

MOLD DAMAGE ABATEMENT PLAN, Dated January 20, 2009

DECONTAMINATION LETTER, Dated January 22, 2009



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20 January 2009

Via E-Mail/Postal Service
CSmith@robinsmorton.com

Mr. Charles Smith
Robins & Morton
400 Shades Creek Parkway; Suite 200
Birmingham, Alabama 35209

Re: Mold Damage Abatement Plan for The Alabama Department of Public Health's Bio Safety Level 3 Laboratory on the campus of Auburn University Montgomery.

Dear Mr. Smith:

This letter report constitutes our abatement plan for the Bioterrorism BSL 3 Laboratory. This work product is the property of the Alabama State Health Department.

This plan is offered as guidance to perform mold damage abatement by qualified workers under proper supervision using accepted industry work practices. We assume workers and supervisors are familiar with IICRC (*Institute of Inspection Cleaning and Restoration Certification*) S520 *Standard and Reference Guide for Professional Mold Remediation*, and have had formal training regarding work practices, associated hazards, and personal protective equipment.

This plan is based on the assumption that the Bio Safety Level 3 Laboratory has been decontaminated according to Centers for Disease Control (CDC) approved protocol for the pathogenic organisms handled in this facility. We further assume that the Health Department has removed all personal effects and contents items not listed in the architect's demolition notes such as pictures, computers, books, phones, glassware, small lab apparatus, and so forth.

This plan covers only procedures for safe and effective removal of mold damaged building materials within the laboratory, and the final cleaning in preparation for repair and remodeling.

ENGINEERING CONTROLS

A containment zone must isolate the mold damaged modular Bio Safety Level 3 lab ("M-B" area on architect's plans) from the rest of the Department of Public Health laboratory during demolition and removal of mold damaged building materials and subsequent clean-up. Carefully follow IICRC S520 standard pages 76 to 79, regarding containment concept and construction requirements. A photo and description of full containment is also located on page 22 of the EPA publication *Mold Remediation in Schools and Public Buildings*, available at www.epa.gov/iaq. The contractor should be thoroughly familiar with these and other documents that establish the current industry standard in professional mold abatement/remediation.



Close doors separating the B11 Airlock from the B-17C airlock. Lock if possible and consistent with fire code. Establish containment by constructing an initial critical barrier using double layers of heavy (6 mil) plastic sheet sealed with tape. Use mechanical means like lathing and staples, or telescoping rods, to prevent these double-layer critical barriers from detaching. Remove the door and frame separating the B-17C airlock from the M-B2 clerical area. Construct a second barrier at this B17C airlock entrance to the BSL-3 lab. These barriers must isolate the remaining "B" laboratory areas from the mold damaged "M-B" areas. Overlapping flap doors of heavy plastic (6 mil) sheet must be constructed at the Autoclave Room M-B10 entrance and exit doors and the Utility Access M-B11 exit door, separating damaged areas from outdoors to control dust and debris transfer. Construct a flap door at the doorway separating the M-B9 airlock from the main M-B3 lab area to control dust and debris transfer. Any other openings to the contained work zone must be completely sealed using critical barriers of heavy plastic and duct tape. The M-B10 room may be used for donning and doffing PPE and other decontamination.

Establish and maintain negative pressure of a least 0.02 inches water gauge using a High Efficiency Particulate (HEPA) rated air filtration device ("AFD", commonly referred to as a negative air machine). Given approximately 1330 square feet of floor space in the BSL-3 lab and a ten foot roof deck we estimate a single 1200-1500 cfm air filtration device would be sufficient to provide the industry standard four air exchanges per hour. The HEPA rated air filtration device must exhaust outside the laboratory. This may most easily be accomplished via one of the Bio Safety cabinet exhaust penetrations. Seal around the HEPA exhaust duct using heavy fiberboard and duct tape or other means to create a positive seal. Monitor differential pressure at the critical barrier separating the B-17C airlock space from the rest of the laboratory complex using a recording micro-manometer. Retain printed or digital differential pressure log records.

Enter/exit the "M-B" area work zone through the M-B10 autoclave room exit at the rear of the laboratory. Remove bagged debris via the autoclave room doors. Do not transport bagged debris through occupied areas. Abatement activities in the M-B11 utility access room must obviously enter/exit through the only door

ISOLATION OF VENTILATION SYSTEM

The BSL-3 lab has its own HVAC system, separate from other areas of the building. The HVAC system must be shut down prior to containment system construction. This system will not operate during mold abatement activities. The HVAC ducts will be removed along with mold damaged ceiling panels and grid, therefore it will not be necessary to seal HVAC supply and return openings in this case. The air handler servicing the BSL-3 Lab is roof mounted. Seal the roof penetration beneath the unit as soon as main plenum (trunk) duct is removed. Provide an alternate temporary source of climate control as needed for worker comfort and to prevent damage to interior from temperature extremes, humidity and condensation.



PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE for establishing the containment barriers and negative pressure engineering controls, removing specialty items such as the security and paging systems, and other plumbing and electrical fixtures should include an N-95 dust mask, eye protection, and work gloves. We anticipate removal of the security system, and possibly safety shower, paging system, exit signs, and electrical raceway may require work by specialty trades after the containment is established by trained mold abatement workers. These specialty trades should wear an N-95 dust mask, gloves and eye protection and use care not to disturb mold damaged building materials (specifically wallboard, ceiling panels, and HVAC duct insulation).

PPE for removing and cleaning lockers, shower and toilet fixtures, lab casework, bio-safety cabinets and mold damaged wall and ceiling board with associated insulation should include an N-99 type (or more protective half mask or full-face) particulate respirator, Tyvek® type coveralls with hood, gloves, and eye protection, preferably goggles. Potentially high levels of airborne fungal material during demolition of wall and ceiling board make proper PPE selection and use extremely important. The Occupational Safety and Health Act, 29 CFR 1910.134, requires a respiratory protection program for employees using respirators under these conditions. Such a program includes, but is not limited to, medical clearance, employee training, and respirator fit testing. PPE for applying sealants to exterior sheathing (if needed) and final cleaning should include an N-99 or better particulate respirator and any other PPE appropriate for the sealants and disinfecting chemicals chosen. Follow cleaning chemicals and disinfectant manufacturer's recommendations for any additional PPE.

MOLD ABATEMENT SCOPE OF WORK

Additional drying necessary – Mold damage in this case is primarily due to humid outdoor air infiltration, and not liquid water intrusion, so no forced drying is necessary as part of this remediation. Note that the HVAC duct system is to be removed and replaced as part of this effort. A means of supplementary climate control should be provided during periods of intemperate weather to prevent damage from temperature extremes, high humidity, and condensation.

Materials to be removed – After containment barriers and engineering controls are established, security specialists and/or electricians may remove security system and cameras, security code panels, paging system speakers, exit signs, electrical raceway, and other specialty items with minimal disturbance to gypsum wallboard or ceiling tiles according to architects demo notes F, G, H and N. At that point trained mold abatement workers should cover and seal the Autoclave in M-B10 using double layers of heavy plastic sheet sealed with duct tape or similar to protect during demolition according to demo note J. Remove, clean, and store lockers, toilet fixtures and accessories, lab casework, and shelving per demo notes C, I, M, and O. Then detach and wrap Bio-Safety cabinets with heavy plastic sheet sealed with tape according to architects demo note



D. Remove doors and frames per demo note B. Remove view panel and frame in M-B1 per demo note L. Remove ceiling panels and grid. HVAC ducts and grilles, cove base, wallboard, and insulation per demo notes A, F, G and K. Contact Weston to inspect interior surface of exterior sheathing.

Areas to be cleaned and disinfected - HEPA vacuum and/or wet wipe and remove all fixtures items and furnishings (i.e. lockers, cabinets, fixtures, etc) from the laboratory prior to demolition of wall and ceilings. Discard any remaining contents items of nominal value if they have not already been removed (i.e. papers, calendars, files, etc). Following demolition of the ceiling tiles and frame and the cove base and wallboard with insulation, clean underlying metal framing structure such as studs, purlins, sill plates, ceiling deck and so on, by wet wiping and/or wire brushing under continuous HEPA vacuum. Soda or dry ice blasting are acceptable alternatives if available. Clean all horizontal surfaces remaining inside the laboratory by wet wiping using a mild biostatic cleaner on clean or disposable towels.

Materials to be replaced – Replace all items previously removed per demolition coded notes on architectural plans. This includes insulation, wallboard, HVAC ducts, ceiling grid and panels, lockers, cabinets, fixtures, etc., according to architectural construction coded notes 1.2,4,7,8,9, and 10.

Contaminated materials removal and disposal - Immediately bag and remove damaged building materials and debris as these materials are generated. Use heavy plastic (6 mil) bags. Twist ends and seal with duct tape. Since egress is via rear M-B10 door to outside, no double bagging or decontamination wiping of bag exteriors is required. Dumpster or skidder to handle bagged debris must be covered when not in use. Mold damaged building materials, used PPE and cleaning supplies should be disposed of in a municipal waste landfill.

WORKFLOW PLAN

1. Placard the Bio Safety Laboratory 3 (“M-B” area on architect’s plans) with mold abatement declaration and PPE/bio-warning. Use caution tape as appropriate. Tape and declarations should warn unauthorized parties against inadvertent entry to the containment area.
2. HVAC ducts will be removed during abatement, and system will not be operating to provide climate control. Supply an alternate, temporary source of climate control for worker comfort and to prevent damage due to extreme temperatures, condensation and humidity as needed.
3. Set up negative air pressure containment for the laboratory with a 1200-1500 cfm HEPA rated AFD according to details in the engineering controls section. Establish critical barriers and double flap doors at locations indicated using heavy plastic sheet according to industry practice and IICRC S520. Exhaust AFD outside building. We suggest

exhaust to one of the Bio Safety Cabinet exhaust vents in the laboratory ceiling. Supply a known source of filtered and conditioned makeup air. Avoid excessive negative pressure as this may draw air from undesirable areas such as the crawl space. Monitor and document work zone negative pressure relative to the rest of the building during each work shift using a recording differential micro-manometer.

4. Remove certain specialty items including security and paging systems, and possibly electrical items and certain plumbing fixtures according to demo notes F,G,H and N. Clean these items by HEPA vacuuming and/or wet wiping with mild biocide as appropriate. Protect and store for reinstallation. Use care not to disturb mold damaged wall and ceiling board or insulation.
5. Wrap/cover and protect the autoclave in M-B10 per demo note J.
6. Remove clean and store lockers, toilet fixtures and accessories, lab casework and shelving per demo notes C, I, . and O and construction coded note 7.
7. Detach, move, clean, wrap and seal bio-safety cabinets in heavy plastic sheet per demo note D.
8. Remove doors and frames per Demo note B. Remove interior window "view panel" and frame per demo note L. Note that the door and frame separating B17C Airlock from M-B2 clerical area was to be removed during initial containment barrier construction per Step 3 above and the engineering control section.
9. Remove and bag all mold damaged building materials including cove base, wallboard, ceiling panels and tiles, HVAC ducts, and insulation per demo notes A,F,G, and K. Note that the opening to the roof mounted air handler should be sealed with heavy plastic sheet and tape as soon as the main duct plenum is detached.

Use care and industry accepted techniques to remove mold damaged materials with minimal aerosol generation. Avoid sawing and other techniques that generate aerosols. Bag mold damaged debris immediately. Do not pile or otherwise stage to bag later. Use a HEPA rated vacuum to clean up dust and debris as soon as it is generated. Tracking through dust and debris complicates final clean-up and increases health risk. A "shop vacuum" is NOT acceptable! A shop-vac will not capture tiny particles like mold spores and Shop-vac use will substantially damage air quality and increase health risk!

10. Notify WESTON to inspect the work area following demolition of ceiling, wallboard and insulation to determine if there is any mold colonization on the interior surface of exterior sheathing. Exterior sheathing might be cleaned and sealed if sheathing is otherwise sound. Decayed sheathing might have to be replaced. Do not apply any opaque sealants prior to our inspection.
11. Remove any suspected visible fungal material from remaining structure or wall cavities by sanding and/or wire brushing under continuous HEPA vacuum. Studs, joists, window



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frames, and wall cavities might be effectively cleaned using biocide and ScotchBrite™ type "green pads". Soda or Dry ice blasting are acceptable alternatives if available.

12. Thoroughly HEPA vacuum and clean entire contained "M-B area" work zone. All horizontal surfaces should be wet wiped with mild cleaner/biocide. Using plenty of fresh toweling, and spray and wipe repeatedly. Microscopic settled fungal material is difficult to remove. Pay attention to crevices and details like window frames.
13. Perform final air polishing by re-circulating air through the AFD for at least 100 air volumes of the M-B lab. This should require about 24 hours. Set up fans and locate the AFD exhaust to ensure thorough mixing of the entire lab air volume.
14. Perform third party inspection to verify that all elements of the abatement plan have been implemented and that all areas inside containment are cleaned appropriately, sealed according to the specifications and dust free.
15. If owners desire, contact WESTON or other IAQ professionals to schedule post abatement "clearance" inspection and air and surface sampling for fungi. Shut down negative air polishing system at least twelve hours prior to this clearance inspection and sampling.
16. Remove engineering controls, including critical barriers, flap doors and AFD.

POST ABATEMENT SAMPLING AND INSPECTION

It is important for some third party verify that this plan was implemented, that all fixtures and furnishings are removed, cleaned, and stored appropriately, that all mold damaged building materials have been removed, and that the BSL-3 "M-B" lab area is clean and free of dust and debris. Architects have asked that we evaluate the inner surface of exterior sheathing to determine whether this can be cleaned and sealed or must be replaced per construction coded note 4. Contractor should coordinate with WESTON for these post-abatement inspections. Our contact information follows.



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CLOSING

We appreciate the opportunity to provide these mold remediation planning services to Robins and Morton and The Alabama Department of Public Health. If you have any questions, or if I can be of further assistance, please contact me at (334) 466-5644 or (334) 728-0252.

Sincerely,

WESTON SOLUTIONS. INC.

A handwritten signature in black ink that reads "Brian Benson". The signature is written in a cursive, flowing style.

Brian L. Benson, CIH
Principal Technical Manager

cc: Scott Burnett – sburnett@karlsberger.com



STATE OF ALABAMA
DEPARTMENT OF PUBLIC HEALTH
DONALD E. WILLIAMSON, M.D. • STATE HEALTH OFFICER

BUREAU OF CLINICAL LABORATORIES

January 22, 2009

To whom it may concern:

This correspondence is to provide information regarding the decontamination of the BSL3 laboratory at the Bureau of Clinical Laboratories since its decommissioning on September 11, 2008. The laboratory was decontaminated October 16, 2008, by spraying the room for sixty minutes with the disinfectant, CiDecon[®], using fogger machines. CiDecon[®] is a concentrated, phosphate-free germicidal detergent formulated for use on lab surfaces and equipment where a broad spectrum disinfectant is required. CiDecon[®] multi-phenolic formula is designed to clean, disinfect, and deodorize any washable, inanimate, non-porous surface in one easy step.

Feel free to contact us if there are questions regarding this process.

Sincerely,

A handwritten signature in cursive script that reads 'Sharon P. Massingale'.

Sharon P. Massingale, Ph.D., HCLD(ABB)
Bureau of Clinical Laboratories

SPM/VL