

Water Intrusion and Mold Remediation Protocol
Bay Medical Sacred Heart Hospital
West Wing
615 North Bonita Avenue, Panama City, Florida
November 8, 2018 – Version 1.2



Introduction

The following scope of work for the West Wing of the Bay Medical Sacred Heart Hospital in Panama City, Florida, is based on conditions observed during inspections conducted on October 18, 2018 by True North Consultants, Inc. The inspection focused on water- and mold-related damage to the facility following Hurricane Michael. Building envelope damage due to sustained high winds resulted in Category 3¹ water entering the building. Perimeter rooms and spaces were primarily affected, with other more interior locations impacted based on the extent of localized building envelope failure.

The building is currently undergoing moisture mapping and inventorying by others. Retained moisture is present within materials throughout the building. Portions of heating, ventilating, and air-conditioning (HVAC) systems have been directly impacted by Category 3 water. Temporary humidity stabilization measures have aided in reducing the opportunity for widespread mold growth to occur. However, dedicated drying measures have not been implemented.

For situations where mold growth is encountered, the work must be performed by, or under the direct supervision of, individuals licensed by the State of Florida Department of Business and Professional Regulation (DPOR) – Mold-Related Services Licensing Program pursuant to Florida Statute Title XXXII – Chapter 468, Part XIV Mold-Related Services (ss. 468.84-468.8424). This protocol was prepared by Craig B. Ramich of True North Consultants, Inc., DPOR License Number MRSA2634, expires July 31, 2020.

Objective

The objective of this water intrusion and mold remediation work plan is to prescribe the means by which to safely and effectively address water-damaged and mold-affected building materials. All remediation work should be performed in accordance with the guidelines provided in the following standards and guidance:

- New York City Department of Health & Mental Hygiene Bureau of Environmental & Occupational Disease Epidemiology (NYCDOH) “Guidelines on Assessment and Remediation of Fungi in Indoor Environments”, in particular, Section 3 – Remediation”;
- Texas Department of Health “Texas Mold Assessment and Remediation Rules”, in particular Section 295.322 (remediation) and Section 295.324 (clearance); and similar guidance.
- ANSI/IICRC S500-2015 “Standard for Professional Water Damage Restoration” (Fourth Edition), in particular remediation of Category 2 and Category 3 water-impacted building materials;
- ANSI/IICRC S520-2015 “Standard for Professional Mold Remediation” (Third Edition), in particular remediation of mold growth and Category 2 and Category 3 water-impacted building materials;
- ASHRAE/ANSI/ASHE Standard 170 – Ventilation of Health Care Facilities, in particular, remediation of ventilation systems impacted by bulk water intrusion, mold growth, or deposition of particulate from Category 3 water or mold growth;
- National Air Duct Cleaners Association (NADCA) Standard for Assessment, Cleaning, and Restoration of HVAC Systems – 2013 (ACR 2013), in particular, remediation of ventilation systems

¹ Category 3 water is defined as (IICRC S500 Section B. Definitions): “Category 3 water is grossly contaminated and can contain pathogenic, toxigenic or other harmful agents and can cause significant adverse reactions to humans if contacted or consumed. Examples of Category 3 water can include, but are not limited to: sewage; wasteline backflows that originate from beyond any trap regardless of visible content or color; all forms of flooding from seawater; rising water from rivers or streams; and other contaminated water entering or affecting the indoor environment, such as wind-driven rain from hurricanes, tropical storms, or other weather-related events. Category 3 water can carry trace levels of regulated or hazardous materials (e.g., pesticides, or toxic organic substances)”

impacted by bulk water intrusion, mold growth, or deposition of particulate from Category 3 water or mold growth;

- Centers for Disease Control and Prevention (CDC) publication “Guidelines for Environmental Infection Control in Health Care Facilities - 2013” in particular, for specific means and methods of cleaning and decontamination in health care facilities; and
- The Joint Commission (TJC) Environment of Care (EOC) Standard EC.02.06.01, in particular, for specific means and methods for the built environment including construction activities.

1.0 Area(s) Covered

This work plan addresses the following building/structure and conditions observed during the initial site inspection:

**Patient Rooms, Nursing Stations, Medical Procedure Areas, Common and Support Areas
Bay Medical Sacred Heart – West Wing
615 North Bonita Avenue, Panama City, Florida**

2.0 General Requirements

This work plan outlines the methods and procedures to be used for the removal of mold-affected and/or water-damaged building materials and any other items within the defined work area.

- 2.1 Building materials involved may include, but are not limited to, porous items (i.e., gypsum wallboard, pressed-wood products, plaster, insulation, carpeting/pad, and similar), semi-porous items (i.e., hard woods, plywood, and similar), and non-porous materials (i.e., concrete, tile flooring products, coated metals, plastics, and similar)
- 2.2 Any furniture, clothing, or other movable items affected by water or mold should initially be cleaned or laundered; if ineffective, items may require disposal.
- 2.3 The treatment, removal, handling, and disposal of water-damaged and/or mold-affected building materials shall be performed in accordance with this work plan and with applicable U.S. Environmental Protection Agency (EPA), U.S. Department of Labor – Occupational Safety and Health Administration (OSHA), and other industry standards, such as those published by the New York City Department of Health & Mental Hygiene, the Texas Department of State Health Services, and ANSI/IICRS S500 and S520.
- 2.4 Any work conducted within the building that will require electrical, plumbing or other contractor services will be conducted in accordance with State of Florida and local municipality requirements and/or building codes.
- 2.5 The contractor shall obtain all permits for the work to be performed, where required.
- 2.6 Electricity and water are available onsite and will be provided to the contractor at no cost.
- 2.7 All materials removed from structure(s) as part of this work shall be disposed of in accordance with all applicable Federal, state, and local laws and regulations.

3.0 Personal Protective Equipment

The remediation contractor is responsible for providing sufficient means, methods, and equipment to protect workers from any hazards associated with the work.

- 3.1 For all remediation work specified as Level III or Level IV work areas (areas involving greater than 30 square feet (sf) or 100 sf, respectively, of Category 3 water-impacted materials and/or mold growth within the room/area) pursuant to NYCDOH Sections 3.3 and 3.4 or equivalent, all persons performing remediation activities and/or entering a work area during active remediation activities shall wear protective disposable coveralls, protective disposable gloves, non-skid footwear or coverings, eye protection and respiratory protection.
- 3.2 At a minimum, a half-face air purifying respirator equipped with dual high-efficiency particulate air (HEPA) filters shall be used when performing tasks requiring respiratory protection for Level IV work areas (NYCDOH Section 3.4). Full-face respirators are recommended. N95 disposable respirator masks may be used for Levels I through III pursuant to NYCDOH Sections 3.1 through 3.3.
- 3.3 Each worker must perform positive and negative air pressure fit test each time the respirator

is used, where applicable. All proper medical clearance and monitoring and fit testing must be completed prior to using a half-face respirator.

- 3.4 The remediation contractor may implement health and safety provisions more stringent than stipulated in this protocol. The personal protective measures stipulated are the minimum requirements for the safe implementation of the work.
- 3.5 The remediation contractor and all workers shall strictly follow all additional instructions provided by or on behalf of the owner and facility manager.

4.0 Work Area Preparation

Work area preparation procedures will be provided based on the extent of remediation to be performed as prescribed by NYCDOH or equivalent. The general work area preparation requirements are listed below.

- 4.1 The water intrusion/mold remediation contractor (the "contractor") shall isolate the work areas from the remainder of the rooms/areas and/or structure. At a minimum, critical barriers will be installed at locations within each room or functional area that sufficiently separate affected/potentially-affected building materials from unaffected areas. Critical barriers shall consist of a minimum 6-mil, fire- retardant polyethylene sheeting or equivalent. The contractor shall construct barriers in a fashion to minimize damage to walls, ceilings, and floors.
- 4.2 Any wall or ceiling openings at non-affected locations shall be sealed with tape and/or sheeting. Heating, ventilating, and air-conditioning (HVAC) equipment including supply diffusers, return registers, and mechanical closets shall be sealed if present in the work area when not a part of the work area. Coordinate with facility maintenance/operations staff to ensure systems are not operational prior to sealing.
- 4.3 A minimum 2 feet of buffer area from adjacent water damage or mold-affected building materials (i.e., wallboard) shall be provided, unless infeasible (for example, prohibited by room configuration).
- 4.4 All contents and furnishings present in the work areas shall be removed and/or sealed in the same type of sheeting used for critical barriers.
- 4.5 ALL remediation shall be conducted within the room/area. The contractor shall construct a dual-chamber decontamination unit to each contained work area. All air locks must be sealed at the end of each work day.
- 4.6 The contractor shall contain the work area and supply sufficient negative pressurization of at least 5 Pascals pressure differential between outside and inside contained work areas. Negative pressurization must also obtain a minimum of 4 room air changes per hour in the work area. Negative air filtration units must be provided with HEPA filters and exhaust to the exterior, unless prohibited by unit configuration.
- 4.7 A separate ante room (e.g., decontamination unit) shall be provided for rooms/areas undergoing Level III or IV remediation.
- 4.8 Adhesive walk pads or similar shall be provide for rooms/areas undergoing Level III or IV remediation.
- 4.9 At all times during the work, the contractor shall maintain relative humidity levels below 50 percent.

5.0 General Cleaning Procedures

The cleaning procedures to be employed for water damaged and mold- affected materials that will not be removed, sanded, and/or encapsulated will vary based on the type of surface or material affected.

- 5.1 Non-porous materials: Surfaces shall be cleaned by HEPA vacuuming, wiping/cleaning with a surfactant/detergent, followed by a final HEPA vacuuming. Additional cleaning/wiping may be required for heavily affected surfaces. Surfactant/detergent must be approved by the appropriate Bay Medical representative prior to application.
- 5.2 Porous materials: All porous materials contacted by Category 3 water or exhibiting visible mold growth shall be removed. Cleaning of porous materials should not be attempted.
- 5.3 Semi-porous materials: Surfaces shall be cleaned by HEPA vacuuming, wiping/cleaning with a surfactant/detergent, followed by a final HEPA vacuuming. If staining remains in surface of material, additional surface treatment, including but not limited to wire brushing

and/or sanding, may be warranted. Additional cleaning/wiping may be required for heavily impacted surfaces. Unsuccessful cleaning of semi-porous materials will warrant their removal.

- 5.4 In the event that biocides or other chemical product may be used by the contractor to affect cleaning of materials or items, such chemicals shall be used in accordance with manufacturer's instructions and only after review and approval by the owner or owner's representative.

6.0 General Remediation Procedures

The remediation procedures to be employed for water damaged and mold-affected building materials that will be removed, sanded, and/or encapsulated will vary based on the type of surface or material affected.

- 6.1 Non-porous materials: Category 3 water-damaged (stained) or mold-affected non-porous surfaces shall be cleaned by HEPA vacuuming, wiping/cleaning with a surfactant/detergent, followed by a final HEPA vacuuming. Additional cleaning/wiping may be required for heavily-affected surfaces.
- 6.2 Porous materials: Building materials that have been impacted by Category 3 water and/or visible mold growth shall be removed. A minimum 2-foot buffer area from the outermost extent of affect shall also be removed, wherever possible. At the contractor's discretion and under instruction from the owner or owner's representative, a larger buffer area may be removed to aid in future renovation work. Typically, the buffer area is fashioned in uniform sections for standard replacement wallboard sizes of 4 foot by 8 foot sheets (i.e., 4-foot sections are removed). Minimize breaking and disturbance of mold-affected materials.
- 6.3 Semi-porous materials: Wood support members, plywood, and similar building materials are considered semi-porous materials. These items shall be cleaned by HEPA vacuuming, wiping/cleaning with a surfactant/detergent, followed by HEPA vacuuming. In the event that residue surface staining remains, manual surface sanding may be employed. HEPA vacuuming shall be performed following any sanding activities. Semi-porous materials that exhibit rot shall be removed as specified by the owner or owner's representative. Contractor may elect to utilize additional chemical surfactants to address surface staining pursuant to acceptance by the owner or owner's representative. Unsuccessful cleaning of semi-porous materials will warrant their removal.
- 6.4 All removed materials and wastes shall be double bagged inside of the work area. No handling of any unbagged wastes outside of the work area is permitted. Double bagging shall consist of placing generated wastes in a 6-mil thickness (minimum) non-opaque bag that is tied and taped shut using the "gooseneck" method. This bag is then placed in a second 6-mil thickness non-opaque bag and closed shut using the "gooseneck" method. Exterior surfaces of bags must be "white glove" clean prior to removal from work area. ALL materials must be bagged INSIDE the unit and immediately removed from the premises at the end of the work day.
- 6.5 After all affected building materials have been properly remediated, a Florida-licensed mold assessor or an individual directly under their supervision will perform a final visual clearance inspection. All interior surfaces, including surfaces of equipment, must be "white glove" clean prior to performance of inspection. Encapsulation shall not occur until final visual clearance has been achieved.
- 6.6 Remediated building materials and surfaces shall be encapsulated using Foster™ mold resistant coating or equivalent. Encapsulant shall not be applied prior to visual clearance of the work area. Encapsulant must be approved by the owner or owner's representative prior to application.
- 6.7 In the event that biocides or other chemical product may be used by the contractor to affect remediation of materials or items, such chemicals shall be used in accordance with manufacturer's instructions and only after review and approval by the owner or owner's representative.

7.0 Area-Specific Remediation Procedures

The remediation procedures to be employed for the above-referenced areas are presented below.

- 7.1 Patient Rooms – Ensure all non-fixed items (i.e., furniture) and other personal effects (i.e., clothing) are removed from the work area prior to any disturbance. Such items must be “white glove” clean or properly bagged prior to being removed from the work area.
- 7.1.1 For patient rooms, provide either drop cloths and critical barriers (NYCDOH Section 3.1 and 3.2) or a fully-contained, negative-pressure filtration system, and protections specified by NYCDOH Section 3.3 and 3.4 (or equivalent) at a minimum, dependent upon quantity of affected materials;
 - 7.1.1.1 Containment shall consist of the contiguous entry and patient care areas; incorporation of bathroom into containment will be dependent on affected building materials;
 - 7.1.1.2 Install critical barriers at all doorways to other rooms and incorporate a zipper door arrangement at unit entry; for Level III and IV areas incorporate ante room and adhesive walk pads;
 - 7.1.1.3 Install covers for HVAC system supply/return vents and similar unless impacted by mold growth or Category 3 water;
 - 7.1.1.4 Remove porous building materials as indicated on moisture map or similar inventory; add a 2-foot buffer area to affected building materials, where possible;
 - 7.1.1.5 Clean semi- and non-porous materials as indicated on moisture map or similar inventory;
 - 7.1.1.6 For flooring materials that exhibit buckling, bulging, delamination, or cannot be sufficiently cleaned, remove flooring materials;
 - 7.1.1.7 For HVAC system components directly impacted by mold growth or Category 3 water, remove all porous materials (e.g., insulated flexible duct) and clean all non-porous materials and components (i.e., ductwork, louvers, vents);
 - 7.1.1.8 Inspect all areas adjacent to removal and cleaned areas for signs of additionally-impacted building materials or surfaces; remove/clean impacted building materials pursuant to industrial hygienist approval;
 - 7.1.1.9 Following removal, HEPA vacuum and thoroughly clean all adjacent materials using approved antimicrobial cleaning agent;
 - 7.1.1.10 If discoloration remains on surface, consider utilizing mechanical abrasive methods and anti-microbial cleaning agent; removal determination may be required by industrial hygienist;
 - 7.1.1.11 Following removal and cleaning activities, perform HEPA vacuuming and wet wiping of all surfaces within containment, including all unaffected surfaces (e.g., final cleaning); all interior surfaces, including barriers and equipment, must be “white glove” cleaning prior to performance of final cleaning clearance inspection;
 - 7.1.1.12 At the completion of final cleaning, notify industrial hygienist for final cleaning clearance inspection;
 - 7.1.1.13 Following approval by industrial hygienist, encapsulate cleaned building materials;
 - 7.1.1.14 Prepare containment for final air clearance testing.
- 7.2 Treatment Areas/Rooms – Ensure all non-fixed items (i.e., furniture) and other personal effects (i.e., clothing) are removed from the work area prior to any disturbance. Such items must be “white glove” clean or properly bagged prior to being removed from the work area.
- 7.2.1 For treatment areas/rooms, provide a fully-contained, negative-pressure filtration system, and protections specified by NYCDOH Section 3.3 and 3.4 (or equivalent) at a minimum;
 - 7.2.1.1 Containment shall consist of the contiguous entry and treatment areas; i
 - 7.2.1.2 Install critical barriers at all doorways to other rooms and incorporate a zipper door arrangement at unit entry; incorporate ante room and adhesive walk pads;
 - 7.2.1.3 Install covers for HVAC system supply/return vents and similar unless impacted by mold growth or Category 3 water;
 - 7.2.1.4 Remove porous building materials as indicated on moisture map or similar

- inventory; add a 2-foot buffer area to affected building materials, where possible;
 - 7.2.1.5 Clean semi- and non-porous materials as indicated on moisture map or similar inventory;
 - 7.2.1.6 For flooring materials that exhibit buckling, bulging, delamination, or cannot be sufficiently cleaned, remove flooring materials;
 - 7.2.1.7 Inspect all areas adjacent to removal and cleaned areas for signs of additionally-impacted building materials or surfaces; remove/clean impacted building materials pursuant to industrial hygienist approval;
 - 7.2.1.8 For HVAC system components directly impacted by mold growth or Category 3 water, remove all porous materials (e.g., insulated flexible duct) and clean all non-porous materials and components (i.e., ductwork, louvers, vents);
 - 7.2.1.9 Following removal, HEPA vacuum and thoroughly clean all adjacent materials using approved antimicrobial cleaning agent;
 - 7.2.1.10 If discoloration remains on surface, consider utilizing mechanical abrasive methods and anti-microbial cleaning agent; removal determination may be required by industrial hygienist;
 - 7.2.1.11 Following removal and cleaning activities, perform HEPA vacuuming and wet wiping of all surfaces within containment, including all unaffected surfaces (e.g., final cleaning); all interior surfaces, including barriers and equipment, must be “white glove” cleaning prior to performance of final cleaning clearance inspection;
 - 7.2.1.12 At the completion of final cleaning, notify industrial hygienist for final cleaning clearance inspection;
 - 7.2.1.13 Following approval by industrial hygienist, encapsulate cleaned building materials, avoid damaging other components and finishes;
 - 7.2.1.14 Prepare containment for final air clearance testing.
- 7.3 **Support Areas** – Ensure all non-fixed items (i.e., furniture) and other personal effects (i.e., clothing) are removed from the work area prior to any disturbance. Such items must be “white glove” clean or properly bagged prior to being removed from the work area.
- 7.3.1 For support areas, provide either drop cloths and critical barriers (NYCDOH Section 3.1 and 3.2) or a fully-contained, negative-pressure filtration system, and protections specified by NYCDOH Section 3.3 and 3.4 (or equivalent) at a minimum, dependent upon quantity of affected materials;
 - 7.3.1.1 Containment shall consist of the contiguous areas, where practical;
 - 7.3.1.2 Install critical barriers at all doorways to other rooms and incorporate a zipper door arrangement at unit entry;
 - 7.3.1.3 Install covers for HVAC system supply/return vents and similar;
 - 7.3.1.4 Remove porous building materials as indicated on moisture map or similar inventory; add a 2-foot buffer area to affected building materials, where possible;
 - 7.3.1.5 Clean semi- and non-porous materials as indicated on moisture map or similar inventory;
 - 7.3.1.6 For flooring materials that exhibit buckling, bulging, delamination, or cannot be sufficiently cleaned, remove flooring materials;
 - 7.3.1.7 For HVAC system components directly impacted by Category 3 water, remove all porous materials (e.g., insulated flexible duct) and clean all non-porous materials and components (i.e., ductwork, louvers, vents);
 - 7.3.1.8 Inspect all areas adjacent to removal and cleaned areas for signs of additionally-impacted building materials or surfaces; remove/clean impacted building materials pursuant to industrial hygienist approval;
 - 7.3.1.9 Following removal, HEPA vacuum and thoroughly clean all adjacent materials using approved antimicrobial cleaning agent;
 - 7.3.1.10 If discoloration remains on surface, consider utilizing mechanical abrasive methods and anti-microbial cleaning agent; removal determination may be required by industrial hygienist;
 - 7.3.1.11 Following removal and cleaning activities, perform HEPA vacuuming and wet wiping of all surfaces within containment, including all unaffected surfaces (e.g., final cleaning); all interior surfaces, including barriers and equipment,

- must be “white glove” cleaning prior to performance of final cleaning clearance inspection;
- 7.3.1.12 At the completion of final cleaning, notify industrial hygienist for final cleaning clearance inspection;
- 7.3.1.13 Following approval by industrial hygienist, encapsulate cleaned building materials;
- 7.3.1.14 Prepare containment for final air clearance testing.
- 7.4 Procedures for Newly-Discovered Mold Growth – This building experienced water intrusion primarily at perimeter locations through building envelope failures. Consequently, moisture has likely been retained in building and insulating materials resulting in significant mold growth at these locations. Since wall, ceiling, and floor cavities are in direct communication and air flows through these areas, any significant level of mold contamination can impact nearby building materials (e.g., within a patient room or similar area). Therefore, upon discovery of mold growth within a ceiling, wall, or floor cavity, the Area-Specific Procedures indicated above (Section 7.1, 7.2, and 7.3) should be supplemented and superseded (where applicable) by the following procedures.
- 7.4.1 Porous materials within the vicinity of the newly-discovered mold growth that cannot not be readily HEPA vacuumed or wiped should be discarded due to the presence of abnormal mold spore loading on surfaces. These materials include, but are not limited to, drop ceiling tiles and insulating materials.
- 7.4.2 Porous materials within the vicinity of the newly-discovered mold growth that can be readily HEPA vacuumed or wiped should be addressed pursuant to applicable sections above (e.g., Section 7.1.1.11, 7.2.1.11, and 7.3.1.11). These materials include, but are not limited to, gypsum board and similar building materials. Any porous materials that exhibit any visible surface mold growth, including gypsum board, should be removed.
- 7.4.3 Semi-porous materials within the vicinity of newly-discovered mold growth should be HEPA vacuumed and cleaned, provided no visible mold growth is present on surfaces. If visible mold growth is present, semi-porous should be further cleaned which may include abrasive (e.g., sanding) methods. These materials include, but are not limited to, wood studs, plywood sheeting, and similar building materials.
- 7.4.4 HVAC systems and components within the vicinity of newly-discovered mold growth should be addressed as follows:
- 7.4.4.1 Flexible ductwork and fabric-like internal duct insulation should be removed and discarded due to abnormal mold spore loading;
- 7.4.4.2 Solid surfaces within HVAC systems, including but not limited to, plenums and ductwork, should be HEPA vacuumed and wet wiped.
- 7.5 Procedures for Water-Damaged or Mold-Affected Exterior Cladding Building Components – This building experienced water intrusion primarily at perimeter locations through building envelope failures. As a result, moisture has likely been retained in exterior cladding and related insulating materials (e.g., exterior insulation and finish system [EIFS]) resulting in water damage and mold growth at these locations. Therefore, upon discovery of water damage or mold growth on/in cladding and related insulating materials (as accessed from interior locations), the Area-Specific Procedures indicated above (Section 7.1, 7.2, and 7.3) should be supplemented and superseded (where applicable) by the following procedures.
- 7.5.1 Cladding system sheet coverings that exhibit water damage (e.g., staining, delamination, buckling, cracking), accessible from interior locations, should be removed plus a 2-foot buffer, where possible. Certain building features may prohibit this buffer size. Consult industrial hygienist for such situations.
- 7.5.2 Cladding system porous insulating materials (e.g., Styrofoam or similar) that exhibit water damage (e.g., staining, delamination, buckling), accessible from interior locations, should be removed plus a 2-foot buffer, where possible. Insulating materials should be removed to a depth such that water damage or mold growth is no longer visible. Certain building features may prohibit this buffer size. Consult industrial hygienist for such situations.
- 7.5.2.1 In certain situations, the entire insulating sheet material may require removal. Prior to removing any cladding system insulating materials, consult a qualified building envelope professional with experience in rehabilitating

- EIFS and similar systems to ensure corrective actions will not compromise integrity of the cladding system.
- 7.5.3 HEPA vacuum and clean surfaces of remaining cladding system material.
 - 7.5.4 Following cleaning, perform surface testing of representative areas in accordance with Section 8.3. This sampling is in addition to that prescribed in Section 8.3. Clearance criteria for Section 8.3 applies to this section.
 - 7.5.5 Metal components of walls and cladding systems that exhibit water damage or mold growth should be addressed as follows:
 - 7.5.5.1 Significantly corroded metal components should be qualitatively tested for structure integrity via hand-pressure examination of component; if material easily bends or breaks via hand-pressure, then remove. For structural components, consult a qualified professional to determine appropriate testing procedure.
 - 7.5.5.2 Materials exhibiting surface corrosion, staining, or other abnormal surface condition should be HEPA vacuumed and surface cleaned. No free or loose debris should be present following cleaning.
 - 7.5.6 Wood components of walls and cladding systems that exhibit water damage or mold growth should be addressed as follows:
 - 7.5.6.1 Semi-porous wood components (e.g., studs, sheeting) should be qualitatively tested for structure integrity via awl penetration examination of the component; for 2-inch by 4-inch wood studs, apply awl directly into stud surface and remove if penetration is greater than 0.25-inch for narrow depth and 0.75-inch for wide depth; for plywood sheeting and similar components, apply awl directly into sheet surface and remove if penetration is greater than 0.25-inch. For structural components, consult a qualified professional to determine appropriate testing procedure.
 - 7.5.6.2 Pressed wood products (i.e., particle board, OSB) that exhibit expansion, buckling, delamination, or similar abnormal surface condition should be removed. Prior to removing any cladding system sheeting materials, consult a qualified building envelope professional with experience in rehabilitating EIFS and similar systems to ensure corrective actions will not compromise integrity of the cladding system.

8.0 Area-Specific Clearance Procedures

The project clearance procedures to be employed following remediation for the above-referenced units are presented below.

- 8.1 Visual Clearance – Work areas shall be cleared prior to dismantling of the containment area.
 - 8.1.1 All remediated building materials and interior surfaces shall be free of visible dirt, debris, particulate, and similar matter; containment walls and floors shall be clean; inspect cleanliness dermally (i.e., “white glove” test).
 - 8.1.2 For mold- or Category 3 water-affected materials that have been superficially cleaned but exhibit underlying staining, perform dermal cleanliness check (i.e., wipe) of surface. Material is deemed as clean if no residue is dislodged when wiped.
 - 8.1.3 The work area shall be deemed as cleared when the cleanliness of surfaces and materials is achieved in accordance with Sections 8.1.1 and 8.1.2.
 - 8.1.4 No encapsulant or other coatings shall be applied prior to performing the final visual clearance inspection. Following clearance, encapsulants or coatings may be applied contingent upon all building materials to be coated exhibiting acceptable moisture conditions.
 - 8.1.5 Coordinate disassembly of containment area(s) and demobilization with client Infection Prevention and Project Manager. Since air quality and surface clearance sampling is to be performed, containment area(s) must remain until air and surface clearance criteria have been fulfilled. Containment structures may remain in place following clearance if requested by client.
- 8.2 Air Quality Clearance – Air quality clearance procedures will be performed following the achievement of visual clearance of the work area(s).
 - 8.2.1 Prior to performing final air clearance sampling and following the completion of cleaning activities, the negative pressure filtration system should be operated for a

- minimum of 6 hours (24 hours recommended). Following filtration, the work area shall be sealed and remain undisturbed for a minimum of 6 hours (24 hours recommended; i.e., cease operation of air filtration units).
- 8.2.2 For microbial samples, non-viable (spore trap) air sampling shall be performed at discrete locations within the work area(s). Sampling may be performed in different functional or segregated areas of the contained space(s). Utilize the manufacturer's guidance for sampling equipment (i.e., pumps), sampling media, sampling times, packaging, and related matters. Frequency of sample collection shall be a minimum of one sample per discrete contained area. Add one sample per 25,000 cubic feet of contained area for larger contained spaces.
- 8.2.3 At least one background sample must be collected from an outdoor location at the time of work area sampling. Avoid collecting background samples during precipitation events.
- 8.2.4 At least one control sample must be collected from a currently functional, unaffected indoor location at the time of work area sampling. These areas may include, but are not be limited to, operating rooms, patient rooms, and support areas.
- 8.2.5 All samples shall be analyzed by a laboratory that participates in the National Voluntary Laboratory Accreditation Program for microbiologic interpretation.
- 8.2.6 Acceptable air quality conditions have been deemed to be achieved when the concentrations and speciation of mold spores within the work area(s) are the same or better than (i.e., lesser concentrations) than those identified in the background sample (i.e., outdoors). In the event that unfavorable outdoor environmental conditions exist during final clearance sampling, the interior control sample may be substituted for outdoor background (e.g., during rain or similar conditions). For further guidance on interpreting air clearance results, please consult the American Conference of Industrial Hygienists "Bioaerosols – Assessment and Control" Chapter 13 – Data Analysis.
- 8.2.7 In the event that final air clearance samples do not demonstrate acceptable air quality conditions, the interior surfaces of the contained area(s) shall be re-cleaned and Section 8.2.1 through Section 8.2.5 shall be repeated.
- 8.2.8 Mold and mold spores are ubiquitous and present in all indoor environments. Surface and/or air samples will normally identify the presence of mold spores in the indoor environment. There is no practical way to eliminate all mold and mold spores from the indoor environment. However, mold growth can be controlled by preventing water intrusion and by cleaning or removing materials affected by mold and excess moisture.
- 8.3 Surface Clearance – Surface clearance procedures will be performed following the achievement of visual clearance of the work area(s).
- 8.3.1 Prior to performing final surface clearance sampling and following the completion of cleaning activities, the negative pressure filtration system should be operated for a minimum of 6 hours (24 hours recommended). Following filtration, the work area shall be sealed and remain undisturbed for a minimum of 6 hours (24 hours recommended; i.e., cease operation of air filtration units).
- 8.3.2 Quantitative bacterial surface sampling shall be performed at discrete locations within the work area(s). Sampling will be performed in different functional or segregated areas of the contained space(s). Utilize the manufacturer's guidance for sampling equipment, sampling media, sampling times, packaging, and related matters. Incorporate rapid incubated sampling, such as Hygenia EnSURE™ system with MicroSnap™ total viable count via relative luminescence or equivalent, to provide colony forming unit (CFU) levels within a work shift (e.g., 8-hours). Frequency shall include at least one horizontal and one vertical surface per contained area. Add one horizontal and one vertical surface sample per 25,000 cubic feet of contained area for larger contained spaces.
- 8.3.3 At least one control sample must be collected from a currently functional, unaffected indoor location at the time of work area sampling. These areas may include, but are not be limited to, operating rooms, patient rooms, and support areas.
- 8.3.4 Acceptable surface conditions have been deemed to be achieved when the concentrations within the work area(s) are below the limit of method detection or the same or better than (i.e., lesser concentrations) than those identified in a control sample (i.e., unaffected areas). For further guidance on interpreting surface



clearance results, please consult the CDC "Guidelines for Environmental Infection Control in Health Care Facilities - 2013" Section 4. – Environmental Surface Sampling.

- 8.3.5 In the event that final surface clearance samples do not demonstrate acceptable surface conditions, the interior surfaces of the contained area(s) shall be recleaned and Section 8.3.1 through Section 8.3.4 shall be conducted again.

Disclaimer

Additional protective measures have been incorporated into this remediation protocol, when compared to a typical commercial setting, due to the occupancy type of this facility (e.g., medical operations). While methods and procedures were developed considering applicable standards and guidance for a hospital setting, achievement of final clearance prescribed herein may not completely fulfill The Joint Commission requirements for hospital accreditation purposes. In addition, further restoration activities will be performed in most areas following clearance that may impact surfaces and materials and require further corrective actions (e.g., cleaning of construction dust and similar).

--- END OF WORK PLAN ---

[Servpro - Bay Medical - West Wing - Remediation Scope of Work (11-08-18) FINAL V1.2]