintenance Director shall be notified to evaluate if pre-remediation testing is prudent.
- **Resident Notification** - The resident(s) in the affected unit(s) should always be notified of what you have done, what you have found, and what you intend to do (see Section 4). Open communication is a key to claim control.

11.2 Levels of Remediation

- **Level 1: Small Isolated Areas** (10 sq. ft. or less, example: a ceiling tile or small wall area)
 - o Clean-up can be conducted by trained Maintenance Staff following the General Remediation Procedures outlined below.
 - o Contact the Regional Service Manager for advisement.
 - o Containment of the work area is not required. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation are recommended.
- **Level 2: Larger Isolated Areas** (10 - 30 sq. ft., example: a dry wall panel)
 - o Clean-up should be conducted by a qualified contractor following the General Remediation Procedures outlined below if the mold is localized.
 - o Contact the Regional Service Manager or Maintenance Director for advisement.

- o Containment of the work area may be warranted. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation are recommended.
- Level 3: Large Scale Remediation (more than 30 square feet)
 - o Clean-up must be conducted by a qualified contractor.
 - o Contact the Maintenance Director regarding the need for a qualified consultant to assist with remedial design, monitor the remediation, and provide post-remediation observation and/or testing.
- Level 4: Remediation of HVAC Systems
 - o If the remediation simply involves cleaning of coils or condensation pans, then follow the guidelines recommended by the HVAC manufacturers and the cleaning chemical manufacturer for proper methods. Follow the applicable general remediation guidelines in the General Remediation Procedures.
 - o A qualified HVAC cleaning contractor shall conduct remediation of ductwork and/or insulation.

11.3 General Remediation Procedures

These procedures are applicable to Level 1 and, in some cases, Levels 2 and 4 remediation. A qualified consultant and/or contractor, in conjunction with the Maintenance Director, shall determine remediation protocols for larger, more complex projects (Levels 3 and sometimes 2 and 4). While cleaning any area that has mold on the surface, follow these procedures:

- The work area should be unoccupied at the time of the work. Small projects can usually be completed quickly enough that relocation of the residents will not be necessary. Vacating residents from spaces adjoining the work area is usually not necessary but is recommended whenever any of the following are in the immediate area and may be exposed:
 - infants (less than 12 months old)
 - persons recovering from recent surgery
 - immune suppressed people
 - people with chronic inflammatory lung diseases (asthma, hypersensitivity pneumonitis, and severe allergies)
- Although current, applicable law does not mandate the use of personal protective equipment during these types of mold remediation procedures, Columbia Residential strongly recommends that all associates involved directly in these types of mold remediation activities utilize the following **PPE**:
 - rubber or vinyl gloves
 - appropriate clothing and shoes

- eye protection
 - an appropriately snug-fitting disposable mask
- Turn off all HVAC equipment and cover vents with plastic sheeting if near work area.
- Exercise caution around any electrical equipment or fixtures.
- Make sure the area is well ventilated at all times during the removal process. Do not use a standard fan in an area where mold is present or suspected. Use a HEPA filtered fan when needed.
- Read and follow the instructions and material safety data sheets (MSDS) of all chemicals used.
- Wipe all surfaces with a non-ammonia soap or detergent in water to remove surface molds.
- Use a stiff brush or cleaning pads with detergent and water on all uneven (rough) surfaces.
- If sanding or a dry wire brush is used to remove visible mold or water damage on hard surfaces, then a vacuum cleaner with HEPA filters should be used to capture dust released by the process.
- Upon completion, damp wipe all surfaces clean with water. Use a wet/dry vacuum if necessary.
- The use of biocides is not recommended but over-the-counter disinfectants may be used (never mix ammonia with bleach).
- Let all materials dry overnight (until thoroughly dry).
- Remove and discard all porous or cellulose materials (e.g., wallboard) that appear to have mold on them. Before cutting out drywall, tape plastic sheeting six inches beyond the wet or moldy area and tape down to limit the release of mold or dust into the area. Contaminated, absorbent material should be sealed in plastic sheets that are taped closed before removing from the area for disposal.
- HEPA vacuum clean the entire work area and areas used by workers as a means of egress at completion (HEPA vacuums are available at local home center stores.)
- Wipe clean all surfaces in the work area and, if warranted, areas used by workers as a means of egress at completion of the cleaning and removal process.
- Wash hands and face thoroughly. HEPA vacuum all clothes and shoes during any break and at completion of the remediation. Dispose of respirator and wash other personal protective equipment.

If you have any questions, contact the Regional Service Manager immediately before starting work.

11.4 Contractor and Consultant Requirements

Remediation/restoration contractors - contractors must have specialized experience in remediation of microbial contamination of building materials and HVAC systems. Contractor's personnel should be able to provide

evidence of specialized training in mold remediation. Standard contract procedures should be followed. Contractors are required to demonstrate normal insurance coverage but also must provide evidence that their policy does not carry a mold exclusion or limitation. A best practice is to visually verify on a spot check basis that the contractor is following the prescribed and agreed upon remediation protocol. Obtain written confirmation from the contractor stating that the remediation was completed.

Project design, monitoring and testing consultants - consultants must be appropriately trained in mold assessment and sampling methodology and be experienced with environmental sampling, data analysis, and writing mold remediation protocol. Preferably, a Certified Industrial Hygienist (CIH), Certified Microbial Consultant, or Certified Safety Professional (CSP) with experience in microbiology or toxicology should supervise the work. The company should use a microbial lab that currently participates in the American Industrial Hygiene Association's Environmental Microbiology Lab Proficiency Test program. Standard contract procedures should be followed. Consultants are required to demonstrate normal insurance coverage but also must show evidence that their policy does not carry a mold exclusion or limitation.