ASBESTOS

OPERATIONS and MAINTENANCE PROGRAM

1906 College Heights Boulevard
Bowling Green, Kentucky 42101

OBJECTIVE

ASBESTOS MANAGEMENT POLICY

It is the policy of Western Kentucky University (WKU) to comply with the regulations of the Commonwealth of Kentucky, the federal Occupational Safety and Health Administration, and the Environmental Protection Agency that pertain to asbestos in the work place and environment. All asbestos management or response actions in all properties owned or maintained by WKU involving training, analytical, consulting, design, removal, or disposal shall be approved by the WKU Environment, Health and Safety Department prior to the response being performed and shall adhere to all guidelines set forth by the WKU Asbestos Operations and Maintenance Program and all other applicable asbestos regulations.

The following document is an Asbestos Operations and Maintenance Program for effectively managing asbestos-containing building materials. The parameters of this program are to be implemented while conducting building cleaning, maintenance, renovation, demolition, and general day-to-day operations for all properties owned or maintained by Western Kentucky University. This program establishes specific guidelines and procedures that shall be followed when working in areas that contain known or presumed asbestos materials.

The purposes of the Asbestos Operations and Maintenance Program are to control fiber release, clean existing contamination, safely remove asbestos-containing materials when necessary, and to maintain asbestos-containing building material in a suitable condition. These goals shall be met by the utilization of an asbestos awareness training program, designating Departmental Asbestos Coordinators, implementing safe work practices, providing an Asbestos Management Request system, maintaining a record keeping system, posting warning labels and signs, assuring plans and specifications for new or renovated WKU buildings specify that no asbestos-containing materials are to be used in construction, and various other activities as defined within this document. Cooperation from all areas of Western Kentucky University is essential in making this an effective program.

The WKU Asbestos Operations and Maintenance Program is coordinated and maintained by the WKU Asbestos Program Coordinator and Liaison. All asbestos related correspondence, including but not limited to, plans and specifications, price contracts, requests for bids, notifications of abatement, demolition, or renovation, notices of violations, and/or any other documents or correspondences pertaining to all University asbestos related issues shall be directed through the WKU Asbestos Program Coordinator and Liaison concerning any asbestos related activities for all properties owned or maintained by WKU.

Please email all asbestos related correspondence, documents, comments, questions, suggestions, or concerns to the WKU Asbestos Program Coordinator and Liaison at:

WKU Asbestos Program Coordinator

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ASBESTOS MANAGEMENT PROGRAM

ABBREVIATIONS

For purposes of this Operations and Maintenance Program:

ACM - Asbestos-Containing Material

ACBM- Asbestos-Containing Building Material

AHERA - Asbestos Hazard Emergency Response Act

AMR - Asbestos Management Request

AOMP- Asbestos Operations and Maintenance Program

APC - WKU Asbestos Program Coordinator

APL- WKU Asbestos Program Liaison

CFR - Code of Federal Regulations

DAC - WKU Departmental Asbestos Coordinator

DAQ - Kentucky Division for Air Quality

DOT- Department of Transportation

EHS - WKU Environment, Health and Safety Department

EPA - Environmental Protection Agency

FR - Federal Register

f/cc - Fibers per Cubic Centimeter

HEPA- High-Efficiency Particulate Air

KRS - Kentucky Revised Statutes

NESHAP- National Emission Standards for Hazardous Air Pollutants

OSHA- Occupational Safety and Health Administration

PACM - Presumed Asbestos-Containing Material

PDC- WKU Planning, Design, and Construction Department

PM- WKU Project Manager

RWP- Recommended Work Practice

TSCA - Toxic Substances Control Act

TSI - Thermal System Insulation

TWA - Time-Weighted Average

WKU - Western Kentucky University

DEFINITIONS

For purposes of this Operations and Maintenance Program:

Accessible when referring to ACM means that the material is subject to disturbance by building occupants, custodial, or maintenance personnel in the course of their normal work activities.

Accredited or accreditation when referring to a person means that person is accredited in accordance with section 40 CFR Part 763, Appendix C to Subpart E, Asbestos Model Accreditation Plan.

Air erosion is the passage of air over friable ACM, which may result in release of asbestos fibers.

Asbestos means the asbestiform varieties of Chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonitegrunerite); anthophyllite; tremolite and actinolite.

Asbestos-containing material when referring to buildings means any material or product that contains more than 1 percent asbestos.

Asbestos-containing building material means surfacing ACM, thermal system insulation ACM, or miscellaneous ACM found in or on structural members or other parts of a building.

Asbestos debris means pieces of ACM identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

Asbestos Management Request is an online form used by Departmental Asbestos Coordinators and Project Managers for the foreseen management by the Asbestos Program Coordinator of suspect asbestos and asbestos-containing materials associated with demolition, maintenance, or renovation.

Asbestos Program Coordinator is the WKU representative that shall provide onsite implementation, coordination, management, and operations of the University's Asbestos Management Program.

Asbestos Program Liaison is the WKU representative appointed to provide notification of WKU renovation/demolition projects and act as a point-of-contact to the Kentucky Division for Air Quality.

Damaged friable miscellaneous ACM means friable miscellaneous ACM that has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be the separation of ACM into layers, or from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage, scrapes, gouges, or other signs of physical damage on the ACM.

Damaged friable surfacing ACM means friable surfacing ACM that has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be the separation of ACM into layers, or from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage, scrapes, gouges, or other signs of physical injury on the ACM.

Damaged or significantly damaged thermal system insulation ACM means thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water-stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACM in question may also indicate damage.

Departmental Asbestos Coordinator(s) is the WKU representative(s) that shall provide onsite implementation and coordination of the University's Asbestos Management Program to the Asbestos Program Coordinator, as it applies and pertains to their respective department or area of all properties owned or maintained by Western Kentucky University.

Encapsulation is the treatment of ACM with a material that surrounds or embeds asbestos fibers in an adhesive preventing fiber release, the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material binding its components together (penetrating encapsulant).

Enclosure means an airtight, impermeable, barrier around ACM to prevent the release of asbestos fibers into the air.

Fiber release episode means any uncontrolled or unintentional disturbance of ACM resulting in visible emission.

Friable is material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, including previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

High-efficiency particulate air refers to a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 microns in diameter or larger.

Homogeneous area means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

Miscellaneous ACM means miscellaneous material that is ACM, building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

Nonfriable means material which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

Operations and Maintenance Program is a program of work practices to maintain friable ACM in good condition, properly remove ACM, ensure clean-up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACM disturbance or damage.

Potential damage means circumstances in which:

- Friable ACM is in an area used by building occupants, including maintenance personnel, in the course of their normal activities.
- There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

Potential significant damage means circumstances in which:

- Friable ACM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.
- There are indications that there is a reasonable likelihood that the material or its covering will become significantly damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.
- The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or, under certain circumstances, vibration or air erosion.

Preventive measures mean actions taken to reduce disturbance of ACM or otherwise eliminate the reasonable likelihood of the material's becoming damaged or significantly damaged.

Project means any undertaking or plan of action that has the possibility of impact on building materials associated with demolition, construction, modification or renovation (ie. painting, carpet replacement, wall removal or additions, alterations to HVAC systems and electrical systems, etc.) of any size by a contractor, service worker or others providing work on buildings owned or maintained by WKU.

Project Manager is anyone responsible for demolition, construction, or renovation of any size project regardless of their job title (ie. painting, carpet replacement, whole building construction or renovation, wall removal or additions, alterations to HVAC and electrical systems, etc.).

Removal means the taking out or the stripping of substantially all ACM from a damaged area, a functional space, or a homogeneous area.

Repair means returning damaged ACM to an undamaged condition or to an intact state to prevent fiber release.

Response action means a method, including removal, encapsulation, enclosure, repair, or operations and maintenance that protect human health and the environment from friable ACM.

Routine maintenance area means an area, such as a boiler room or mechanical room, that is not normally frequented by the general public and in which maintenance employees or contract workers regularly conduct maintenance activities.

Significantly damaged friable miscellaneous ACM means damaged friable miscellaneous ACM where the damage is extensive and severe.

Significantly damaged friable surfacing ACM means damaged friable surfacing ACM in a functional space where the damage is extensive and severe.

Surfacing ACM means surfacing material that is ACM.

Surfacing material means material in a building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Thermal systems insulation means material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, water condensation, or for other purposes.

Thermal system insulation means thermal system insulation that is ACM.

Vibration means the periodic motion of friable ACM, which may result in the release of asbestos fibers.

Asbestos Management Personnel

Department of Environment, Health and Safety

Asbestos Program Coordinator

Laura Tomlin ~ Office 270-745-2236

Asbestos Program Liaisons

Primary – Laura Tomlin ~ Office 270-745-2236
Secondary – Sharmila Pradhan ~ Office 270-745-2054

Departmental Asbestos Coordinators

Agricultural Farm Complex

Primary – Joey Reynolds ~ Cell 270-991-5982

Facilities Management

Building Services - Judy Blankenship ~ Office 270-745-5822
Maintenance Services - Charles Harrison ~ Office 270-745-5821
Plant Operations - Dale Dyer ~ Office 270-745-6179

Housing and Residence Life

Primary - Pam West ~ Office 270-745-2100

Information Technology Division

Primary – Chris Roberts ~ Office 270-745-8918

Planning, Design & Construction

Primary - Ben Johnson ~ Office 270-745-2075
Secondary – Bryan Russell ~ Office 270-745-5818

Student Life Foundation

Primary - Donald Stoneburg ~ Office 270-796-3052

Telecommunications
Network & Computing Support

Primary – Tammi Beach ~ Office 270-745-6370

ASBESTOS OPERATIONS and MAINTENANCE PROGRAM

PURPOSE

This program is for the specific purpose of controlling and managing asbestos-containing material (ACM) at Western Kentucky University (WKU). Employees of the University and designated supervisors of outside employees whose work may involve existing ACM in properties owned or maintained by WKU shall be informed of the Asbestos Operations and Maintenance Program (AOMP) and the associated guidelines in the AOMP prior to commencement of work. Contract employers and employees are required to follow the guidelines contained herein as well. The AOMP may be viewed and obtained at the WKU Department of Environment, Health and Safety (EHS) web site:

Western Kentucky University Asbestos Operations and Maintenance Program

This AOMP provides a set of specific procedures for cleaning and controlling the release of asbestos fibers. There are special procedures implemented for building cleaning, maintenance, renovation, and general day-to-day operations that may involve ACM. It should be noted that the AOMP is an interim control of asbestos materials.

Proper training of personnel who participate in the AOMP is essential. The WKU Asbestos Program Liaison (APL) shall provide notification of all WKU maintenance, demolition, and renovation projects involving ACM, and act as a point-of-contact, to the Kentucky Division for Air Quality (DAQ). The Asbestos Program Coordinator (APC) shall provide onsite implementation, coordination, management, and daily operations of the WKU AOMP. The Departmental Asbestos Coordinator (DAC) shall assure onsite implementation, coordination, and participation of the AOMP as it applies and pertains to their respective department or area of all properties owned or maintained by WKU.

The AOMP includes provisions for dealing with each type of asbestos found in WKU facilities. These categories are:

- *Surfacing Material* - ACM sprayed or troweled on surfaces. This may include acoustical plaster on ceilings and spray applied fireproofing on structural members.
- *Thermal System Insulation* - ACM applied to pipes, boilers, tanks, and ducts to prevent heat loss or gain and/or water condensation.
- *Other Miscellaneous* - ACM floor tiles, ceiling tiles, wallboard, siding, textiles, packings, gaskets, adhesives, etc.

Materials found in the first two categories are of the most importance, these materials are usually more likely to become friable when disturbed, creating the possibility of releasing airborne fibers. There must be special precautions utilized during the handling of non-friable materials to prevent rendering them as friable. Non-friable materials may release fibers if sanded, drilled, sawed, pulverized, or otherwise manipulated from their binder. Strict adherence to this AOMP will ensure control of asbestos fiber.

The three basic functions of the University's AOMP are:

- To clean existing contamination and control future fiber release.
- To implement specific asbestos activities and procedures.
- To defer more permanent abatement action.

The elements of the University's AOMP include:

- Data assimilation and record keeping
- Training, notification and warning labels
- Respiratory protection and medical surveillance
- Asbestos Management Requests
- Special cleaning and work practices
- Asbestos removal and emergency response procedures
- Periodic surveillance

FEDERAL AND STATE REGULATIONS

Federal and state governments regulate ACM within the Commonwealth of Kentucky.

OSHA Standard 29 CFR 1910.1001 addresses asbestos occupational health impact, by specifying limitations of workers' exposure through engineering controls, protective equipment, monitoring, and training. The OSHA standard also provides requirements for the specifications and posting of warning signs, labels, and respiratory protection guidelines.

The Environmental Protection Agency (EPA) regulates the emission standard for asbestos (40 CFR Part 61, Subpart M) and addresses the requirements for the manufacturing, application, removal, and disposal of asbestos. The sections of the EPA regulations that pertain to the University are those that govern removal from maintenance, renovation, or demolition areas and the disposal of asbestos.

Kentucky KRS 401 KAR 58:025 adopts by reference the federal National Emission Standards for Hazardous Pollutants (NESHAP) regulation 40 CFR 61, Subpart M. It provides standards for commercial use of asbestos, demolition, and renovation of facilities, and waste disposal. It also serves as a basis for 401 KAR 58:040 to ensure that entities performing asbestos abatement in Kentucky are fully qualified. It requires that these entities be certified to perform asbestos abatement projects that are subject to 401 KAR 58:025 and establishes specific work practices.

Kentucky KRS 401 KAR 58:005 and 401 KAR 58:010 are based on federal Asbestos Hazard Emergency Response Act (AHERA) laws, which are different from the NESHAP-based regulations. 401 KAR 58:005 require accreditation of individuals performing work in public, commercial, and school buildings. 401 KAR 58:010, based on the federal AHERA, require that the location and condition of all the asbestos-containing building materials in school buildings be identified and a strategy for controlling the asbestos is provided. The WKU AOMP is based on an approved modified version of 401 KAR 58:010.

ASSIMILATION OF SURVEY DATA

WKU Asbestos Records Center maintains all asbestos activity documentation. Asbestos records are located and may be reviewed at the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046*. These records shall include but are not be limited to:

- Asbestos training records
- Asbestos building inspections
- Asbestos hazard prevention plans and specifications
- Asbestos Management Requests
- Asbestos abatement records

Locations of ACM are recorded for use by maintenance and custodial personnel, service workers or other parties of interest. The "WKU Known Asbestos Location List" is continually revised and provides readily available and current ACM location information and can be obtained at the WKU Department of Environment, Health and Safety web site:

Western Kentucky University Known Asbestos Location List

It shall be noted that particularly for renovation projects, asbestos survey results were obtained by a non-destructive manner. Other hidden unknown asbestos-containing materials may be exposed during demolition, renovation, and/or maintenance activities of areas not readily accessible without extensive damage to the building or component. If at any time during a project, suspect asbestos-containing materials not previously identified are encountered, do not disturb these materials. Contact your WKU Project Manager and/or the WKU Asbestos Program Coordinator.

In some instances, material shall be considered and listed on the "WKU Known Asbestos Location List" as presumed ACM, particularly gasket and roofing. Prior to the implementation of any maintenance, renovation or demolition activity involving WKU building components listed as presumed, the material shall be tested to prove the absence of asbestos. An online "Asbestos Management Request" (AMR) is provided for requesting all phases of assistance or support with all asbestos related issues pertaining to properties owned or operated by WKU. These online requests shall be completed by the Departmental Asbestos Coordinator for their respective department or area, and responded to by the WKU Asbestos Program Coordinator. The "Asbestos Management Request" shall be completed online at the WKU Department of Environment, Health and Safety web site:

Western Kentucky University Asbestos Management Request

LOCATION NOTIFICATION AND WARNING

The purpose of the ACM location notification and warning program is to inform WKU employees, building occupants, contractors, service workers, or others that may have potential contact with the ACM. If proper procedures are not followed during maintenance and renovation activities, ACM may be disturbed. WKU has a notification system that will effectively warn workers of ACM. This location notification serves two functions:

- It will alert affected personnel to the potential asbestos hazard in the buildings construction materials.
- It generates a broad involvement with personnel. Accidental disturbance is less likely to occur with location awareness.

All employees have the right to know and be aware of asbestos-containing materials in buildings. WKU employee notification shall be provided by, but not limited to, verbal communication, warning labels or signs, or the "WKU Known Asbestos Location List". The EPA Guide for Reducing Exposure to Asbestos shall be made available to all university employees. The "Guide for Reducing Exposure to Asbestos" is Appendix B of this document. Asbestos location information, verbal description and printed copy, shall be provided to WKU maintenance and custodial personnel utilizing the annual asbestos awareness training provided by the WKU Environment, Health and Safety Department.

Warning labels or signs shall be attached to asbestos-containing components or in routine maintenance areas such as boiler rooms, mechanical rooms, and crawlspaces. All labels or signs are to be displayed in readily visible locations and shall remain posted until ACM is removed. Not all areas where ACM is located will have posted warning labels or signs, these situations rely on the "WKU Known Asbestos Location List" as the location reference. An example of an asbestos warning label or sign commonly used in WKU buildings:

Some pipes are insulated with materials other than asbestos-containing products with ACM on the fittings only. It is not practical or feasible to label all fittings. Before proceeding with work always, check the most current "WKU Known Asbestos Location List" for the area of concern. Especially if building components are located in other than routine maintenance areas. Each warning label or sign location shall be checked periodically by EHS. Damaged or missing labels or signs shall be replaced during these inspections.

Contractors, service workers, or others not employed by WKU that may have the potential to disturb ACM at WKU shall be made aware of its presence prior to beginning work. This shall be accomplished with a joint effort utilizing the WKU Asbestos Program Coordinator along with the appropriate WKU Project Manager (PM) associated with the contractor, service worker or others providing work on WKU buildings that may have the potential to disturb ACM. The "Demolition and Renovation Contractors Asbestos Location Notification", shall be used for this purpose and is Appendix A of this document.

TRAINING

Awareness training shall be provided to all WKU maintenance and custodial staff that may work in any building that contains known or presumed ACM, whether or not they are

required to work directly with ACM. The WKU EHS provides AHERA style 2-hour asbestos awareness education to all new custodial, maintenance, or other interested employees within 60 days of employment and an annual refresher course for the duration of their employment at the University, educational sessions are held monthly to assure OSHA compliance. The WKU Asbestos Awareness Program shall be accomplished with a joint effort utilizing the WKU Asbestos Program Coordinator along with the workers designated WKU Departmental Asbestos Coordinator. An overview of the WKU "Asbestos Awareness Training" is Appendix C of this document. Asbestos awareness training shall include but not limited to:

- Information regarding asbestos and its various uses and forms.
- Information on the health effects associated with asbestos exposure.
- Locations of ACM identified throughout each building in which they may be assigned to work.
- Recognition of damage, deterioration, and delaminating of ACM and means to report such damage.
- Information regarding asbestos materials locations at WKU.
- Name and telephone number of the WKU Asbestos Program Coordinator.

All registrations for Asbestos awareness training at WKU shall be completed by the individual workers designated WKU Departmental Asbestos Coordinator utilizing an online registration system provided by the University EHS department. The WKU "Asbestos Awareness Training Program" description is readily available and registration can be completed at the WKU Department of Environment, Health and Safety web site:

WKU Environment, Health & Safety ~ Asbestos Awareness Training

Asbestos Awareness training may be presented in various specialized forms to accomplish awareness to the vast range of workers involved at the University. Training sessions may consist of verbal instruction, guest speakers, printed documents, pamphlets, video-graphics, or other means. Asbestos Awareness Training may consist of various combinations; all shall meet or exceed the AHERA and OSHA requirements along with explaining the WKU "Asbestos Management Program".

Upon completion of awareness training, each attending employee shall sign an acknowledgement indicating training participation and comprehension of the information presented. The "Certification of Receipt and Comprehension of AHERA 2-Hour Asbestos Awareness Training" is Appendix D of this document.

A records center maintains all relative asbestos training documentation. Asbestos training records are located and may be reviewed at the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046.*

WKU provides AHERA asbestos awareness training to staff with the intent of preventing activities that result in the unplanned unnecessary disturbance of ACM. Additional, OSHA mandated and approved, detailed training for the specialized task of maintaining and removing select non-friable miscellaneous ACM is provided to WKU workers that may be assigned to activities involving specific asbestos-containing materials.

In August 1994, OSHA published revised asbestos standards for materials commonly maintained at WKU by WKU workers. OSHA has determined that intact asbestos-containing resilient floor tile and properly trained WKU workers using the "Recommended Work

Practice" (RWP) for each operation can remove asbestos-containing vertical surface glue-dots at WKU under a "negative exposure assessment" in compliance with the revised standards. Automotive type brake inspection and servicing conducted by the WKU automotive mechanics utilize the "Wet Method" mandated by OSHA 29 CFR 1910.1001 (f)(d). The WKU "Asbestos-Containing Floor Tile and Mastic Removal" Appendix M, "Asbestos-Containing Brake Inspection and Servicing" Appendix O, and "Asbestos-Containing Vertical Surface Glue-dot Removal" Appendix P *Safe Operating Procedures* (SOP) are required to be utilized for these specific tasks and are Appendices of this document.

RESPIRATORY PROTECTION and MEDICAL SURVEILLANCE

OSHA 29 CFR 1926.1101 (c)(l), 1910.1001 and 1910.134 states that employees exposed to 0.1 f/cc of airborne asbestos shall be involved in a respiratory protection program. In the WKU AOMP, any employee with a significant potential for exposure to airborne asbestos shall be involved in a respiratory protection program. In accordance with the above-mentioned regulation, any employee who is exposed to at least 0.1 f/cc of asbestos for 30 or more calendar days per year or any employee required to wear a negative pressure (cartridge) respirator must be involved in a medical surveillance program. In the WKU AOMP, required use of negative pressure respirators mandates medical surveillance for these employees, not asbestos exposure above the permissible level stated above.

Workers participating in the WKU AOMP are thoroughly trained in asbestos awareness, and shall utilize safe work practices that assure airborne asbestos exposure below 0.1 f/cc as a time weighted average (TWA). Other factors in place that help ensure workers are not exposed to airborne asbestos above 0.1 f/cc time weighted average are:

- Minimal friable asbestos-containing surfacing material is in damaged condition; damaged ACM shall be promptly cleaned and repaired.
- All known damaged thermal system insulation shall be kept in good repair.
- No WKU employee shall knowingly be required, or allowed, to perform work activities that would cause exposure to asbestos fibers in excess of 0.1 f/cc as a time weighted average.

New Construction Exclusion

Federal regulation 40 CFR 763 Subpart E provides exclusions for new construction at WKU. Paragraph (7) states that, "An architect or project engineer responsible for the construction of a new … building built after October 12, 1988, or an accredited inspector signs a statement that no ACBM was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACBM was used as a building material for the building."

As of CY 2011, in order to meet this exclusion, a letter as defined in Appendix Q "New Construction Exclusion Letter" must accompany any new buildings constructed at WKU or similar letter or document to specify the building is asbestos-free.

ASBESTOS MANAGEMENT REQUEST
DEMOLITION, MAINTENANCE, or RENOVATION ACTIVITIES

If proper procedures are not followed during demolition, maintenance, and renovation activities, ACM may be disturbed and possibly raise levels of airborne asbestos. Workers are prohibited from conducting any work in a manner that may disturb ACM without proper training. A management system for demolition, maintenance, and renovation work at WKU is instituted to ensure proper procedures are employed whenever there is a possibility of disturbing ACM. To assure compliance with all regulations pertaining to the dangers associated with the disturbance of asbestos-containing materials, WKU EHS strongly recommends all demolition, maintenance, or renovation work activities be conducted utilizing the WKU Department of Facilities Management or WKU Planning, Design, and Construction for all project oversight. The AOMP includes provisions for each type of ACM that is present in buildings at WKU and shall be strictly adhered to for all properties owned or maintained by Western Kentucky University.

It is often one of the most difficult tasks to minimize inadvertent disruption of ACM during a work activity. To better control this situation at WKU, a system requiring all work that disturbs or has the potential to disturb ACM be documented by an online "Asbestos Management Request" prior to beginning the work. This AMR shall be completed by the designated Departmental Asbestos Coordinator for the worker anticipating the service work, allowing the Asbestos Program Coordinator sufficient time for completion of the required asbestos survey, hazard prevention plan, or abatement plan. The WKU Asbestos Program Coordinator shall review the AMR and direct, advise, mandate or provide guidance concerning the correct procedure required to manage or abate the ACM for that particular project or job. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure for controlling ACM during these actions. In addition to the initial AMR, in a case where the scope of work is revised during progression of the project, the Departmental Asbestos Coordinator shall contact the Asbestos Program Coordinator to ensure that previously unaffected asbestos-containing material in the work area is not disturbed.

Anyone at WKU whose job duties include or take upon themselves the demolition, construction, modification, or renovation (ie. painting, carpet replacement, wall removal or additions, alterations to HVAC systems and electrical systems, etc.) of WKU properties for any project regardless of their job title are considered a WKU Project Manager for purposes of this AOMP. All WKU Project Managers shall proceed as directed in the "Asbestos Management for Project Managers" Appendix E of this document prior to that activity.

EMERGENCY RESPONSE PROCEDURES

As long as ACM remains in a building, an asbestos fiber release episode may possibly occur. WKU workers shall report to their supervisor, DAC or APC the presence of suspected asbestos debris on the floor, water or physical damage to the ACM, or any other evidence of possible asbestos fiber release.

Asbestos fiber release episodes can occur during maintenance or renovation projects. If such an event should occur, workers shall leave the area and contact the Departmental Asbestos Coordinator with oversight of the affected area and/or the WKU Asbestos Program Coordinator immediately. The WKU APC shall make the determination of response action required to proceed safely. The WKU DAC for the work being performed shall assist, support, and comply with the procedure recommended by the APC for the duration of the response action. The APC shall make the determination for re-entry into the area of concern before any occupants or workers shall resume activities.

Minor Release Episodes such as a small section of asbestos-containing insulation (less than 3 linear feet) falls from a pipe or broken asbestos-containing ceiling tile (less than 3 square feet), shall be treated with standard wet cleaning. Before cleanup, the worker(s) shall report the incident to their supervisor, DAC or APC. The WKU APC or a person designated by the APC shall provide the determination and coordination of planned action. If the determination is made to clean the area utilizing WKU workers, the area shall be treated with the following wet method cleaning action:

- Trained workers shall thoroughly saturate the debris with amended water using a mister with a very fine spray wearing disposable gloves; the debris shall then be placed in a pre-labeled 6-mil asbestos disposal bag for disposal. This should be done immediately after finding the debris.
- The disposal of ACM shall be in a manner acceptable to all governmental and WKU regulations specified in this AOMP.
- The damaged ACM shall be repaired by a qualified asbestos abatement contractor with asbestos-free spackling, plaster, cement, insulation, or, sealed with latex paint or an encapsulant, or abated.
- HEPA vacuuming shall be required in carpeted areas.

Major Release Episodes are created when greater than 3 linear or square feet of ACM is dislodged or delaminated from its substrate. The worker(s) shall report the incident to their supervisor, DAC or APC. The WKU APC or a person designated by the APC shall provide the determination and coordination of planned action. The following procedure shall be used:

- The area shall be isolated as soon as possible after the ACM is discovered; the WKU APC shall be contacted immediately. The APC shall take appropriate actions, the areas can be sealed by doors, they shall be locked from the inside (escape corridors must remain in operation) with approved warning signs posted to prevent unauthorized personnel from entering the work area stating; **"DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA"**.
- The air-handling system shall be shut off or temporarily modified to prevent the distribution of asbestos fibers from the work site to other areas of the building. Doors, windows, and air registers shall be sealed with 6-mil plastic sheets and tape.
- Further response action for any major fiber release episode shall be designated by persons accredited for asbestos response actions and conducted by persons accredited to conduct asbestos response actions.

Each known asbestos fiber release occurrence shall be responded to, coordinated by, documented, and recorded by the WKU APC or a person designated by the APC. The "Asbestos Fiber Release Occurrence Report" for this purpose is Appendix F of this document.

If a fiber release occurrence is the direct result of work by an outside contractor or service worker, which had previously been made aware of the location of asbestos-containing material in the work area and signed Appendix A, a company representative shall submit an incident report to the WKU APC. The incident report must include a description of the incident, corrective actions to clean up the disturbance, and a pro-active plan to prevent future occurrences at WKU on any subsequent projects in which they may be awarded.

CLEANING PROCEDURES

Proper cleaning of asbestos contamination is one of the primary objectives of this AOMP if an asbestos fiber release occurs. All clean up of asbestos contamination or debris in all properties owned or maintained by WKU shall be performed by qualified trained workers for the specified work activity. The WKU APC or a person designated by the APC shall have oversight of all cleanup actions in all properties owned or maintained by WKU.

Dry brooms, mops, and cloths re-suspend asbestos fibers into the air and shall not be used for this purpose, it is essential that specialized cleaning procedures be mandated. Wet methods shall be the primary methods of cleaning. Utilizing wet cloths or mops will allow ACM to be cleaned while still not promoting dispersion of fibers into the air. High Efficiency Particulate Air (HEPA) vacuums equipped with special filters that trap asbestos fibers with up to 99.97% efficiency (for particles 0.3 microns or larger in diameter). HEPA vacuums shall be used for clean-up of asbestos contamination or debris in all properties owned or maintained by WKU as deemed necessary by the WKU APC or a person designated by the APC.

RECORDKEEPING

All written records relating to asbestos management discussed in this section shall be maintained, as required by applicable regulations, in the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046* for review, these include:

- The written AOMP itself, including approved work practices
- Asbestos hazard prevention plans and specifications
- Asbestos survey information
- Asbestos Management Requests
- Abatement specifications and records
- Asbestos training programs and records
- Asbestos Exposure Assessment
- Medical surveillance records
- Written respiratory protection program and records

ACM - TYPES OF MATERIALS

The AOMP shall deal with surfacing material that is sprayed or troweled on surfaces and includes acoustical plaster on ceilings and spray applied coatings. Thermal system insulation (TSI) shall include pipe insulation, boiler insulation, breeching, and duct insulation, as well as other forms of insulation. Miscellaneous materials include floor tiles, adhesives, ceiling tiles, gaskets and packing, cementitious materials, caulking and fireproofing compounds and materials.

Surfacing Material may be texture coats, stipple coats, or acoustic plasters typically used for ceilings and beams. Some of these products encapsulated with paint or other coatings may be considered non-friable in place and only become friable when disturbed. Other products in this group can be very soft and extremely friable.

Thermal System Insulation is insulation used on tanks or pipes and generally confined to crawl spaces, boiler rooms, and pipe tunnels but may be located in some classroom areas as well as corridors and restrooms. Pipe chases in walls and between restrooms have a high potential to house TSI that contains asbestos. Great care shall be exercised when dealing with these materials as their friability may be greater when disrupted or disturbed.

The WKU Asbestos Program Coordinator shall immediately be made aware of suspected hazard situations or potentially hazardous situations involving surfacing materials and TSI. The "Asbestos Management Request" system shall be strictly adhered to during demolition, maintenance, or renovation to avoid inadvertent disturbance of asbestos-containing materials during work on buildings owned or maintained by WKU.
Miscellaneous Materials for the most part are non-friable and require unique handling and removal to avoid making them friable. Breaking, drilling, sanding, scraping, burning, or grinding ACM shall be prohibited. All work activities that disrupt the location or create movement of miscellaneous ACM or floor tile shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid inadvertent disturbance. Typical custodial actions, including waxing of asbestos-containing flooring pose no problem when performed on a routine basis by custodial personnel. "Guidelines for Managing Asbestos-Containing Floor Tile in Place" is Appendix G of this document.

Asbestos-containing packings and gaskets are throughout our facilities and are usually non-friable, but may become friable if damaged or removed not fully intact. **Breaking, drilling, sanding, scraping, burning, or grinding packing and gasket materials shall be prohibited.** It is the University's intent to remove all asbestos packings and gaskets and replace them with non-asbestos material during routine and emergency maintenance repairs. Service work related to packings and gaskets shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid inadvertent disturbance.

Cementitious asbestos board is another common ACM used on WKU facilities. It may be found used as acoustical panels, flue pipes, wallboard, fascia, and the underside of eaves of some buildings or structures. It is non-friable and will remain as such but may become friable if damaged or removed not fully intact. **Breaking, drilling, sanding, scraping, burning, or grinding cementitious materials shall be prohibited.** Where cementitious products exist, caution shall be exercised not to break holes, hang pictures, or otherwise damage, or disturb these materials. Service work related to cementitious products shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid disturbance during work on buildings owned or maintained by WKU.

WORK PRACTICES for DEMOLITION, MAINTENANCE, RENOVATION, REMODELING or REDECORATING PROJECTS

Demolition, maintenance, or renovation of buildings or building system replacements can cause major disturbance of ACM. Demolishing buildings or structures, removing walls, replacing flooring, steam, heating, plumbing or air conditioning systems, etc. involve breaking, cutting, or otherwise disturbing ACM that may be present. Prior planned asbestos management or removal of ACM, by accredited asbestos personnel, shall be performed in these situations as required by NESHAP. If prior planned asbestos management or removal is not undertaken, the entire project shall be considered an asbestos removal project. All EPA, OSHA, and WKU required procedures and precautions for accredited asbestos management or removal shall be utilized on buildings owned or maintained by WKU.

To assure compliance with all regulations pertaining to the dangers associated with the disturbance of ACM, WKU EHS strongly recommends all demolition, maintenance, or renovation work activities be conducted utilizing the WKU Department of Facilities Management or WKU Planning, Design, and Construction for all project oversight. A key step in a project is utilizing the online "Asbestos Management Request" system in the planning stage of the project. This will aide with information such as the location and type of ACM that may be affected. Because of this, it is essential that the Asbestos Program Coordinator participate in all renovation project planning. To control this situation at WKU, a system requiring all work that disturbs or has the potential to disturb ACM be documented by an online "Asbestos Management Request" (AMR) prior to beginning the work. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure. Any asbestos containing materials identified in the proposed project which will be disturbed or have the potential to be disturbed must be removed by properly accredited personnel at the outset of the project. At no time shall asbestos containing materials be covered or concealed in any phase of a renovation project (i.e. new flooring installed over existing ACM floor coverings, additional pipe insulation over existing ACM pipe insulation, etc.).

Remodeling or redecorating implies less dramatic structural alteration. However, disturbance of ACM or materials contaminated with asbestos fibers is still possible. Remodeling or redecorating may involve direct contact with ACM when painting over or covering ACM, removing chalk or bulletin boards, etc. Precautions shall be taken to avoid disturbance or inadvertent disruption of ACM such as:

- Do not hang items from ACM, i.e. hanging pictures on asbestos-containing cementitious walls or spray applied surfacing material ceilings.
- Use caution breaking into cavities where unidentified ACM may exist.
- Do not break, drill, sand, scrape, burn, or grind ACM.

An online "Asbestos Management Request" shall be completed in the preplanning stages of all demolition, maintenance, renovation, remodeling or redecorating of buildings, and building system replacements. The AMR shall be completed by the designated Departmental Asbestos Coordinator for the worker(s) or contractor(s) anticipating the work activity, allowing the APC sufficient time for completion of the required asbestos survey, hazard prevention plan, or abatement plan. The WKU APC shall review the AMR and provide direction, advice, regulatory requirements, or guidance concerning the correct method required to manage or abate the ACM for that particular project or situation. "Asbestos Management Requests" are available online at the WKU EHS web site:

Western Kentucky University Asbestos Management Request

RESPONSE ACTIONS

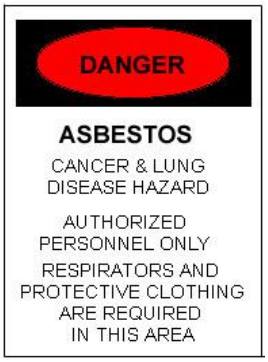
A response action is the project design, removal, encapsulation, enclosure, repair, or operations and maintenance that protect human health and the environment from friable ACM. This applies to all building activities involving asbestos, whether planned or episodic and includes emergency responses as well as all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU. *All asbestos-containing material response actions including project design, removal, encapsulation, enclosure, repair, or other ACM disturbance shall be performed by persons accredited per KRS 401 KAR 58:005 to conduct such response actions.*

At the conclusion of any response action, the WKU Asbestos Program Coordinator or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. If regulations require air sampling, or are determined by the APC to be conducted, a WKU approved air sampling firm shall collect air samples to monitor the air for clearance. Air sampling shall be in accordance with 40 CFR 763 Subpart E Section 763.90 (i)(6), which refers to the use of Phase Contrast Microscopy (PCM) for air clearance purposes.

A response action shall be deemed complete when it meets the applicable criteria set forth in 40 CFR 763 subpart E Section 763.90 with the exception of Sections (i)(3) and (4).

ABATEMENT WORK PRACTICES

All asbestos removal(s) or response action(s) shall be performed by an accredited asbestos abatement contractor utilizing accredited asbestos workers with current Commonwealth of Kentucky accreditations. WKU workers specifically trained within the prior 12 months for that specific ACM(s) work activity may be utilized as well. This shall be applicable for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.
All planned asbestos removal or response actions shall be conducted utilizing demarcated "regulated areas" and shall display appropriate warning signs. This sign shall be used for all asbestos activity regulated areas:



Asbestos Contractor Qualification Questionnaire shall be completed by all potential asbestos related contractors and approved by the WKU APC prior to bidding all proposed asbestos related demolition, maintenance, renovation, abatement, removal, and service work activities conducted on properties owned or maintained by WKU. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Asbestos Contractor Qualification Questionnaire" is Appendix H of this document.

Certificate of Worker Acknowledgement for Asbestos Abatement Work shall be completed by each asbestos worker prior to commencing work activities. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Certificate of Worker Acknowledgement for Asbestos Abatement Work" is Appendix I of this document.

Certificate of Worker Release for Asbestos Abatement Work shall be completed by each asbestos worker prior to commencing work activities. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Certificate of Worker Release for Asbestos Abatement Work" is Appendix J of this document.

General Wet Removal of Surfacing Material and other friable ACM shall be conducted utilizing negative pressure containment per KRS 401 KAR 58:040., and all applicable regulations including WKU EHS requirements by thoroughly wetting the ACM to be removed, prior to disturbance, by a fine mist of amended water. Saturate material sufficiently to wet the substrate without causing excess dripping. Allow the amended water to penetrate material thoroughly, spraying repeatedly during the work process to maintain a continuously wet condition. Mist work areas with amended water whenever necessary to reduce airborne asbestos fiber levels and remove saturated ACM in small sections. Do not allow material to dry out. As it is removed, simultaneously pack ACM while still wet into pre-labeled 6-mil asbestos disposal bags. Twist neck of bags, bend over, and seal with minimum three wraps of duct tape. Clean outside of bag and move to decontamination unit for additional disposal bagging. Waste materials, which do not fit into 6-mil disposal bags, shall be double wrapped with 6-mil polyethylene sheeting, sealed, and labeled as specified. Evacuate air from disposal bags and wraps with a HEPA filtered vacuum before sealing.

Removal of Asbestos-Containing Resilient Floor Tile and Adhesive for demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall utilize a "regulated area" and "wet methods" with strict adherence to all Federal, State, and Western Kentucky University regulations. University policy directs adhesive removal shall be included with all asbestos-containing floor tile removals and that all asbestos-containing floor tile adhesive be removed with floor tile removals regardless of the intent of the venture or project.

Before beginning work in the regulated area, air registers, diffusers, and any return air ducts located within the project area shall be sealed airtight. **The HVAC system shall be shut down in the regulated work area, critical barriers and a negative pressure atmosphere shall be established in the regulated work area.** Cover all windows, doors, openings, horizontal surfaces, porous vertical surfaces, fixtures and furniture, and any openings in the regulated work area with 6-mil poly sheeting.

All work related to the release and removal of asbestos-containing resilient floor tile shall be performed wet in a manner that will prevent the unnecessary release of asbestos fibers. Release of asbestos fibers may occur when tiles are broken or torn, pulverized, or abraded. Breaking of tiles into large pieces probably cannot be avoided, but shall be continuously controlled and held to a minimum. **Pulverizing or abrading shall not be permitted.**

Workers shall be properly trained and equipped with the necessary safety gear while working inside the regulated area. Workers shall be equipped with all proper respiratory protection and protective clothing required by WKU EHS. **Under no circumstances shall the floor tile be removed by sawing, sanding, grinding, other prohibited methods, or by unqualified workers.**

Disposable coveralls, including head covers and foot covers, shall be worn. Respiratory protection shall be, as a minimum, the minimum respiratory protection allowed by the Kentucky Department for Occupational Safety and Health and WKU Environment, Health and Safety Department.

Immediately before floor tile removal begins, the floor area to be removed shall be sprayed with amended water to reduce the potential for release of asbestos fibers from broken files. The floor surface shall be kept wet throughout removal operations but not allowed to puddle on the floor or run off to other areas, especially to the floor below. Resilient floor tiles shall be released from the floor surface in whole tiles, as much as possible, using straight scrapers in a manual operation. Should dust become visible at any time during the removal operation, the area shall be immediately misted with a garden type pump sprayer filled with amended water. Releasing of floor tiles shall cease until dust has been properly controlled.

Whole tiles and pieces broken during release from floor shall be swept using wetted brooms and scoop shovel in a manner that will not create dust. Removed materials shall be kept wet and immediately placed in pre-labeled 6-mil asbestos disposal bags or leak-tight drums located in the work area, which have been lined with two (2), pre-labeled 6-mil plastic asbestos disposal bags. When the specified double bags or leak-tight drums have been filled, the plastic bags shall be sealed airtight and/or the drum lid installed and properly sealed with tape.

Proper warning labels shall be affixed to each bag/drum in preparation for transportation and disposal as asbestos waste. No bags/drums shall be removed from the work area

without proper labels.

When all loose debris has been removed from the floor and placed in specified bags/drums, the floors shall be wet scraped with flat scrapers to remove accumulations of adhesive, which may also contain asbestos. Use amended water during scraping to reduce the concentration of asbestos fibers. After scraping, floors shall be HEPA vacuumed to remove all visible debris.

Removal of asbestos-containing and/or asbestos contaminated resilient floor tile adhesive for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall be conducted utilizing a "regulated area" and "wet methods" with strict adherence to all Federal, State, and local regulations.

Adhesive removal shall be accomplished with no-odor solvent type removers. A Material Safety Data Sheet (MSDS) for the remover shall be issued to, and the approval to use shall be determined by, the WKU APC or a person designated by the APC for any solvent type remover to be used on the project. The proposed solvent type remover shall not cause the waste material generated classified as hazardous waste under existing federal, state, or local regulation. Workers shall be equipped with proper respiratory protection and protective clothing. **Under no circumstances shall the adhesive be removed by sanding, grinding, shot blast, or other prohibited methods.**

Apply adhesive dissolving solvent, using manufacturer's instructions, to small areas at a time within the workspace. Scrape or mop dissolved adhesive from work area as required. Care must be taken to assure that no material leaks from the work area to areas below or splashed on walls and painted surfaces. Continue with this procedure until the adhesive has been removed from the entire work area. Repeat sequence as necessary until all visible adhesive has been removed from work area. At no time should solvent be allowed to pool or puddle in work area.

Removed adhesive waste materials shall be kept wet and immediately placed in pre-labeled 6-mil disposal bags or leak-tight drums located in the work area, which have been lined with two (2), 6-mil plastic asbestos disposal bags. When the specified double bags or leak-tight drums have been filled, the disposal bags shall be sealed airtight and/or the drum lid installed and properly sealed with duct tape. Proper warning labels shall be affixed to each bag/drum in preparation for transportation and disposal as asbestos waste. No bags/drums shall be removed from the work area without proper labels.

At the conclusion of the project, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Upon approval air curtained doorways, seals, warning signs, and barriers shall be removed and HVAC system shall be restored. Dispose of all asbestos related waste in a regulatory compliant method.

Removal of Asbestos-Containing Roofing Materials for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall be conducted utilizing a "regulated area" and "wet methods" with strict adherence to all Federal, State, local, and Western Kentucky University regulations.

Before beginning work, fresh air intakes or other air handling registers located within the regulated area shall be sealed with 6-mil polyethylene sheeting, taped, and made airtight or the HVAC system shut down. The Contractor shall demarcate the work area by utilizing banner tape and appropriate warning signs.

Workers shall be properly trained and equipped with the necessary safety gear while working inside the regulated area, and shall be equipped with all proper respiratory protection and protective clothing required by WKU EHS. **Under no circumstances shall the asbestos-containing roofing be removed by sawing, sanding, grinding, other prohibited methods, or unqualified workers.** Disposable coveralls, including head covers, shall be worn. Respiratory protection shall be, as a minimum, the minimum respiratory protection allowed by the Kentucky Department for Occupational Safety and Health and the WKU Environment, Health and Safety Department.

Work shall begin by applying a fine mist of amended water to the surface being abated. The roofing material shall be removed in whole pieces where possible. Roofing components shall be kept sufficiently wet during removal operations so that no visible emissions are released. Caution shall be exercised in the application of water to avoid any entry of water into the interior of the building.

Remove sections of roofing materials and place into two pre-labeled 6-mil disposal bags or wrap all waste in a minimum of two layers of 6-mil polyethylene sheeting for disposal purposes. All material shall be disposed of as ACM waste. Tape and seal bags or polyethylene sheeting completely, place appropriate warning labels on the wrapped waste packages as required by applicable regulations. Asbestos waste materials shall be lowered from the roof via lifts or cranes or shall be placed directly into a plastic lined dumpster via an enclosed chute.

Asbestos waste materials shall be loaded into an appropriate container for transportation. This may be a polyethylene lined dumpster or dump truck provided approval has been obtained from the disposal site. Roofing components shall be kept sufficiently wet during loading and disposal operations so that no visible emissions are released. Dispose of all asbestos related waste in a regulatory compliant method.

At the conclusion of the project, the WKU Asbestos Program Coordinator or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Upon approval air intakes or other air handling registers, warning signs, and barriers shall be removed and HVAC system shall be restored.

Gross Removal of Thermal System Insulation shall be conducted utilizing negative pressure containment per KRS 401 KAR 58:040., and all applicable regulations including WKU EHS requirements. All work shall be conducted by a Kentucky accredited abatement contractor utilizing accredited workers specifically trained in the removal procedure being utilized for the specific ACM(s) for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

Accredited workers shall spray with a mist of amended water to saturate material to substrate. Cut bands holding pre-formed TSI (if present), slit jacket at seams, remove blocks or sections and hand-place in a labeled 6-mil asbestos disposal bag, do not drop to floor. Remove any residue on pipe, tank, or fitting with stiff bristle nylon hand brush and amended water. In containment locations where TSI is removed from joints or elbows with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, all insulating materials shall be removed as ACM. KRS 401 KAR 58:040. shall be strictly adhered to for the duration of the project. Dispose of all asbestos related waste in a regulatory compliant method.

At the conclusion of the project, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Encapsulation of the substrate shall be performed with a lock-down or bridging encapsulant applied to all surfaces from which friable asbestos materials have been removed or edges remain. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the visual inspection have been met.

When the entire work area is dry, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed, clearance sampling shall commence as specified. Upon approval by the WKU APC or a person designated by the APC the negative pressure containment, warning signs, and barriers shall be removed and HVAC system shall be restored. Dispose of all asbestos related waste in a regulatory compliant method.

Removal of Thermal System Insulation by Glove-bag Procedure shall be conducted by a Kentucky accredited asbestos abatement contractor utilizing accredited workers for the removal of TSI. Glove bagging shall be permitted only where permitted under 29 CFR 1926.1101. Glove-bagging procedures shall be conducted in accordance with 29 CFR Part 1926 for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

All glove-bag procedures shall be performed in regulated areas that are isolated with critical barriers. Access to the glove-bag area shall be sealed with a curtain doorway. Clean up any gross debris, which may have accumulated on the floor using HEPA vacuum and/or wet cleaning procedures as described in this AOMP prior to commencing glove-bag. For wetting ACM, use amended water.

Place polyethylene sheeting directly under area where glove bagging is to occur. Prior to setting up glove-bag, place all necessary tools for removal and cleaning into glove-bag. Wrap glove-bag around the TSI to be removed, and seal top edge and sides airtight with duct tape. Insert nozzle of sprayer and hose of HEPA vacuum into glove-bag ports and seal each opening with tape.

Thoroughly wet ACM with amended wetting solution while carefully cutting material, continue spraying in seams wetting all material. Slowly allow the saturated material to fall to the bottom of the bag. Completely clean pipe or substrate with a nylon brush and amended water. Place tools in tool pouch of glove-bag and squeeze glove-bag below the

pouch, separating work portion from waste portion, twist, and seal with tape.

Start the connected HEPA vacuum, collapsing bag while removing all airborne material from the enclosure. Remove glove-bag by carefully cutting from substrate after bag has been properly evacuated with vacuum while supporting from the bottom. Hand-place in a pre-labeled 6-mil asbestos disposal bag, twist neck of bag, bend over, and seal with minimum three wraps of duct tape, do not drop to floor. Carefully place into another pre-labeled 6-mil asbestos disposal bag, twist neck of bag, bend over, and seal with minimum three wraps of duct tape. Clean outside of bag and dispose of in a regulatory compliant method. A lock-down encapsulant shall be applied to all surfaces from which friable asbestos materials have been removed. Dispose of all asbestos related waste in a regulatory compliant method.

Cleaning and Decontamination of all visible accumulation of debris shall be removed from areas where abatement has occurred. All surfaces of the removal area shall be wet-cleaned and HEPA vacuumed. All water from asbestos contaminated areas shall be filtered to 5 microns or less. Wet cleaning shall start by immersing a paper towel or rag into a bucket of amended water. Wring out excess liquid and fold into quarters, wipe surface once and refold to a fresh side. Proceed in this manner until all sides of paper towel or rag have been used. Do not re-immerse used rags or towels back in bucket to rinse out. If a used towel or rag is exposed to the cleaning solution in the bucket, empty bucket and refill. Dispose of paper towel or rag in a pre-labeled 6-mil asbestos disposal bag. Dispose of asbestos contaminated water as asbestos waste or filter to 5 microns or less prior to sanitary drain disposal, this water shall not be allowed in storm drains.

After cleaning, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. If the entire area is not visibly clean, the entire work area shall be re-cleaned. When the work area is inside a gross-removal enclosure and determined to be visibly clean, encapsulation of the substrate shall be performed with a lock-down encapsulant applied to all surfaces from which friable asbestos materials have been removed. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the visual inspection have been met. When the entire work area is dry, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed, clearance sampling shall commence as specified. Dispose of all asbestos related waste in a regulatory compliant method.

Encapsulation of Substrate shall be performed with a lock-down encapsulant applied to all surfaces from which friable asbestos materials have been removed. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the preliminary inspection have met the following requirements:

- Surfaces to be encapsulated have met the requirements for a visual inspection as specified.
- Airborne fiber concentration in the area below 0.01 f/cc measured by PCM.

Clearance Air Sampling if required, or determined by the WKU APC to be conducted, a firm approved by WKU EHS shall collect air samples to monitor the air for clearance. Air sampling shall be done in accordance with 40 CFR 763 Subpart E Section 763.90 (i)(6), referring to use of Phase Contrast Microscopy (PCM) for air clearance purposes.

Final air-clearance sampling shall be conducted after all barrier sheeting has been determined to be satisfactorily clean and a lock-down encapsulant has been applied and allowed sufficient time to dry. All warning signage, critical barriers, and containment polyethylene sheeting shall be left in place. Maintain pressure differential system in operation during collection of air samples to monitor the air for clearance.

Waste Disposal of all asbestos-containing waste generated from demolition, maintenance, renovation, abatement, removal, and service work activities conducted on properties owned or maintained by WKU shall be transported with the appropriate chain-of-custody and placed in an authorized site in accordance with regulatory requirements of NESHAP and applicable state and WKU guidelines and regulations.

All bagged or containerized waste shall be carefully loaded on trucks or trailers for transport. Exercise care before and during transport that no unauthorized persons have access to the material. The container used to store and/or transport asbestos-containing waste materials shall be of rigid construction, enclosed' and lockable. All containers shall be sealed inside with two (2) layers of 6-mil polyethylene. Label drums with same warning labels as asbestos disposal bags. Drums may be reused after decontamination if bags did not break. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this AOMP.

Advise the sanitary landfill operator, at least twenty-four hours in advance of transport, of the quantity of material to be delivered. At the burial site, assure proper warning signs are posted while bags or sealed drums are carefully offloaded from the truck. If bags or drums are broken or damaged, leave all damaged material in the truck and clean entire truck and contents using "Cleaning and Decontamination Procedures" in this AOMP. All debris will then be treated as contaminated waste and disposed as set forth in this section. Bags, boxes, barrels, or packages of ACM waste must be individually removed from transport container. Do not dump truck boxes or dumpsters.

Delivery of the waste shipment record to the WKU Asbestos Program Coordinator shall be the responsibility of the WKU designated competent person for the disposal or the abatement contractor responsible for the waste shipment. Disposal records shall be delivered to *Laura Tomlin, Western Kentucky University, Asbestos Program Coordinator, Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046* as required by 40 CFR 61.150. This requirement provides for the tracking of asbestos waste records prior to shipment off-site and the return of copies signed by the disposal site operator as required by regulation. Waste records shall be in the possession of the WKU APC within 30 days after delivery of waste to the landfill.

Following removal of ACM from any structural or mechanical system, or in the case of a minor fiber release episode, or clean-up of asbestos-containing debris all asbestos-containing waste generated shall be kept thoroughly wet with amended water. All asbestos-containing waste generated shall:

- Be kept wet and immediately placed in pre-labeled 6-mil asbestos disposal bags or leak-tight drums that have been lined with two (2) pre-labeled 6-mil plastic asbestos disposal bags. Waste materials that do not fit into 6-mil disposal bags shall be double wrapped with 6-mil polyethylene sheeting, sealed, and labeled as specified.
- Have all asbestos contaminated water from contaminated areas filtered to

5 microns or less.

- Have printed warning labels stating; ***"DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD"***.
- Have the exterior of the container clean of any debris.
- Be transported with a chain-of-custody that will include WKU as the generator, address of the specific pick-up site, the estimated quantity of the asbestos waste, types of containers used, and the destination of the waste. A copy of the form signed by the disposal transporter and site operator shall be returned to the WKU APC as required by applicable regulations.
- Be transported in vehicles having an enclosed carrying compartment. If mechanically sealed rigid containers are used an open vehicle with side panels and a tarpaulin covering the containers may be utilized upon approval. Labeling required by the DOT is mandatory for hauling all ACM.
- Transportation and disposal of bagged ACM waste without rigid containers will only be accepted after prior written approval from the Kentucky Division of Waste Management and the Western Kentucky University Asbestos Program Coordinator is granted to the ACM waste hauler.
- Not be transported in compactor vehicles.
- Require the chain of custody form be approved by the WKU APC to assure it is completed properly and the asbestos waste destination is an approved asbestos disposal site.
- Require a copy of the waste manifest be kept in the WKU asbestos records center as required by regulation.

Re-Establishing Occupancy of the Asbestos Response Action Area shall only occur following the approved completion of the asbestos response action. The Western Kentucky University Asbestos Program Coordinator or a person designated by the WKU APC shall approve the completion of all asbestos related response actions for all demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

In the event that air monitoring was conducted for the asbestos response action, all clearance air monitoring results shall be documented demonstrating no more than 0.01 f/cc of airborne asbestos in the asbestos response work area. Following satisfactory clearance of the work area, remaining polyethylene barriers shall be removed and disposed of as contaminated waste.

Barriers and signs shall only be removed after acceptance and final inspection, by the WKU Asbestos Program Coordinator or a person designated by the APC, of the area where the action was conducted to determine whether all action has been properly completed.

Laura Tomlin ~ 270-745-2236
Asbestos Program Coordinator
Environment, Health and Safety Department
Western Kentucky University
Revised August 8, 2011

APPENDICES

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APPENDIX A

Demolition and Renovation Contractors Asbestos Location Notification

All contractors and subcontractors under direct contract with the University shall complete this form prior to beginning WKU projects.

All general and trade contractors under direct contract with WKU shall assume responsibility and liability for their respective subcontractors pertaining to all asbestos regulations while working on WKU owned or operated properties.

Name of Facility or Project: _____

Name of Contractor: _____

Some materials in this building and/or work site contain asbestos, a naturally occurring family of fibrous minerals, which for decades was widely used in many interior and exterior building materials. Asbestos is closely regulated because airborne asbestos fibers may pose a serious health hazard, and proper procedures must be followed to prevent exposure. Airborne asbestos fibers may be released when asbestos-containing material is improperly removed, sawed, cut, sanded, drilled, or otherwise disturbed.

Your WKU Project Manager shall notify you, the contractor, of the location(s) of all known asbestos-containing material(s) prior to beginning work. The work you will be performing may be around but not including asbestos-containing materials. Do not inadvertently disturb any asbestos-containing materials.

Strict compliance of the following are required when working on University properties:

- ***Consult with your Project Manager or the WKU Asbestos Program Coordinator concerning asbestos locations and concerns in your respective work area prior to beginning and during all work.***
- ***Do not attempt the disturbance of walls, cavities, chases, components, tunnels or other not readily assessable areas without first inquiring of the concerns of unknown or hidden asbestos containing materials that may be uncovered or released from these areas due to your actions or neglect.***
- ***Do not disturb pipe, joint, fitting, valve, tank insulating or gasket materials without prior approval from either your WKU Project Manager or the WKU Asbestos Management Coordinator.***
- ***Do not remove, disturb, or damage any building materials without WKU Project Manager approval.***
- ***Do not remove, drill, sand, cut or grind floor tiles, gaskets or other resilient materials unless you have been specifically instructed to do so and are positive they contain no asbestos.***
- ***Do not damage floor tile while moving furniture, equipment, tools, or other objects.***
- ***Do not climb on or lean ladders, equipment, or tools on insulated pipes, tanks, or equipment.***

Should you suspect that you, your workers, or others have disturbed asbestos-containing material, stop work immediately, leave the area, and inform your WKU Project Manager at once. Do not return to the area or continue work until you have specific instructions to do so by your WKU Project Manager.

Be advised that any employee safety training, which may be required by OSHA or otherwise, including required asbestos awareness training, is the responsibility of you, the contractor. WKU is neither responsible nor liable for contractor non-compliance nor disregard with the above applicable regulations.

Please acknowledge your understanding of this notification of asbestos-containing material(s) located in or near your project work area and your agreement to comply with the requirements of this notification.

Contractors Representative: _____
Print *Signature* *Date*

WKU Project Manager: _____
Print *Date*

Note: The Project Manager shall make certain this completed notification is provided to the WKU Asbestos Program Coordinator, prior to the project, by all contractors and/or subcontractors performing work on WKU properties.

WKU Asbestos Program Coordinator: _____
Print *Date*

Revised 9/2/2010

APPENDIX B

Guide for Reducing Exposure to Asbestos

Purpose: Your building(s) may contain materials that contain asbestos fiber that could be released into the air when disturbed. The "WKU Master Asbestos Location List" shall be consulted to determine the asbestos locations in your building(s). Breathing asbestos fibers is dangerous; Western Kentucky University (WKU) provides AHERA 2-Hour Asbestos Awareness training to avoid these exposures. *This fact sheet and guideline tells how to reduce exposure to asbestos fibers while working, please follow it exactly.*

⚠ NOTE!

All asbestos related clean-up, by university workers, shall have written authorization from the WKU Asbestos Program Coordinator prior to the anticipated work activity.

Protecting you from Asbestos: Some of the buildings materials in University owned and operated buildings contain *friable* asbestos. *Friable* asbestos-containing materials crumble easily and release fibers into the air. Breathing these fibers could cause cancer and other diseases. The more asbestos you breathe, the greater your chances are of getting a disease. You can take precautions that will reduce or eliminate the risk of being exposed to asbestos. If directed to do so, these *"Recommended Work Practices"* and *"Wet Methods"* shall be used when cleaning near asbestos containing materials with visible dust or debris present in all properties owned or maintained by Western Kentucky University:

- ☑ *Ask your supervisor where asbestos-containing materials are in your building(s), refer to the most recent WKU Master Asbestos Location List, or directly consult with the University Asbestos Program Coordinator.* Do not touch or disturb friable asbestos-containing materials. If you must handle non-friable asbestos-containing materials, first lightly spray it with amended water. Wet asbestos-containing materials will not release as many fibers.

- ☑ Even if *friable* asbestos-containing materials are not disturbed, they could release asbestos fibers, which will fall slowly to the floor. If you are cleaning in areas that contain these materials, do not use a dry broom, it will stir the fibers into the air. Do not use a vacuum cleaner unless it is equipped with a High Efficiency Particulate Air (HEPA) filter. The fibers can pass through an ordinary vacuum cleaner and out into the room.

- ☑ *When cleaning in areas that contain friable asbestos-containing materials use dampened mops and dust cloths, never dry sweep, dry mop, or dry dust.*

- ☑ Dampened mops and dust cloths will hold the fibers much better than dry mops and dust cloths, and will reduce the number of fibers put back into the air. It is best to use mops with disposable heads and to throw away the mop head after use. Otherwise, fibers will be released as the mop dries. Use either lightly dampened mops and cloths or vacuum with a High Efficiency Particulate Air (HEPA) filter to clean areas where wet mopping cannot be used, such as carpeting or hardwood floors.

- ☑ Clean table and chairs in the area with damp cloths. Do not dust with brushes or with dry cloths, and do not vacuum. Place debris, used mop heads and cloths in a pre-labeled asbestos disposal bag while they are still wet. Seal the bag and give to your supervisor for disposal in a regulatory compliant method.

Note: *All clean-up of presumed or confirmed asbestos-containing materials, dust and/or debris in all properties owned or maintained by WKU shall be reported by the workers designated Departmental*

Asbestos Coordinator to the WKU Asbestos Program Coordinator (APC) who shall provide approval prior to the clean-up. Qualified trained workers who comply with the WKU Asbestos Operations and Maintenance Program shall only perform asbestos related clean-up activities. The WKU APC or a person designated by the APC shall have oversight of all clean-up actions in all properties owned or maintained by WKU.

A list of important points to remember:

- **<u>Do not handle or disturb *friable* asbestos-containing materials.</u>**
- If you must handle *non-friable* asbestos-containing materials, wet them first.
- If asbestos must be disturbed (for example, to repair a light), see your supervisor before starting work for approval. If the determination is to proceed follow these work practices:
    - *<u>Make sure, only persons who are necessary for the job are in the area and they are fully trained for the anticipated asbestos disturbance.</u>*
    - Place a plastic drop cloth below the work area.
    - Spray asbestos-containing materials with water before you disturb it.
    - After the job, clean all the ladders and tools you used with a wet cloth.
    - Roll up the drop cloth carefully; put it in a pre-labeled asbestos disposal bag.
    - Clean the floor below the work area with a wet mop.
    - Put the mop head and the cloth used to clean the ladders in the disposal bag while they are still wet, seal the bag, and give it to your supervisor for disposal in a regulatory compliant method.

If you desire additional asbestos information, please ask your supervisor, your designated Departmental Asbestos Coordinator, or the Western Kentucky University Asbestos Program Coordinator at the Environment, Health and Safety Department, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046, 745-2236.

⚠ Warning!

***The completion of Asbestos Awareness Training allows you to safely clean-up asbestos dust and debris,* it <u>does not</u> authorize you to disturb asbestos containing material (ACM) by such tasks as drilling, sanding, cutting, chipping, or otherwise handling an ACM that is not intact or will not be kept intact.**

This document contains reproductions of portion of EPA Form 7730-2 (6-82)

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APPENDIX C

ASBESTOS AWARENESS TRAINING SUMMARY

Purpose: The goal of the asbestos awareness program is to inform Western Kentucky University employees about the potential hazards associated with the presence of asbestos containing material (ACM) in properties owned or maintained by the University. The major objectives of the program are to provide the participants with the ability to identify the presence and location of ACM at their facility; recognize potentially hazardous situations involving ACM; avoid and minimize disturbance of ACM through proper methods and work practices; contact appropriate personnel and follow established procedures when asbestos related concerns or emergencies arise. The training is a modified version of the Asbestos Hazard Emergency Response Act (AHERA) based on the requirements set forth in 40 CFR 763.92(a), OSHA 29 CFR 1926.1101, 401 KAR 58:005, 401 KAR 58:025, and University specific guidelines. The major topics it will cover include:

AWARENESS TRAINING:

- ☑ What asbestos is?
- ☑ What it can do to you?
- ☑ Where asbestos can be found?
- ☑ How it does what it can do?
- ☑ How to adequately protect yourself?
- ☑ What the laws are about asbestos?

Asbestos is:

- Mineral:
  - Mined in Canada, USA, and Africa
  - Asbestos is a crystal mineral structure
- Types:
  - Chrysotile (95%) - serpentine
  - Amosite (4.5%) - amphibole
  - Crocidolite (<1%)
  - Friable - easily crumbled with your hand
  - Non-friable - hard and not readily released into the atmosphere
- Uses:
  - Heat insulation (including gaskets)
  - Fire retardant
  - Acoustical insulation
  - Brake shoes
  - Binding material (vinyl tile, cementitious board)

- Where it may be found:
  - Sprayed on beams or ceiling (concrete or steel decks)
  - Found on the following types of heat equipment:
  - Pipes
  - Boilers
  - Tanks
  - Mechanical equipment

- Appearance:
  - Fibrous - not the white powder
  - "Aircell" - corrugated asbestos and cellulose
  - "Mag" - white hard insulation, usually pre-formed on steam lines
  - "Blue mud" - gray hard material usually used on joints and fittings
  - "Transite" - cementitious board or panel

Diseases are:

- How Asbestos Causes Disease:
  - Actual fibers in air:
    - Fibers are very small
    - Can remain suspended
    - Crystal structure lets it get smaller and smaller
  - Breathe into lungs
  - Lungs cannot get rid of asbestos because fibers do not deteriorate

- Smoking and Asbestos:
  - Smoking increases risk very much

- Asbestosis:
  - Debilitating lung disease
  - Usually requires long term exposure to high levels of asbestos

- Cancer:
  - Mesothelioma
  - Lung cancer
  - Certain level of susceptibility

- ***Exposure is Necessary Before Risk is High!!***
  - Asbestos is like an insulated electrical wire
  - Exposure must be to the "bare" substance to have a potential for disease
  - Term of exposure increases risk
  - Type of asbestos is a factor

⚠ Warning!

Do not sand, dry sweep, dry scrape, drill, saw, bead-blast, mechanically chip, or pulverize asbestos containing building materials.

Laws Governing Asbestos is:

- OSHA (1926.1101 Regulation):

    - Employee Protection during asbestos abatement or in asbestos atmosphere
    - Several aspects of protection:
        - Exposure standard - 0.1 f/cc
        - Respiratory protection:
            - ✓ Not required by OSHA until fiber concentration equals the standard
            - ✓ Levels of protection based upon exposure potential
    - Medical surveillance of workers exposed to action level at least 30 days annually
    - Personal exposure air monitoring during removal activity

- EPA - Air Pollution Control District:
    - Has jurisdiction during abatement
    - Regulatory limit:
        - Proper disposal
        - Proper notification
        - No visible emissions
    - Typically inspect project during abatement:
        - Routinely make final inspections after completion

- Division of Waste Management:
    - Control disposal of asbestos waste
    - Asbestos is not classified as a "hazardous" waste:
        - Defined as "special" waste

- Requires certain special handling techniques:
    - Must be wetted
    - Must be sealed in plastic labeled bag
    - Pre-labeled disposable bag must be in an air tight, rigid container

- Landfill must be approved to accept asbestos waste:
    - Waste goes to a special part of the landfill

Locations of Asbestos Containing Materials in WKU Buildings:

- Areas that have ACBM or presumed ACBM

- Areas that have readily inaccessible ACBM

Recognition of Damage, Deterioration, and Delamination of ACBM:

- What to look for:
    - Deterioration
    - Physical damage
    - Water damage
    - Activity or vibration
    - Exposure potential
    - Access to material

- What to do and what not to do if you find it

- Minor release episode

- Major release episode

- Who is, and how to contact the WKU Asbestos Program Coordinator

APPENDIX D

CERTIFICATION OF RECEIPT AND COMPREHENSION
AHERA 2-HOUR ASBESTOS AWARENESS TRAINING

~ WKU MAINTENANCE, CUSTODIAL, AND CONSTRUCTION PERSONNEL ~

My signature on this form indicates I have received asbestos awareness training as required by OSHA and the University's Asbestos Management Policy. This training was conducted by the University's Department of Environmental Health & Safety in the form of an outlined program of at least two hours duration. It included instruction, open discussion and a video covering all aspects of asbestos awareness. I received subject related handouts coupled with an explanation of where the WKU Master Asbestos Location List is located on the University website and an explanation of the University's Asbestos Management Program followed by an examination and review.

I was given an opportunity to ask questions concerning information provided during this training session about the location(s) of asbestos containing material(s) in my building(s) and about the various components of the University's Asbestos Management Program, including my responsibilities as an employee. I understand the information and training I received today, where information about the locations of asbestos-containing material(s) are in my building(s), and given contact information for the WKU Asbestos Coordinator if I need further information to perform my work using correct asbestos related work practices at the University.

I understand this awareness training requires an annual refresher attendance for the duration of my employment at the University. I agree to abide by the University's Asbestos Management Operations and Maintenance Program and by the training I received today to the best of my ability.

NAME (please print)	SIGNATURE
DEPARTMENT/MANAGER/SUPERVISOR	DATE
ASBESTOS PROGRAM TRAINER(s)	SIGNATURE(s)

NOTE: The completion of Asbestos Awareness Training does not authorize you to disturb asbestos containing material (ACM) by such tasks as drilling, sanding, cutting, chipping or otherwise handling an ACM that is not intact or will not be kept intact.

Revised 9/2/2010

APPENDIX E

Asbestos Management Guide for Project Managers

Purpose. This guide has been provided to assist University Project Managers with the Western Kentucky University Asbestos Operations & Maintenance Program.

All asbestos work activities, management or response, for all properties owned or maintained by Western Kentucky University (WKU) involving inspection, analytical, consulting, management, removal, or disposal shall be approved by the University's Department of Environment, Health & Safety (EHS), Division of Asbestos Management, prior to the response being planned, designed, or performed. Asbestos work activities shall adhere to the guidelines set forth in the WKU Asbestos Operations and Maintenance Program and all applicable asbestos regulations and work practices that may apply.

If proper procedures are not followed during demolition and renovation activities, asbestos-containing material (ACM) may be disturbed and possibly raise levels of airborne asbestos. All workers are prohibited from conducting any work in a manner that may disturb ACM without proper training. This "Asbestos Management Guide for Project Managers" intention is to ensure proper procedures are engaged whenever there is a possibility of disturbing ACM during demolition and renovation work and is but a component of the WKU Asbestos Operations and Maintenance Program, not an all-inclusive guide. The WKU Asbestos Operations and Maintenance Program includes provisions to direct each type of asbestos work activity anticipated during projects, and shall be strictly adhered to for all properties owned or maintained by the University.

Anyone at WKU whose job duties include, or take upon themselves, the role of undertaking demolition, construction, modification, or renovation of any project (ie. painting, carpet replacement, wall removal or additions, alterations to HVAC systems and electrical systems, etc.) regardless of their job title are considered a WKU Project Manager (PM), for purposes of this Asbestos Operations and Maintenance Program. WKU Project Managers shall proceed as outlined in this procedure prior to the inception of that activity conducted on properties owned or maintained by WKU and shall strictly adhere to the WKU Asbestos Operations and Maintenance Program and this procedure for controlling ACM during these actions.

Asbestos Management. It is often one of the most difficult tasks to minimize inadvertent disruption of ACM during project work activities. To better control this situation at WKU, a system requiring all work activity that disturbs or has the potential to disturb ACM be documented by an online "Asbestos Management Request" prior to beginning the work.

This Asbestos Management Request shall be completed by the WKU Project Manager proposing the work activity prior to starting the project, the WKU Asbestos Program Coordinator shall review the Asbestos Management Request and direct, advise, mandate or provide guidance concerning the correct procedure required to manage or abate the ACM for that particular project. The designated WKU Departmental Asbestos Coordinator for the PM shall be copied on all correspondence concerning the Asbestos Management Request until completion of the proposed project. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure for controlling ACM.
The key step in a proposed project is utilizing the online "Asbestos Management Request" system in the pre-planning stage of the project to initiate an asbestos survey. This will aide

with information such as the location and type of ACM that may be affected. Because of this, it is essential that the WKU Asbestos Program Coordinator participate in all project planning. To control this situation during projects at WKU, a system requiring all work activity that disturbs or has the potential to disturb ACM be documented by an online Asbestos Management Request prior to beginning the project. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure. The WKU Asbestos Program Coordinator shall review the Asbestos Management Request and provide direction, advice, regulatory requirements, or guidance concerning the correct method required to manage or abate the ACM for that particular project or circumstance. The WKU "Asbestos Management Request" is available online at the WKU EHS web site:

WKU Asbestos Management Request

The WKU Asbestos Program Coordinator shall be given ample time to review the Asbestos Management Request along with available project drawings and specifications in order to determine whether ACBM may potentially be impacted. Asbestos sampling and analysis work has been conducted, and/or is ongoing, for facilities owned or maintained by WKU. The WKU Asbestos Program Coordinator shall search the "Asbestos Building File Archive" for relevant asbestos information; any information retrieved shall be reviewed for integrity and forwarded to the appropriate PM along with the recommended response action to proceed.

In some instances, additional analytical sampling is required to verify the previous asbestos survey. For construction, renovation, and other projects where no previous sampling data is available, an asbestos survey and hazard assessment is required. Such a survey involves collection of representative bulk samples such that various materials may be classified as ACM or non-ACM. The Asbestos Program Coordinator shall make the determination pertaining to the survey being conducted utilizing EHS means or contract services.

The Asbestos Program Coordinator shall contact the PM where no previous, or an insufficient amount of, sampling data is available for their project and provide direction, advice, regulatory requirements or guidance concerning the correct action to manage the asbestos located in the projects scope of work. If the determination is to rely on contract services to provide the asbestos survey the Asbestos Program Coordinator shall provide a listing of licensed and accredited contractors approved for asbestos work activities on buildings owned or maintained by WKU. The "Approved Asbestos Contractor List" appendix L of the WKU Asbestos Operations and Maintenance Program shall be referenced for all asbestos work activity providers, current price contract vendors shall be used if specified.

The WKU Project manager shall solicit bids for all asbestos work activities pertaining to the asbestos survey for their project and serve as the "point of contact" for that contractor, technical oversight shall be provided by the Asbestos Program Coordinator to guide the PM. All survey results shall be provided to the Asbestos Program Coordinator by the asbestos service provider. All asbestos sampling activity costs associated with the project are the responsibility of the project, a purchase order for these costs shall be provided by the PM prior to contracting such activities.

Worker Notification of Asbestos Locations. *All WKU contractors, employees of contractors, service workers, or others not employed by WKU have the right to know and be aware of asbestos-containing materials in buildings or work areas. Contractors, service workers, or others not employed by WKU that may have the potential to disturb ACM during their contracted work activities shall be made aware of its presence prior to beginning work.*
All contractors and/or subcontractors shall be notified of the locations of asbestos-containing building materials for the project prior to beginning work and that the work may be around

but not including asbestos-containing material. The "Demolition and Renovation Contractors Asbestos Location Notification" Appendix A of the WKU Asbestos Operations and Maintenance Program shall be utilized for this OSHA requirement. The applicable WKU Departmental Asbestos Coordinator and Project Manager for the project shall make certain this completed notification is provided to the WKU Asbestos Program Coordinator, prior to starting the project, for all contractors and/or subcontractors performing work on properties owned or maintained by the University.

This "right-to-know" notification shall be accomplished utilizing the appropriate WKU Designated Asbestos Coordinator and PM associated with the contractor, service worker or others providing work on WKU projects that may have the potential to disturb ACM, the Asbestos Program Coordinator or a person designated by the Asbestos Program Coordinator shall assist with providing this information. As the legal "Building Owner" WKU may be liable for all environmentally related incidences regardless of contractor negligence. Locations of ACBM, confirmed and presumed, are recorded for use by maintenance and custodial personnel, service workers or other parties of interest. The "WKU Master Asbestos Location List" is continually revised and can be obtained at the WKU Department of Environmental Health and web site:

WKU Master Asbestos Location List

Demolition, maintenance, or renovation of buildings or building system replacements can cause major disturbance of ACM. Demolishing buildings or structures, removing walls, replacing flooring, steam, heating, plumbing or air conditioning systems, etc. involve breaking, cutting, or otherwise disturbing ACM that may be present. Prior planned asbestos management or removal of ACM, by accredited asbestos personnel, shall be performed in these situations as required by NESHAP. If prior planned asbestos management or removal is not undertaken, the entire project shall be considered equivalent to an asbestos removal project. All procedures and precautions for accredited asbestos management or removal required by EPA, OSHA, and the WKU Asbestos Management Program shall be utilized.

In order to avoid delaying general demolition, maintenance, or renovation construction, it is highly recommended that asbestos-related phases of projects (survey, and management or abatement plan) be scheduled as soon as possible once the project is budgeted. If extensive interior demolition is anticipated, enclosed or concealed ACM running behind walls and above ceilings may be exposed and shall be considered in defining the scope of work.

The WKU Asbestos Program Coordinator prefers areas be rendered asbestos-free during renovation or construction projects on properties owned or maintained by WKU (complete abatement of ACM during renovation or construction projects).

Any ACM remaining in the projects work area shall be clearly identified and labeled, these locations of ACM shall be added to the "as-built" project plans. An Asbestos Management Plan may be required as determined by the WKU Asbestos Program Coordinator.

A cost effective abatement alternative shall always be considered and proposed by the Asbestos Program Coordinator. However, the foresight of additional upcoming renovation work may dictate complete removal as the most feasible abatement option since it does offer a permanent solution. In many circumstances, the Asbestos Program Coordinator shall recommend to the PM several asbestos response alternatives for their project, a joint effort by both the PM and Asbestos Program Coordinator, or a person appointed by the Asbestos Program Coordinator, shall determine the asbestos response for the project.

The WKU Asbestos Program Coordinator shall provide a listing of licensed and accredited contractors approved for asbestos work activities on buildings owned or maintained by

WKU. The "Approved Asbestos Contractor List" appendix L of the WKU Asbestos Operations and Maintenance Program shall be referenced for all asbestos work activity providers.

Asbestos Contractor Management. Contractors providing asbestos services for PM projects shall be considered a "contractor for the project" not an EHS contractor. The PM shall solicit all bids for all asbestos work activities pertaining to their project and serve as the "point of contact" for that contractor, technical oversight from the Asbestos Program Coordinator shall be provided to assist the PM as needed. All additional asbestos work activity costs associated with the project are the responsibility of the project, a purchase order for these costs shall be provided by the PM to the Asbestos Program Coordinator prior to contracting such activities through Environmental Health and Safety.

For effective management of asbestos work activities for projects involving WKU the Asbestos Program Coordinator, Designated Asbestos Coordinator, and Project Manager shall compile an ongoing joint effort from the projects inception until completion or all asbestos-related hazards have been addressed and have meet all applicable regulations of the WKU Asbestos Operations and Maintenance Program for that project. *This shall include oversight of the asbestos work activities involving accredited asbestos contractors.* The asbestos contractor's scope of work shall be clearly defined prior to starting the work; the project specifications, work plan, and schedule shall provide clear instructions for the project.

Renovation and construction projects run on a continually changing schedule of events, in order to alleviate confusion and inefficiency. The PM and their Designated Asbestos Coordinator shall set the work schedule for the asbestos contractor and notify the Asbestos Program Coordinator and effected WKU Building Coordinator with the date(s) and time(s) of the anticipated asbestos work activity schedule and all changes to that schedule until completion in order to comply with the University employed building occupants "right-to-know" OSHA regulation.

The PM shall provide point of contact, direction, management, parking, building access, keys, utilities, etc. to the asbestos contractor (consultant or abatement) for the duration of the project. The WKU Asbestos Program Coordinator or a person designated by the Asbestos Program Coordinator shall provide regular site evaluations, act as liaison for WKU and regulatory agencies, and provide asbestos-related technical assistance to the DAQ and PM for the duration of all asbestos-related work activities for the duration of their project. The PM and their Designated Asbestos Coordinator shall be provided with such actions and findings from the Asbestos Program Coordinator.

The WKU Asbestos Program Coordinator or a person designated by the Asbestos Program Coordinator shall provide the final approval on all asbestos-related work activities for projects involving properties owned or maintained by WKU. These described sequences of operational events shall be adhered to for management of confirmed or presumed ACM during building projects for all properties owned or maintained by the University.

General duties for Project Managers during demolition and renovation projects pertaining to buildings owned or maintained by Western Kentucky University:

- ☑ Notify the Asbestos Program Coordinator and their Designated Departmental Asbestos Coordinator of projects that have the potential to disturb suspect or known ACM by submitting an online Asbestos Maintenance Request for evaluation in the pre-planning stage of the project.
- ☑ Provide defined scope of project work to the Asbestos Program Coordinator as requested including drawings, demo spec, and utility routes.

- ☑ Be prepared to accompany the Asbestos Program Coordinator as requested for a pre-planning survey of the proposed work site.
- ☑ Assure the PDC Designated Asbestos Coordinator is aware of the projects scope of asbestos work activity during all phases of the project.
- ☑ Develop a prioritization scheme for scheduling asbestos-related actions in such a way as to minimize impact or exposure to occupants and workers.
- ☑ Arrange contracts for asbestos services from the Appendix L WKU Approved Asbestos Contractor List covering all associated asbestos costs.
- ☑ Provide asbestos service contractors with direction, management, parking, building access, keys, utilities, etc.
- ☑ Become the point of contact for occupants, workers, and contractors for all issues concerning asbestos-related work activities during the entire project.
- ☑ Advise relevant contractors and sub-contractors of the presence of known ACM; provide the Asbestos Program Coordinator with completed *"Demolition and Renovation Contractors Asbestos Location Notification" Appendix A forms*.
- ☑ Arrange for appropriate occupant and/or shutdown notices, including entrance/exit detours and temporary relocations if necessary.
- ☑ Be available to field or refer questions pertaining to the project from concerned occupants, contractors, and sub-contractors.
- ☑ Accompany the WKU Asbestos Program Coordinator/Liaison during visits from asbestos regulatory compliance officers and inspectors, being prepared to address issues and concerns with contractors and sub contractors.
- ☑ Stop all project work activity and clear the area of workers in the event of unplanned ACM disturbance, and contact WKU Asbestos Program Coordinator.
- ☑ Ensure all asbestos-related project records are provided to the WKU Asbestos Program Coordinator for required record retention.
- ☑ *Ensure all new building materials shall be certified asbestos-free.*
- ☑ Request assistance from the WKU Asbestos Program Coordinator concerning the correct action to manage the asbestos located in the projects scope.

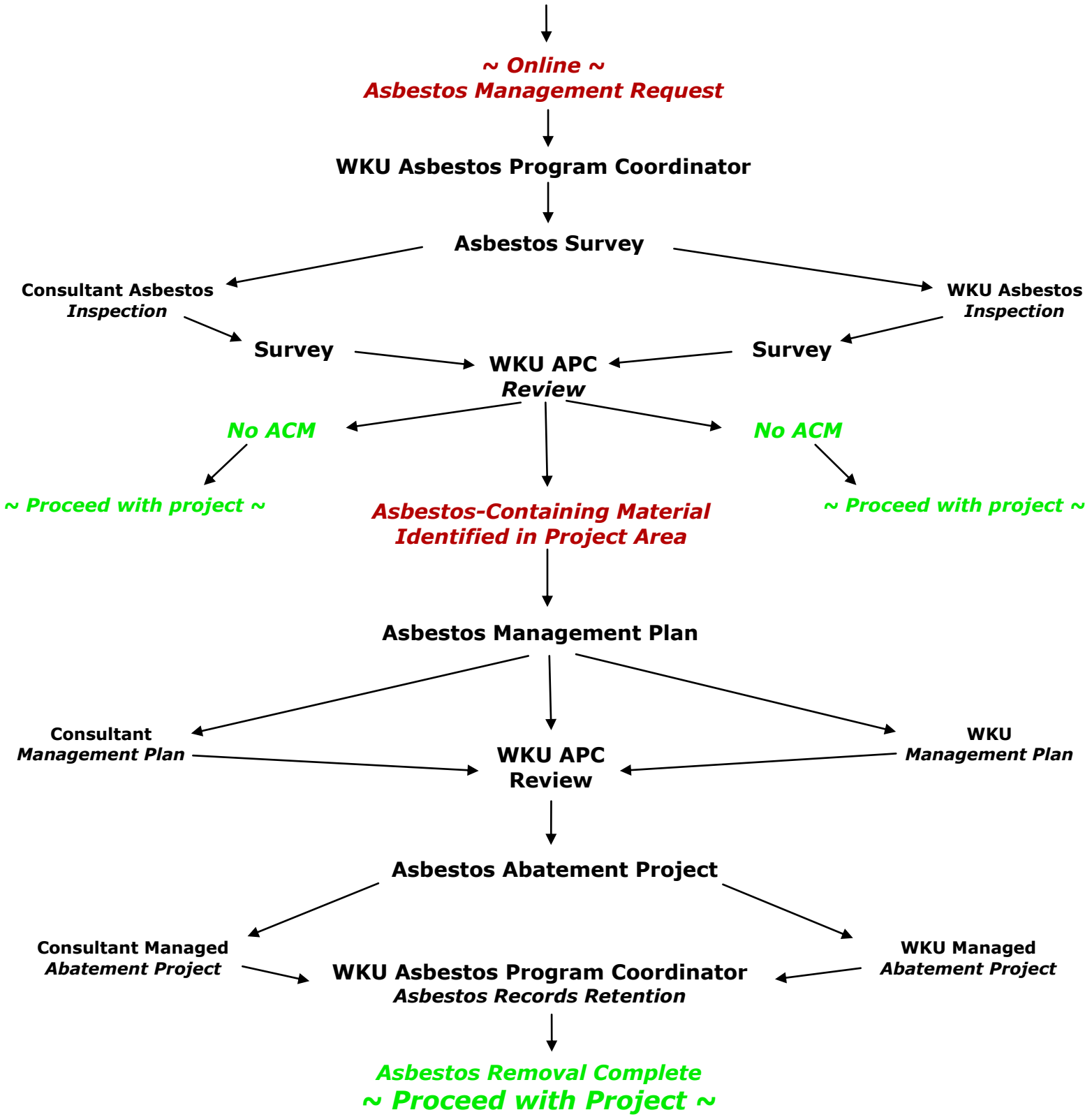
General duties for the Asbestos Program Coordinator during demolition and renovation projects pertaining to buildings owned or maintained by Western Kentucky University:

- ☑ Provide and manage Approved Asbestos Contractor List and Price Contract.
- ☑ Provide and manage Master Location Asbestos List survey database.
- ☑ Respond to the online Asbestos Maintenance Request in a timely manner.
- ☑ Request the defined scope of project work from the PM as needed to determine required asbestos management.
- ☑ Request PM assistance and information during the pre-planning survey.
- ☑ Assure the Designated Asbestos Coordinator is aware and involved concerning the projects scope of asbestos work activity.
- ☑ Provide assistance, guidance, and oversight for determining the asbestos response for the project.
- ☑ Make the determination if a project is beyond the scope of in-house asbestos management (survey and abatement).
- ☑ Assist with asbestos-related questions pertaining to the project from concerned occupants, contractors, and sub-contractors.
- ☑ Act as liaison for the University pertaining to DAQ asbestos regulatory compliance officers and inspectors for the duration of the project.
- ☑ Compile and manage asbestos-related work activity records retention database.
- ☑ Assist PM with all asbestos-related work activity as requested.

ASBESTOS MANAGEMENT PROCEDURES

Maintenance/Renovation/Demolition Planning

PRIOR TO DISTURBING SUSPECT ASBESTOS-CONTAINING MATERIALS



APPENDIX F

Asbestos Fiber Release Occurrence Report

Each known asbestos fiber release occurrence for all properties owned or maintained by Western Kentucky University shall be responded to, coordinated, investigated, documented and recorded by the Western Kentucky University Asbestos Program Coordinator or by a qualified designated person(s).

Major - ☐ (more than 3 linear or square feet) **Minor -** ☐ (less than 3 linear or square feet)

1. Address, building, and room number(s) (or description of area) where the occurrence occurred: _____
_____
_____.

2. Asbestos-containing materials released were TSI-☐, surfacing-☐, miscellaneous-☐, friable-☐. List the materials that were involved: _____.

3. The release was during demolition-☐, maintenance-☐, renovation-☐, other-☐ work activities.

4. Who was the WKU Project Manager: _____. Who was the WKU Contractor/Sub-Contractor: _____.

5. The release episode was reported by: _____,
on: _____, to: _____.
(date) *(first contact)*

6. An Asbestos Management Request-☐, Appendix A Contractors Asbestos Location Notification-☐, was completed prior to the projects start as outlined in the WKU Asbestos Management Program.

7. Air sampling and analytical testing was-☐, was not-☐ involved with this fiber release occurrence.

8. Were the area air sampling results over the OSHA permissible exposure limit; yes: ☐**,** no: ☐.

9. Clearance air sampling and analytical testing was-☐, was not-☐ conducted pertaining to this fiber release occurrence prior to re-opening the work-site area affected by this incident.

---------- Attach Additional Sheets if Necessary ----------

10. Describe the release episode: _____
_____

_____
_____
_____
_____
_____.

11. The asbestos-containing material was-☐, was not-☐ cleaned up according to the approved procedures. Who performed the clean-up: _____
_____,
describe the cleanup: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____.

12. A WKU Near Miss Incident Form was-☐, was not-☐ completed for this fiber release occurrence.

---------- Attach Additional Sheets if Necessary ----------

Signed:_____ Date:_____

Revised 9/2/2010

APPENDIX G

Guidelines for Managing Asbestos Containing Floor Tile

The following Environmental Protection Agency (EPA) and Western Kentucky University (WKU) guidelines shall be followed when stripping wax or finished topcoat from asbestos-containing floor tile in all properties owned or maintained by Western Kentucky University:

☑ ***AVOID STRIPPING FLOORS:*** Stripping of floors shall be done as infrequently as possible.

☑ ***PROPERLY TRAIN STAFF:*** Custodial staff that strips floors shall be trained to operate properly and safely the machines, pads, and floor care chemicals used at the University.

☑ ***FOLLOW APPROPRIATE WORK PRACTICES:*** Custodial staff that strips floors shall follow appropriate work practices, such as those recommended here, under informed supervision. Directions from floor tile and floor wax product manufacturers on proper maintenance procedures shall be consulted prior to floor care.

☑ ***STRIP FLOORS WHILE WET:*** **The floor shall be kept adequately wet during the floor stripping operation, Do not perform dry stripping**. Prior to machine operation, an emulsion of chemical stripper in water is commonly applied to the floor with a mop to soften the wax or finish coat. After stripping, before application of the new wax, the floor shall be thoroughly cleaned using wet methods.

☑ ***RUN MACHINE AT SLOW SPEED:*** If the machine used to remove the wax or finish coat has variable speeds, it shall be run at slow speed (about 175-190 rpm) during the operation.

☑ ***SELECT THE LEAST ABRASIVE PAD POSSIBLE:*** The machine shall be equipped with the least abrasive pad possible to strip wax or finish coat from asbestos-containing floors.

☑ ***DO NOT OVER STRIP FLOORS:*** Stop stripping operation when old surface coat is removed. Over-stripping can damage the floor and may cause the release of asbestos fibers. Do not operate a floor machine with any abrasive pad on un-waxed or unfinished floors.

⚠ Warning!

Do not sand, drill, saw, chip, pulverize, dry strip, or remove asbestos containing floor tile or adhesive. Improper removal and disposal is illegal and shall only be performed by properly trained workers utilizing work practices outlined in the University Asbestos Operations and Maintenance Program.

Revised 9/2/10

Appendix H Information Sheet

Qualification Questionnaire for Asbestos Contractors

Submit to:
Laura Tomlin
Asbestos Program Coordinator
Environmental Health and Safety
Western Kentucky University
1906 College Heights Blvd. #11046
Bowling Green, Ky. 42101-1046

Company Name: _____

Type Asbestos Work Offered: _____

☐ Individual ☐ Corporation ☐ Joint Venture ☐ Other

Contact Person: _____

Main Office Location: _____
(State in which Incorporated)

Address: _____

_____ Zip Code: _____

Telephone No.: _____ Facsimile No.: _____

---------- *office use only* ----------

Received by: _____ Date Received: _____

Reviewed by: _____ Date Reviewed: _____

Approved by: _____ Date of Approval: _____

Notified to: _____ Date Notified: _____

Notified by: _____ Date Notified: _____

Asbestos Contractor notified by: ☐ Phone ☐ Fax ☐ Mail ☐ E -mail ☐ In person

WESTERN KENTUCKY UNIVERSITY

APPENDIX H

Asbestos Contractor Qualification Questionnaire

General Information and Instructions

All asbestos analytical, consultant, and removal contractors shall complete an initial Appendix H Asbestos Contractor Qualification Questionnaire and have approval from the Western Kentucky University Asbestos Program Coordinator prior to bidding asbestos-related work activities on all properties owned, operated, managed, or maintained by Western Kentucky University and renewed annually thereafter. Annual Appendix H renewals shall be submitted and approved, prior to January 1st. All Asbestos Contractors shall have a current approved Appendix H on file with the Western Kentucky University Asbestos Program Coordinator prior to bidding or conducting asbestos work.

All ANSWERS AND ENTRIES SHALL BE SPECIFIC AND COMPLETE and shall only be completed once a thorough and complete understanding of the Western Kentucky University Asbestos Operations and Maintenance Program has been established. Except for signatures, all shall be typed or hand printed with ink. Do not cross out any headings or instructions.

The signatory of this Asbestos Contractor Qualification Statement guarantees and acknowledges the understanding and comprehension of this document and the compliance of the Western Kentucky University Asbestos Operations and Maintenance Program and the truth and accuracy of all statements and of all answers to the interrogatories hereinafter made. Knowingly falsifying information shall void and terminate all contracts and agreements.

1.0 SPECIAL CONDITIONS

This program is for the specific purpose of controlling and managing asbestos-containing material (ACM) at all properties owned, operated, managed, or maintained by Western Kentucky University (WKU). Special Conditions shall supplement or amend the federal, state, and local asbestos regulations to allow asbestos management compliance utilizing an approved modified version of 401 KAR 58:010. All employees of all outside asbestos contractors and/or subcontractors whose work may involve existing ACM in properties owned or maintained by WKU shall be informed of the Asbestos Operations and Maintenance Program (AOMP) and the associated guidelines in the AOMP prior to commencement of work and are required to follow the guidelines contained herein as well. The AOMP can be viewed and obtained at the WKU Department of Environmental Health and Safety (EHS) web site:

1.1 DEFINITIONS

The term "WKU" refers to Western Kentucky University and/or its designated and authorized representative having over-site to make decisions pertaining to asbestos-related work activities.

The term "Asbestos Contractor" refers to the person(s), company(s) contractor(s) or subcontractor(s) providing asbestos analytical, consultant, removal, or other asbestos-related services.

1.2 DESCRIPTION

The scope of work consists of any work activity involving asbestos-containing materials from existing facilities owned, operated, or managed by Western Kentucky University. .

1.3 WORK IN OCCUPIED AREAS

Erect and maintain weatherproof closures for exterior openings.

Erect and maintain temporary partitions (wood frame and/or polyethylene barriers) to prevent spread of dust, fumes, noise, and smoke to WKU occupancy.

Protect existing furniture and/or equipment that are to remain.

Protect occupants from injury, particularly when working overhead.

Conduct work in an orderly and careful manner.

Except where notified otherwise, immediately remove demolished materials from the site as work progresses. Demo debris shall not be allowed to accumulate.

Keep the work area on all WKU properties in a neat and orderly condition at all times.

The Asbestos Contractor shall assume full responsibility for damage caused or for personal injury because of their work, operations; all such damage or injury as does occur shall be corrected to original condition at no additional charge to WKU.

WKU shall be responsible for determining access and egress locations from both the facility and the work areas for Asbestos Contractor's personnel. WKU reserves the right to restrict Asbestos Contractor's personnel from designated areas of a facility at will.

1.4 ORDER OF WORK

The order of work shall be determined by WKU.

The sequence of work to be performed shall be determined by WKU.

1.5 CONSTRUCTION SCHEDULE

The Asbestos Contractor shall commence work upon written notification by WKU, such as but not limited to a purchase order. Work shall not start on the project prior to authorization by WKU.

WKU shall establish working hours at the sites to include seven days a week if necessary. However, if it becomes necessary for the Asbestos Contractor to extend the hours to evening or weekends, he shall notify WKU or the WKU's Representative at least 24 hours in advance. The Asbestos Contractor's superintendent, or responsible equivalence, shall be present at the worksite during any regularly scheduled or extended work hours.

The Asbestos Contractor shall submit a written and graphic plan of operation and a day-by-day schedule for approval by WKU prior to beginning work on each project that will be reviewed at the pre-construction conference or by the WKU Asbestos Program Coordinator as determined by WKU.

The Asbestos Contractor must obtain written permission of WKU prior to subcontracting of any work.

1.6 INSURANCE AND HOLD HARMLESS CLAUSE

The Asbestos Contractor shall comply with the hold harmless and insurance requirements of Western Kentucky University, as found in sections 2.10 – 2.13 of this qualification.

2.0 ASBESTOS REMOVAL

2.1 SCOPE

This qualification covers requirements, work practices, and procedures to be followed by Asbestos Contractors when performing all asbestos-related work activities for WKU in conjunction with all other applicable regulations pertaining to that particular scope of work or project.

2.2 DESCRIPTION OF WORK

The qualification contained herein is generic in nature and shall be applied to all asbestos-related work activities conducted for Western Kentucky University. The scope of each specific project will be defined between WKU and the Asbestos Contractor at the outset of that project.

2.3 TERMINOLOGY (DEFINITIONS)

Abatement: Procedures to control fiber release from asbestos-containing materials. For this project, abatement means the removal from the building of all asbestos-containing materials in areas identified by Western Kentucky University or its representative.

Accredited or Accreditation: A person or laboratory accredited in accordance with section 206 of Title II of the Toxic Substances Control Act (TSCA).

Aerosol: A system consisting of particles, solid or liquid, suspended in air.

Air Cell: Insulation normally used on pipes and ductwork that is comprised of corrugated cardboard that is frequently comprised of asbestos combined with cellulose or refractory binders.

Air Lock: A system for permitting ingress and/or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least three feet apart.

Air-monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time.

Amended Water: Water to which a surfactant has been added to decrease the surface tension to 35 or less dynes.

Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection, both asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered asbestos.

Asbestos-containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

Asbestos-containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.

Asbestos-containing Waste Material: Any material that is or is suspected of being, or any material contaminated with an asbestos-containing material that is to be removed from a work area for disposal as asbestos-containing.

Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition; dust, if it is determined by an accredited inspector to be ACM.

Authorized Visitor: WKU, WKU's representative, testing lab personnel, the Architect/Engineer, emergency personnel, or a representative of any federal, state, or local regulatory agency having authority over the project.

Barrier: Any surface that seals off the work area to inhibit fiber movement.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 9 inches.

Building Owner: WKU or authorized representative.

Certified Industrial Hygienist: An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Clean Room: An uncontaminated area or room that is part of the worker decontamination enclosure system, with provision for storage of workers' street clothes and protective equipment.

Competent Person: Is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and has authorization to take prompt corrective measures to eliminate them. They shall be capable of identifying existing asbestos hazards and selecting the appropriate control strategy for asbestos exposure and has the authority to take prompt corrective measures to eliminate them. For Class I and Class II work, one who is specially trained in a course which meets the criteria for EPA's Model Accreditation Plan (40 CFR part 763) for supervisor, or its equivalent and, for Class III and Class IV work, one who is trained with EPA requirements for training of maintenance and custodial staff as set forth at 40 CFR 763.92(a) (2).

Confined Space: A space that: is large enough and so configured that an employee can bodily enter and perform assigned work; has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, and pits are spaces that may have limited means of entry); and is not designed for continuous employee occupancy.

Critical Barrier: A part of the containment barrier or existing partition, or other opening to the outside of the enclosure, which has been sealed with polyethylene plastic film, taped joints, and perimeter. The critical barrier is generally the dividing barrier between work areas and non-work areas. This shall not be removed until proper air clearances have been obtained.

Curtained Doorway: Allows ingress and/or egress from one room to another, permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over an existing or temporary framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and the vertical edge of the other sheet along the other vertical side of the doorway. Two curtained doorways spaced a minimum of 3 feet apart from an air lock.

Decontamination Enclosure System: A series of connected rooms, with air locks between each, for decontamination of workers, materials, or equipment.

Demolition: The wrecking or taking out of any building component, system, finish, or assembly of a facility together with any related handling operations.

Disposal Bag: A properly labeled 6-mil thick leak-tight plastic bag used for transporting asbestos waste from work and to disposal site.

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

> *Bridging encapsulant*: Encapsulant that forms a layer on the surface of the asbestos matrix.
>
> *Penetrating encapsulant*: Encapsulant that is absorbed by the asbestos matrix without leaving a surface layer.
>
> *Removal encapsulant*: Penetrating encapsulant specifically designed to minimize fiber release during removal of asbestos-containing materials rather than for encapsulation.

*Encapsulatio*n: Treatment of asbestos-containing materials encapsulant.

*Enclosur*e: With respect to asbestos abatement, procedures necessary to enclose asbestos-containing materials within impermeable barriers during asbestos removal. Includes the following:

> *Full Enclosure*: Work area completely enclosed and isolated with critical barriers plus at least 2 layers of 6-mil polyethylene on the floors and a minimum of 2 layers of 4-mil polyethylene on the walls, and at least 1 layer of polyethylene on the ceiling. Also includes complete worker and equipment decontamination enclosure system.
>
> *Modified Enclosure*: Work area sealed with critical barriers, worker, and equipment decontamination enclosure system to be utilized. When several modified enclosures are in one restricted area of the project, two (2) chamber air locks may be utilized attached to work area and one (1) complete worker and equipment decontamination enclosure system may be used for the series of work areas.
>
> *Mini Containment*: Work area sealed with critical barriers. Single airlock at entrance to work area (typically used in conjunction with glovebag removal).

Equipment Decontamination Enclosure System: A decontamination enclosure system for materials and equipment, typically consisting of a designated area of the work, a washroom, a holding area, and an uncontaminated area.

Equipment Room: A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.

Filter: A media component used in respirators to remove solid or liquid particles from an inspired air.

Fixed Object: A unit of equipment or furniture in the work area that cannot be removed from the work area; either stationary, permanent or as determined by the University.

Friable Asbestos Material: Contains more than 1.0% asbestos and can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Glovebag: A sack (typically made of 6-mil transparent polyethylene or polyvinylchloride plastic) with inward projecting long-sleeve gloves, designed to enclose an object from which asbestos-containing material is to be removed.

HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns diameter.

HEPA Filter Vacuum Collection Equipment: High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be a minimum of 99.97% efficient for retaining fibers greater than 0.3 microns in diameter.

High Efficiency Particulate Air (HEPA) Filter: Is capable of trapping and retaining 99.97% of mono-dispersed particles 0.3 microns in diameter or larger.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Negative Air Pressure System: A pressure differential and ventilation system, utilizing HEPA filtration air filtering devices capable of maintaining a negative pressure inside the work area with respect to pressure outside the containment and a constant air flow from adjacent areas into the work area and exhausting that air outside the work area after proper filtration.

*NIOS*H: National Institute for Occupational Safety and Health.

Permit-Required Confined Space: A confined space that has one or more of the following characteristics: Contains or has a potential to contain a hazardous atmosphere; Contains a material that has the potential for engulfing an entrant; Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or Contains any other recognized serious safety or health hazard. Or as determined, or posted as, a *Permit-Required Confined Space* by the University

Personal Monitoring: Sampling of asbestos fiber concentrations in the breathing zone of an employee.

Pressure Differential and Ventilation System: A local exhaust system utilizing HEPA filtration capable of maintaining a pressure differential inside the Work Area at a lower pressure than adjacent areas, which cleans re-circulated air or generates a constant airflow from adjacent areas into the Work Area.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Removal: All herein specified procedures necessary to strip all asbestos-containing materials from the designated areas and to dispose of these materials at an acceptable site in an acceptable and legal manner.

Repair: Returning damaged ACBM to an undamaged condition or to an intact state to prevent fiber release or further delamination.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Shower Room: A room between the clean room and the equipment room in the decontamination enclosure system, with hot and cold running water and suitably arranged for complete showering during worker decontamination.

Surfactant: A chemical wetting agent added to water to improve penetration.

Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at the project site or elsewhere; or to report and (if required) interpret results of those inspections or tests. In this project, it shall mean the laboratory working in conjunction with WKU's representative for air-monitoring, clearance testing and bulk sample analysis.

Time Weighted Average (TWA): The average concentration of a contaminant in the air during a specific time or period.

Visible Emission: An emission containing particulate asbestos material that is visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Washroom: A room between the work area and holding area in the equipment decontamination enclosure system and comprises an airlock.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water and afterwards thoroughly decontaminated or disposed of asbestos-containing waste.

WKU: Western Kentucky University and/or its designated and authorized representative having over-site to make decisions pertaining to asbestos-related work activities.

Work Area: The area where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers, or debris and entry by unauthorized personnel. Work area is regulated area as defined by 29 CFR 1926.

2.4 CODES AND REGULATIONS

General Applicability of Codes, Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the project documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the project documents by reference) as if copied directly into the project documents, or as if published copies are bound herewith, or as stated in the University's Asbestos Operations and Maintenance Program.

Asbestos Contractor Responsibility: The Asbestos Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, Local, and WKU regulations pertaining in any way to the asbestos-related work the asbestos contractor was hired to perform, including but not limited to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying adjacent areas.

The list of codes, regulations, and standards set forth below is intended to assist the Asbestos Contractor in determining which laws may be applicable. It is the responsibility of the Asbestos Contractor to ultimately determine which laws govern the particular work to be performed, and to determine if there are any other laws or standards applicable to the job.

The Asbestos Contractor is also responsible for providing medical examinations and maintaining medical records of their personnel as required by the applicable Federal, State, Local, and WKU regulations. The Asbestos Contractor shall hold WKU and WKU's Representative harmless for failure to comply with any laws applicable to the work, including but not limited to those relating to asbestos inspection or survey, laboratory analysis, project

design, air-monitoring, removal, hauling, disposal, safety, health, or other regulations on the part of himself, his employees, or his subcontractors.

Federal Requirements: Which govern asbestos-related work or hauling and disposal of asbestos waste materials include but are not limited to the following (or any rules, legislation, or standards superseding and/or supplementing those listed).

U. S. Department of Labor, Occupational Safety, and Health Administration (OSHA), including but not limited to:

29 CFR 1910.1001	General Industry Asbestos Standard
29 CFR 1926.1101	Construction Industry Asbestos Standard
29 CFR 1910.134	OSHA Respiratory Protection Standard
29 CFR 1910.145	Specification for Accident Prevention, Signs, and Tags
29 CFR 1910.146	Permit-Required Confined Spaces
29 CFR 1910.1200	Hazard Communication
29 CFR 1910.1020	Access to Employee Exposure and Medical Records

U. S. Environmental Protection Agency (EPA) including but not limited to:

40 CFR Part 61, Subpart A	NESHAP National Emission Standard for Asbestos
40 CFR Part 61, Subpart M (Revised Subpart B)	National Emissions Standards for Hazardous Air Pollutants
40 CFR Part 61, Asbestos Revision (Nov. 20, 1990)	National Emission Standard for Hazardous Air Pollutants
40 CFR Part 763, Subpart E	AHERA: Asbestos Hazards Emergency Response Act
40 CFR Part 763, Subpart G	Worker Protection Rule

State Requirements: Which govern asbestos-related work or hauling and disposal of asbestos waste materials include but are not limited to the following (or any rules, legislation, or standards superseding and/or supplementing those listed).

401 KAR 58:005	Accreditation of Asbestos Professionals
401 KAR 58.010	Local Education Agencies
401 KAR 58:025	Asbestos NESHAP Standard
401 KAR 58:040	Requirements for Asbestos Abatement Entities

Local Requirements: Abide by local and WKU specific requirements that govern asbestos-related work or hauling and disposal of asbestos waste materials, including but not limited to the:

Western Kentucky University Asbestos Operations and Maintenance Program

2.5 STANDARDS

Standards: Which govern asbestos-related work or hauling and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018 (212) 354-3300

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication, ANSI Z9.2-79

Practices for Respiratory Protection Publication Z88.2-80

American Society for Testing and Materials (ASTM)

1916 Race Street
Philadelphia, PA 19103

Specifications for Encapsulants for Friable Asbestos-containing Building Materials
Proposal P-189

Safety and Health Requirement Relating to Occupational Exposure to Asbestos 849-82

Underwriters Laboratories, Inc. (UL)

2.6 EPA GUIDANCE DOCUMENTS

EPA Guidance Documents: Thoroughly discuss and provide guidance pertaining to all asbestos-related work, hauling, and disposal of asbestos waste materials.

EPA maintains an information number (800) 334-8571, publications can be ordered from (800) 424-9065, (554-1404 in Washington, DC):

Asbestos-containing Materials in School Building - A Guidance Document
PART 1 & 2 (orange books)
EPA C00090 (out of print)

Guidance for Controlling Asbestos-Containing Materials in Buildings
(Purple Book) EPA 560/5-85-024

Friable Asbestos-containing Materials in Schools: Identification and Notification Rule
EPA 560/5-85-005

Asbestos in Buildings: National Survey of Asbestos-containing Friable Materials
EPA 560/5-84-006

Asbestos Waste Management Guidance EPA 530-SW-85-007

Asbestos Fact Book EPA Office of Public Affairs

Asbestos in Buildings Simplified Sampling Scheme for Friable Surfacing Materials EPA 50/5-85-030a

Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification.

A guide to Respiratory Protection for the Asbestos Abatement Industry EPA 560-OPTS-86-001

2.7 NOTICES

The Asbestos Contractor shall send notification of planned asbestos abatement, as required by the US EPA National Emissions Standards for Hazardous Air Pollutants to the WKU Asbestos Program Coordinator (via e-mail only) at least ten (10) days prior to beginning any work on asbestos-containing materials not covered under the University's Long Term Notification or 2 hours prior to beginning any work covered under the University's long term Notification. **At no time shall the Asbestos Contractor send notification directly to Kentucky Division for Air Quality without written prior approval from the WKU Asbestos Program Coordinator or the designated appointee.**

All notification shall be via e-mail. A copy of this notification shall be present on the project site during all asbestos abatement work at WKU.

The notification shall be submitted to the University's Asbestos Coordinator or a person designated by the WKU Asbestos Coordinator on the official Kentucky Division for Air Quality Notification of Asbestos Abatement/Demolition/Renovation form, via e-mail only, and shall include the following:

- ☑ Name and address of the Asbestos Contractor
- ☑ Legal owner; 1906 College Heights Blvd., Bowling Green, KY, 42101 as address
- ☑ Address and description of the building, including size, age, and prior use of the building, and amount of friable and non-friable asbestos-containing materials to be removed
- ☑ Scheduled starting and completion dates for the work
- ☑ Name and address of proposed, approved waste disposal site
- ☑ Documentation that the job will be supervised by a person who is certified as needed under state and federal requirements
- ☑ Procedures to be used to comply with requirements of NESHAPS

The abatement notification shall be sent to the Western Kentucky University Asbestos Program Coordinator at this email address:

WKU Asbestos Program Coordinator

2.8 LICENSES AND PERMITS

The Asbestos Contractor shall be expressly licensed in the Commonwealth of Kentucky as an asbestos-related entity. This license shall be current and in effect during the term of the project.

The Asbestos Contractor shall obtain and maintain current any additional licenses or permits required by federal, state, local, or WKU authorities for all work to be performed.

2.9 FURTHER REQUIREMENTS

Asbestos Contractor shall submit documentation to WKU indicating that each removal employee has had instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures and that each understands this instruction. *A Certificate of Worker Acknowledgement (WKU Appendix I) and Certificate of Worker Release (WKU Appendix J) shall be signed by all workers performing asbestos-related activities. A completed WKU Appendix I and J shall be provided to the WKU Asbestos Program Coordinator, before any Asbestos Contractors, representative or worker shall be allowed to perform any asbestos-related work activities on all properties owned, operated, managed, or maintained by WKU.*

Asbestos Contractor shall submit a list of all workers proposed to perform work on the project to the WKU Asbestos Coordinator for review prior to start of work.

Post warning signs in and around the work area to comply with OSHA Regulation 29 CFR 1926.1101 and in compliance with all other Federal, State, and Local Requirements.

WKU and Asbestos Contractor must agree in writing on building and fixture condition prior to commencement of work. It shall be the Asbestos Contractor's responsibility to replace or repair to WKU's satisfaction, prior to close out of the project, all items identified by WKU as missing or having been damaged by the Asbestos Contractor and not proven otherwise.

Submit documentation to WKU that all required permits, site location, and arrangements for transport and disposal of asbestos-containing or contaminated materials have been obtained.

Submit to WKU drawings for construction of decontamination enclosure systems and for isolation of the work areas in compliance with this qualification and all applicable regulations.

2.10 HOLD HARMLESS CLAUSE

The Asbestos Contractor shall indemnify, hold harmless, and defend WKU, its elected and appointed officials, employees, agents and successors in interest from all claims, damages, losses and expenses including attorneys' fees, arising out of or resulting, directly or indirectly, from the Asbestos Contractor's, or subcontractor's, performance provided that such claim, damage, loss, or expense is: (1) attributable to personal injury, bodily injury, sickness, death, or to injury to or destruction of property, including the loss of use resulting there from and (2) not caused by the negligent act or omission or willful misconduct of WKU or its elected and appointed officials and employees acting within the scope of their employment.

This Hold Harmless and Indemnification Clause shall in no way be limited by any financial responsibility or insurance requirements and shall survive the termination of the project.

The Asbestos Contractor shall comply at all times with all other laws, rules, regulations, codes, and ordinances; state, federal or municipal, applicable to services to be performed by the Asbestos Contractor. The Asbestos Contractor agrees to indemnify WKU and hold it harmless from all liability solely due to the violation of such laws or regulations by the Asbestos Contractor for any failure.

2.11 INSURANCE

Asbestos Contractor shall provide the following insurances through insurance companies licensed in Kentucky. Insurance written by non-admitted carriers will be considered acceptable, in accordance with Kentucky Insurance Law (KRS 304.10-040). Workers' Compensation written through qualified self-insurance programs in accordance with Kentucky Revised Statutes (KRS 342.350) will be acceptable. The Asbestos Contractor shall not work until all insurance required has been obtained and until copies of policies or certificates thereof are submitted to and approved by WKU. A current copy of Asbestos Contractor's applicable insurance statement(s) shall be enclosed with this qualification, policy renewals shall be submitted to the WKU Asbestos Program Coordinator.

The Asbestos Contractor shall not allow any subcontractor to work until the insurance required of such subcontractor has been obtained and copies of certificates of insurance retained by Asbestos Contractor evidencing proof of coverage.

Without limiting Asbestos Contractor's indemnification requirements, it is agreed that Asbestos Contractor shall maintain in force at all times during the performance of the project the following policy or policies of insurance covering its operations, and require subcontractors, if subcontracting is authorized, to procure and maintain these same policies until final acceptance of the work by WKU, or as separately specified hereinafter.

WKU may require Asbestos Contractor to supply proof of subcontractor's insurance via certificates of insurance, or at the WKU option, actual copies of policies.

The following clause shall be added to the Asbestos Contractor's (and subcontractors) Commercial/Comprehensive General Liability Policy and Contractors Pollution Legal Liability Policy:

"Western Kentucky University, its elected and appointed officials, employees, agents and successors are added as an "Additional Insured" as respects operations of the Named Insured performed relative to the asbestos-related work activity provided ."

The insurance to be procured and maintained minimum limits of liability shall be, unless different limits are specified by the project:

COMPREHENSIVE GENERAL LIABILITY/COMMERCIAL GENERAL LIABILITY, via the Occurrence Form, with a one million dollars ($1,000,000) Combined Single Limit for any Occurrence for Bodily Injury, Personal Injury, and Property Damage including:

- ☑ Premises - Operations Coverage
- ☑ Products and Completed Operations
- ☑ Contractual Liability
- ☑ Broad Form Property Damage
- ☑ Independent Contractors Protective Liability
- ☑ Personal Injury

NOTE: Either this policy shall, by Endorsement, specifically state that the Pollution Hazard is covered, **via the Pollution Liability Coverage Extension Endorsement**, or a separate policy providing **Contractor's Pollution Legal Liability Coverage (CPLL)** shall be purchased.

If this coverage is written on a **CLAIMS-MADE** basis, the Asbestos Contractor shall, after work has been completed, furnish evidence to WKU that the liability coverage has been **maintained for at least two (2)** years after completion of the work, either by submitting renewal policies with a retroactive date of not later than the date work commenced under this project or by evidence that the Asbestos Contractor has purchased an **Extended Reporting Period Endorsement** that will apply to any and all claims arising from work performed at WKU.

AUTOMOBILE LIABILITY: Insuring all owned motor vehicles used to transport waste materials. **One million dollars ($1,000,000)** is the minimum Combined Single Limit for any one accident. The Endorsement for "Motor Carrier Policies of Insurance for Public Liability under Sections 29 and 30 of the Motor Carrier Act of 1980" must also be attached to this policy, if required by law.

WORKERS' COMPENSATION: Insuring the employers' obligations under Kentucky Revised Statutes Chapter 342 at Statutory Limits, and Employers' Liability with Limits of $100,000 Each Accident; $500,000 Disease-Policy Limit; $100,000 Disease Each Employee.

CONTRACTORS POLLUTION LEGAL LIABILITY COVERAGE: Required if above is not endorsed to provide Pollution Hazard coverage. Prefer coverage written on Broad Form basis, however, if written on a site-specific basis, this will be considered acceptable, if Asbestos Contractor supplies proof to WKU that this site is covered. Preferably, this policy *shall* include WKU as an **Additional Insured. $1,000,000 per Occurrence** with a **$2,000,000 Aggregate** is the minimum acceptable Limits.

NOTE: If this coverage is written on a **CLAIMS-MADE** basis, the Asbestos Contractor shall, after work has been completed, furnish evidence to WKU that the liability coverage has been maintained for at least *two (2) years* after completion of the work. Either by submitting renewal policies with a retroactive date of not later than the date work commenced or by evidence that the Asbestos Contractor has purchased an *Extended Reporting Period Endorsement* that will apply to any and all claims arising from work performed.

2.12 ACCEPTABILITY OF INSURERS

Insurance is to be placed with Insurance Companies with an A. M. Best Rating of no less than **"B+ VI"**, unless proper financial information relating to the insurance company is submitted to and approved by WKU prior to Asbestos Contractor qualification.

2.13 OTHER INSURANCE REQUIREMENTS

The Asbestos Contractor shall procure and maintain insurance policies as described herein and for which WKU shall be furnished Certificates of Insurance upon qualification. The Certificates shall include provisions stating that the policies may not be cancelled or materially amended without WKU having been provided at least thirty (30) days written notice. **The Certificates shall identify WKU** and shall include the name and address of the person executing the Certificate of Insurance as well as the person's signature. If policies expire before the completion of the project, renewal Certificates of Insurance shall be furnished to the WKU before the expiration date.

Approval of the insurance by WKU shall not in any way relieve or decrease the liability of the Asbestos Contractor hereunder. It is expressly understood that Western Kentucky University does not in any way represent that the specified Limits of Liability or coverage or policy forms are sufficient or adequate to protect the interest or liabilities of the Asbestos Contractor.

2.14 ASBESTOS CONTRACTORS PERSONNEL

The conduct of all Asbestos Contractor personnel performing work is expected to be courteous and respectful and shall be with honesty, professional, and ethical principles. *Personnel shall have the ability to communicate with English language and wear a visible I.D. card bearing the company's name, their name, and picture while working on University property.* WKU has a zero tolerance policy for threats, violence, and any acts that may create an intimidating and disruptive work environment. Personnel with prior convictions of felony crimes shall not be allowed to work at WKU.

Prohibited acts shall not be tolerated on University property, such as but not limited to:

- ☑ Possession or under the influence of alcohol or illegal substances.
- ☑ Use of tobacco products shall conform to University policy.
- ☑ Theft or unauthorized removal, use, or disposal of University property.
- ☑ Harassing, threatening, profane, or unwanted stares, comments, conversation, phone calls, letters, e-mails, or other communications.
- ☑ Possession and/or use of firearms, bombs, weapons or other items of destruction.
- ☑ Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that constitute sexual harassment.
- ☑ Physical altercations or instigating and/or encouraging violent behavior by others.
- ☑ Stalking, threatening, or similar intimidation either directly or indirectly.

Violation of this provision shall be determined by WKU and may result in expulsion of the offending personnel and/or cancellation of this qualification.

2.15 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

General Superintendent: In addition to section 2.14 Asbestos Contractors Personnel, Asbestos Contractor shall provide a full-time General Superintendent who is experienced in administration and supervision of asbestos-related projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Asbestos Contractor and is the Asbestos Contractor's representative responsible for compliance with all applicable federal, state, and local regulations, particularly those relating to asbestos-containing materials as specified in 1926.1101.

For asbestos abatement this person must have completed a course at an EPA equivalent certificate course in asbestos abatement procedures, have had a minimum of two (2) years on-the-job training and meet any additional requirements set forth in 29 CFR 1926 for a Competent Person.

Asbestos Contractor shall, prior to working, provide WKU with written documentation that the Asbestos Contractor has such a person and that such person will be used at the job site at all times.

2.16 CONTINGENCY PLAN

Contingency Plan: Asbestos Contractor shall prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Nothing in this specification shall impede safe exiting or providing of adequate medical attention in an emergency.

Asbestos Contractor Shall Post: In clean room of personnel decontamination unit telephone numbers and locations of emergency services including but not limited to the WKU Police Department, Asbestos Program Coordinator and, Department of Facilities Management.

2.17 LOCAL NOTIFICATIONS

WKU shall be responsible for notifying building occupants, and all other entities at the job site of the nature of the asbestos abatement activities, location of asbestos-containing materials, requirements relative to asbestos set forth in this qualification and applicable regulations. ***All asbestos-related concerns shall be directed to the WKU Departmental Asbestos Coordinator who requested the work and/or the Asbestos Program Coordinator, at no time shall the Asbestos Contractor directly address building occupants, residents, general public, or media pertaining to asbestos-related issues.***

2.18 PERSONNEL PROTECTION

The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workers and building occupant. Asbestos Contractor shall apprise all workers, supervisory personnel, subcontractors, and consultants who will be at the job site of the seriousness of the hazard and of paper work procedure that must be followed.

Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of identified asbestos-containing measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state, and local agencies.

Prior to commencement of work, workers shall be instructed by the Asbestos Contractor and be knowledgeable of the dangers of asbestos exposure, respirator use, and decontamination. Asbestos Contractor shall provide workers with personally issued respiratory equipment approved by NIOSH and Mine Safety and Health Administration (MSHA) and suitable for the asbestos exposure level in the work area according to OSHA Standard 29 CFR 1926.1101 and/or other applicable laws. Where respirators with disposable filters are employed, provide sufficient filters for replacement as required by the worker or applicable regulation.

In addition to other legal requirements, the Asbestos Contractor shall ensure that its respirator program is in accordance with American National Standards Practices for Respiratory Protection ANSI Z88.2-1980, with the exception of Appendix A5, Suggested Procedures for Carrying Out Qualitative Respiratory-Filtering Tests, and Appendix A6, Suggested Procedures for Carrying Out Quantitative Respiratory-Filtering Tests. Respiratory protection procedures shall be in accordance with recognized industry standards, as those described in the National Institute of Building Science "Model Asbestos Abatement Guide Specification:" 01562.

Asbestos Contractor shall provide workers and qualified visitors with sufficient protective full body clothing. Such clothing shall consist of full body coveralls, headgear, eye protection, and hard hats as required by applicable safety regulations.
Disposable type protective clothing, headgear, and footwear shall be used and disposed of as asbestos-contaminated waste. Asbestos Contractor shall post in the equipment room and the clean room, the work procedures to be followed by workers, as described in the qualification.

2.19 WORKER PROTECTION PROCEDURES

Reporting Accidents: Asbestos Contractor shall submit reports of significant accidents during work at WKU. Record and document date and actions and comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury or property loss is sustained, or where the event posed a significant threat of personal injury.

The Asbestos Contractor is responsible for compliance with the following:

- ☑ Workers and authorized visitors entering the work area shall remove street clothes in the clean change room, put on a respirator with new filters, and clean uncontaminated protective clothing before entering the equipment room or the work area. Facemasks must always have proper seals and fit properly.
- ☑ Worker shall not eat, drink, apply cosmetics, or chew gum at the work site except in an established clean area.
- ☑ Workers shall be protected from the time of first disturbance of asbestos-containing or contaminated materials prior to commencing actual asbestos abatement and until final cleanup is completed and clearance testing has certified the area is uncontaminated if applicable. Initial, pre-cleaning of a work area shall be considered "first disturbance", dual HEPA cartridge half-face respirators shall be required as a minimum from that point.
- ☑ All workers and authorized visitors shall, each time they leave the work area: Remove gross contamination from clothing; proceed to the equipment room and remove all clothing except respirators. Still wearing the respirator proceed naked to the showers; clean the outside of the respirators while showering; remove the respirator, thoroughly shampoo and wash themselves; remove filters wet and dispose of filters in the container provided for the purpose; and wash and rinse the inside of the respirators.
- ☑ Following showering, workers and authorized visitors shall proceed to the clean change room and dress in clean clothes at the end of work, or before eating, smoking, or drinking. Before re-entering the work area from the clean change room, workers and authorized visitors shall put on a clean respirator with filters and shall dress in clean protective clothing, except that workers intending to re-wear contaminated protective clothing stored in the equipment room shall enter the equipment room wearing only respirators.
- ☑ Contaminated footwear shall be stored in the equipment room when not in use in the work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out before removing from work area or from equipment room for reuse or dispose of with other asbestos-contaminated materials.
- ☑ Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean coveralls. No worker shall use this system as a means to leave or enter the work area.
- ☑ Shirts and pants are required at all times. *Workers on asbestos projects shall be fully dressed in appropriate street clothing (no cut-off shirts or pants) at all times except while working inside negative pressure enclosures.*

2.20 EQUIPMENT REMOVAL PROCEDURES

The Asbestos Contractor shall clean external surfaces of contaminated containers and equipment thoroughly by wet wiping prior to moving to uncontaminated areas. Asbestos Contractor shall further ensure that personnel do not leave work areas through the equipment decontamination enclosure system.

2.21 MATERIALS AND EQUIPMENT

Deliver all materials in original package, container, or bundles bearing the name of the manufacturer and brand name. Deliver, store and handle products in accordance with manufacturer's recommendations, using methods that prevent damage, loss, theft, or injury.

Store all materials subject to damage off the ground, away from wet or damp surfaces, and cover sufficient to prevent damage or contamination.

Damaged or deteriorating materials shall not be used and removed from the premises. Materials that become asbestos-contaminated shall be disposed of in accordance with applicable regulations.

Polyethylene shall be a minimum of 6-mil thickness unless otherwise specified, in sizes to minimize the frequency of joints, splicing or cutting.

Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

Amended water shall be applied only with pump sprayers or bucket water. No water hoses shall be allowed. Comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated.

Impermeable containers, to be furnished by Asbestos Contractor, suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. The containers shall be labeled by the Asbestos Contractor in accordance with all laws including OSHA Regulation 29 CFR 1926.1101 DOT Regulation 49 CFR Parts 171 and 172, and NESHAP Regulation 40 CFR Part 61, Subpart M; Revision. Containers shall be airtight, watertight, and resistant to damage and rupture.

The Asbestos Contractor shall furnish warning labels and signs as required by all laws including OSHA Regulation 29 CFR 1926.1101 and Western Kentucky University.

2.22 TOOLS AND EQUIPMENT

Asbestos Contractor shall provide suitable tools for asbestos removal.

Negative Air Pressure Equipment: High efficiency particulate air (HEPA) systems shall be filtration equipment in compliance with ANSI Z9.2-79, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. Negative pressure shall be held on the work area (24 hours a day) from the start of work in the area until the area has been decontaminated and capable of extracting a minimum of 2000 CFM per 30,000 cubic feet and a maximum of 5000 CFM. All exhausted air shall be filtered and discharged outside the work area.

3.0 NEGATIVE AIR PRESSURE SYSTEM

Negative pressure machines and the process of setting up a negative pressure space may be subject to patent rights (E.G. U.S. Patent Number 4,604,111). It is the sole responsibility of the Asbestos Contractor to obtain any required permission and/or licenses for the use of any patented methods. Do not use any patented process without the permission and/or license.

Asbestos Contractor specifically agrees to indemnify and hold harmless WKU for any liability that WKU, its successor or assigns, may incur because of, or in any way related to, Asbestos Contractor's use of patented and/or proprietary processes without obtaining permission and/or license for use.

3.1 GENERAL

Supply and maintain the required number of asbestos air filtration units to the site in accordance with these Technical Specifications.

Cabinet: Constructed of durable materials able to withstand rough handling and transportation, width of cabinet should be less than 30 inches. Cabinet shall be factory sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance. Access and replacement of all air filters shall be from intake end.

Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions taking into consideration debris loaded filters.

HEPA Filters: The final filter shall be HEPA media completely sealed on all edges with a structurally rigid frame. A continuous rubber gasket shall be located between the filter and the filter housing to form a seal. Each filter shall be individually tested and certified by the manufacturer for an efficiency of not less than 99.97% when challenged with 0.3 um dioctylphalate (DOP) particles. Testing shall be in accordance with Military Standard 282 and Army Instruction Manual 136-300-175A. Each filter shall bear a UL586 label stating performance under specified conditions. Each filter shall be labeled with the name of the manufacturer, serial number, airflow rating, efficiency, resistance, and the direction of airflow. Filters 99.99% efficient shall be used if available.

Pre-filters: Which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. The first stage pre-filter shall be a low-efficiency type (e.g. for particles 10 um and larger). The second stage (or intermediate) filter shall have a medium efficiency (e.g. effective for particles down to 5 um). Pre-filters and intermediate filters shall be installed either on or in the intake grid of the unit and held in place.

Safety and Warning Devices: The units shall have a lockout to prevent fan from operating without a HEPA filter. Units shall be equipped with automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights are required to indicate normal operation, too high a pressure drop across the filters *(i.e. filter overloading)* and too low of a pressure drop *(HEPA filter rupture)*.

Electrical Components: Shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriters Laboratories (UL). Each unit shall be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.

3.2 MANUFACTURERS

Manufacturer: Subject to compliance, manufacturers offering products that may be incorporated in the work include, but are not limited to:

Asbestos Control Technology, Inc. "Micro-Trap"
PO Box 183
Maple Shade, NJ 08052

Control Resource Systems, Inc. "Hog 2000"
670 Mariner Drive
Michigan City, IN 46360

Global Consumer Services, Inc. "Red Baron"
1721 N. Highland Avenue

Los Angles, CA 90028

NOTE: **This is a list of firms known to manufacture negative air machines. No manufacturers have been excluded and no attempt has been made to evaluate these products. Additional suppliers may exist. Product literature should be used to evaluate these machines to verify that products indicated are still being manufactured.**

3.3 PRESSURE DIFFERENTIAL

Provide a fully operational negative air system within the work area maintaining continuously a pressure differential across work area enclosures no less than 0.01 inches of water. Assure required pressure differential before disturbance of any asbestos-containing materials.

3.4 PREPARATION OF THE WORK AREA

Determining the Ventilation Requirements: Provide operational negative pressure systems supplying a minimum of one air change every 15 minutes. Determine the volume in cubic feet for the work area by multiplying floor area by ceiling height. Determine ventilation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate.

Ventilation Required (CFM) = Volume of work area (cu. ft.) /15 min

- ☑ *Determine Number of Units:* needed to achieve 15-minute change rate by dividing the ventilation requirement (CFM) above by capacity of exhaust unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters in the machines operating characteristics.
- ☑ Number of Units Needed = Ventilation Requirement (CFM)
- ☑ Capacity of Unit with Loaded Filters (CFM)
- ☑ Add one (1) additional unit as a backup unit

Location of Exhaust Units: Locate exhaust unit(s) so makeup air enters the work area primarily through the decontamination chamber and traverses work area as much as possible. Accomplish this by positioning the exhaust unit(s) at a maximum distance from the worker access opening or makeup air sources pulling make-up air across work area(s).

Place End of Unit: Or its exhaust duct through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall be sealed.

- ☑ **Vent to Outside of Building**

Supplemental Makeup Air Inlets: Required for proper airflow through the workspace by making openings in the plastic sheeting that allow air from outside the building into the work area. Locate auxiliary makeup air inlets as far as possible from the exhaust unit(s) (e.g., on an opposite wall), off the floor (preferable near the ceiling), and away from enclosure separating barriers.

Cover with flaps to reseal automatically if the negative pressure system should shut down for any reason. Spray flap and around opening with spray adhesive so that flap seals if it closes.

- ☑ IF MAKEUP AIR IS COMING FROM A CONTAMINATED SOURCE OR POTENTIALLY CONTAMINATED THEN IT SHOULD PASS THROUGH A HEPA FILTER BEFORE ENTERING WORK AREA. IF THIS IS DONE, SUPPLY AIR FANS WILL BE NECESSARY TO OVERCOME THE RESISTANCE OF THE HEPA FILTER. USE OF A NEGATIVE AIR MACHINE MAY BE A PRACTICAL MEANS OF ACCOMPLISHING THIS. CAUTION MUST BE USED TO INSURE THAT WORK AREA REMAINS UNDER NEGATIVE PRESSURE.

3.5 USE OF THE NEGATIVE PRESSURE SYSTEM

GENERAL: Each unit shall be serviced by a dedicated minimum 115V-20A circuit with overload device tied into an existing building electrical panel that has sufficient spare capacity to accommodate the load of all negative pressure units connected.

It is the Asbestos Contractor's responsibility to foresee that a sufficient electrical supply is available prior to starting the removal procedure. The Asbestos Contractor is responsible for locating the circuit breaker disconnect for the respectable circuit being used prior to making their connection and tagging the breaker, or disconnect with an appropriate tag to identify that circuit supplies their equipment with project contact information.

The Asbestos Contractor shall make certain that no vital WKU equipment is connected to the circuit they choose to use. If satisfactory receptacles for the anticipated loads are not readily available, the Asbestos Contractor shall notify WKU with sufficient advance notice for WKU to make available such circuits. At no times shall the Asbestos Contractor make alterations to WKU electrical systems.

TESTING THE SYSTEM: Test negative pressure system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set-up, and the exhaust unit(s) installed, start the unit(s) (one at a time).

Testing shall include, but not be limited to the following:

- ☑ Plastic barriers and sheeting shall move lightly inward.
- ☑ Curtain of decontamination units should move lightly inward.
- ☑ There shall be movement of air through the decontamination unit. Use smoke tube to demonstrate air movement from Clean Room to Shower Room, from Shower Room to Equipment Room, and from Equipment Room to Work Area.
- ☑ Use smoke tubes to demonstrate a positive motion of air across Work Area.
- ☑ Use a differential pressure meter or manometer to demonstrate a pressure difference of at least 0.01 inches of water across every barrier separating the work area from the ambient air.

Modify the Negative Pressure System: As necessary to successfully demonstrate the above.

Use of System during Abatement Operations: Start exhaust units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the work area is complete. *Do not turn off units at the end of the work shift or when abatement operations temporarily stop, negative air system shall be operational until work activity has clearance.*

Do not shut down negative air system during decontamination encapsulating procedures. Machines shall run 24 hours a day until final inspection and final air tests establish that the area has been decontaminated and the WKU representative has given final inspection approval.

Start abatement work farthest from the exhaust units and proceed toward them. If a power failure occurs immediately stop all abatement work, do not resume until exhaust units are operating.

At completion of abatement work, allow exhaust units to run to remove airborne fibers that may have been generated during abatement work and clean up and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement.

Dismantling the System: When a final inspection and results of final air tests indicate the area has been decontaminated, exhaust units may be removed. Properly dispose pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

4.0 SITE WORK

4.1 PREPARATION

Provide temporary power and lighting; ensure safe installation of temporary equipment per applicable electrical code requirements. *Temporary lighting shall be OSHA compliant.*

Pre-clean movable objects within the proposed work areas using High Efficiency Particulate Air (HEPA) vacuum equipment and/or wet cleaning methods. Remove such objects from work areas to a temporary location as designated by WKU. Protection of and accounting for the stored materials is the sole responsibility of the Asbestos Contractor.

Pre-clean fixed objects within the proposed work areas, using High Efficiency Particulate Air (HEPA) vacuum equipment and/or wet cleaning methods as appropriate, and enclose in minimum 6-mil polyethylene sealed with tape. Clean the proposed work areas using High Efficiency Particulate Air (HEPA) vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

4.2 EXECUTION

Carry out work in this section sequentially. Complete each activity before proceeding to the next.

Work Area: Is the location where asbestos-abatement work occurs. It is a variable of the extent of work of the contract. It may be a portion of a room, a single room, or a complex of rooms. A "work area" is considered contaminated during the work; it must be isolated from the balance of the building and decontaminated at the completion of asbestos-control work.

Completely Isolate: The work area shall be isolated from other parts of the building to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the work area(s) become contaminated with asbestos-containing dust or debris because of the work, clean those areas in accordance with recognized procedures. All such required cleaning or decontamination shall be at no additional cost to WKU.

Disable Ventilating Systems: All HVAC systems bringing air into or out of the work area shall be properly disabled. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent unscheduled restarting of equipment.

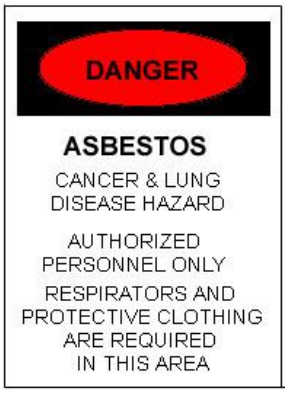
4.3 CONTROL ACCESS

Permit access: Access the work area only through the decontamination unit.

Visual Barrier: Where the work area is within view of occupied areas, provide a visual barrier of black 6-mil polyethylene sheeting so the work areas are not visible to building occupants.

Provide Asbestos Danger Signs: Affix proper signage at each visual and physical barrier.

Immediately inside door and outside critical barriers post an approximately 20 inch by 14 inch manufactured danger sign displayed with letters and styles as required by 29 CFR 1926.1101:



Provide spacing between lines at least equal to the height of the upper line.

Provide and display all signage required in accordance with Federal Regulations or State and Local Regulations. Warning signs shall be of a vertical format measuring twenty (20) inches in length and sufficient size and contrast as to be readily visible and legible.

Signs shall be posted at such a distance from regulated areas that an occupant may read the signs and take necessary protective steps before entering the marked area.

Provide all required emergency exits as required by the Kentucky State Building Code, Kentucky State Fire Marshal, and the Western Kentucky University Fire Safety Officer.

Remove and clean ceiling mounted objects, lights, etc., not sealed off and which interfere with asbestos abatement. Use localized water spraying or HEPA equipment during removal to reduce fiber dispersal. Use water only after electrical power has been turned off.

The Asbestos Contractor shall construct an approved airlock with curtained doorways of plastic sheeting at all entrances and exits to the work areas.

4.4 DECONTAMINATION UNITS

Asbestos Contractor shall provide personnel decontamination unit, on friable removal projects, consisting of connected rooms or spaces: clean room, drying room, shower room, equipment room.

All persons shall pass through decontamination unit into and out of work area.

Clean Room: Provide a room that is physically and visually separated for the purposes of changing into protective clothing.

Airlock: Airlocks shall be located between work area and equipment room, between equipment room and shower, between shower and clean room.

Drying Room: Provide an area for workers to dry after showering.

Shower Room. Provide a watertight, operational shower room.

Equipment Room: Require work equipment, footwear, and additional contaminated protective clothing to be left in this area prior to the worker advancing to the shower room.

The decontamination area shall be separated from the regulated area by an air lock. Air locks shall be used to separate the clean room, shower area and equipment room. An "air lock" is the area used to separate the clean room, shower room, and equipment room from the work area. It is accessible through doorways protected by two overlapping polyethylene sheets.

An equipment room with two curtained doorways, one to the work area and one to the shower room sufficient to accommodate at least one worker, shall be constructed. The equipment room shall meet applicable regulations.

A shower room with two airlocks, one to the equipment room and one to the clean room, shall be constructed. The shower room shall conform to the requirements of applicable regulations and shall contain a minimum of one shower with hot and cold water. Attention shall be paid to the shower to ensure against leaking of the showers. Furnish soap at in the shower room. Shower drains must be filtered according to applicable regulations.

A "clean room" with one airlock into the shower and one entrance or exit to non-contaminated areas of the building shall be constructed. The clean room shall provide space for storage of workers' non-contaminated items. Construct with applicable regulations using polyethylene sheeting to provide an airtight seal between the changing room and clean areas. Locate so that access to work area from changing room is through shower room. Require workers to remove all clothing in this room, don clean disposable coveralls, and respiratory equipment.

Asbestos Contractor shall require all persons without exception pass through this decontamination unit for entry into and exiting from the work area for any purpose.

Do not allow parallel routes for entry or exit. Do not remove equipment or materials through personnel decontamination unit. Do not allow asbestos contaminated items in this room.

4.5 EQUIPMENT DECONTAMINATION

The Asbestos Contractor shall construct an equipment decontamination enclosure system consisting of two totally enclosed chambers:

- ☑ Washroom constituting an airlock, with a curtained doorway to a designated area of the work area and a curtained doorway to the holding area.
- ☑ Holding area constituting an airlock, with a curtained doorway to the washroom and a curtained doorway to an uncontaminated area.

Decontamination enclosures shall be lined with sealed plastic at all joints.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an airlock as described in these qualifications.

4.6 CRITICAL BARRIERS

Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the work area with tape alone or with polyethylene sheeting. Provide sheet plastic barriers as required to completely seal openings from the work area into adjacent area. Seal the perimeter of all sheet plastic barriers with duct tape and/or spray cement.

Mechanically support sheet plastic independently of duct tape or spray cement so that seals do not support the weight of the plastic.

Cover floor of work area with two (2) individual layers of clear polyethylene sheeting, each at least 6-mil in thickness, turned up walls at least 12 inches. Form a sharp right angle at wall junction so that there is no radius that could be stepped on causing the wall attachment to be pulled loose.

Both spray-glue and duct tape all seams in floor covering. Locate seams in top layer 6 feet from or at right angles to seams in bottom layer. Install sheeting so that the top layer can be removed independently of bottom layer.

Cover walls in work area with two (2) layers of mechanically supported 6-mil polyethylene sheeting, sealed with tape, and/or spray-glue in the same manner as critical barriers. Tape all joints including the joining with the floor covering with tape or as directed by WKU's Representative.

4.7 MAINTENANCE OF ENCLOSURE SYSTEMS

Ensure that barriers and plastic linings with plywood are tightly sealed and taped. Repair damaged barriers immediately upon discovery.

Visually inspect enclosures at beginning of each work period.

Provide temporary power and lighting where no power source exists; ensure safe installation of temporary power sources and equipment for the duration of the project if necessary.

Asbestos work shall not commence until:

- ☑ Arrangements have been made for proper disposal of liquid and solid waste at acceptable sites; it must comply with Federal, State, and Local regulations.
- ☑ Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.
- ☑ Tools, equipment and material waste receptors are on hand.
- ☑ Arrangements have been made for building security.
- ☑ All other preparatory steps have been taken and applicable notices posted.

4.8 WET REMOVAL

General wet removal of surfacing material and other friable ACM shall be conducted utilizing negative pressure containment per KRS 401 KAR 58:040., and all applicable regulations including WKU EHS requirements by thoroughly wetting the ACM to be removed, prior to disturbance, by a fine mist of amended water prior to handling, scraping, stripping, and/or tooling to reduce fiber dispersal. Accomplish wetting by a fine mist of amended water, saturate material sufficiently to wet the substrate without causing excess dripping, allow time for water to penetrate material thoroughly.

Spray material repeatedly during the work process to maintain a continuous wet condition. Perforate outer covering of any insulation that has been painted and/or jacketed in order to allow penetration of amended water, or where necessary, carefully strip or scrape or lift away while spraying amended water on the material to minimize dispersal of asbestos fibers into the air. Remove saturated asbestos-containing material (ACM) in small sections from all areas. ***Do not allow material to dry out***. As it is removed, simultaneously pack material while still wet in plastic bags, clean outside and move to wash down station adjacent to material decontamination unit.

4.9 GLOVEBAG PROCEDURE

To be used only where permitted under 29 CFR 1926.1101 and/or any other applicable laws. However, use of a glove bag procedure shall not affect the Asbestos Contractor's duty to comply with all other applicable laws and/or standards.

Glove bagging shall be in accordance with Appendix G to 29 CFR 1926.1101.

- ☑ Area shall be sealed with curtain of two (2) layers of 6-mil. polyethylene.
- ☑ Clean up gross contamination that is accumulated on the floors. This shall be accomplished by spraying debris with (water) wetting material and placing it in appropriate containers.

- ☑ For wetting material use either amended water or a removal encapsulant.
- ☑ Prior to installation of the glove bag, removal tools will be put in the bag.
- ☑ Wrap glove bag around pipe, fold edges over, and seal all openings.
- ☑ Insert nozzle of sprayer in glove bag and seal around hose with tape.
- ☑ Insert vacuum hose in glovebag and seal around hose with tape.
- ☑ Thoroughly wet pipe insulation, cut insulation and continue spraying in seams, allow the saturated material to fall to the bottom of the bag.
- ☑ Completely clean pipe with sponge and water.
- ☑ Replace tools in tool pouch of glove bag and squeeze glove bag below the pouch, separating work portion from waste portion and seal with tape.
- ☑ HEPA vacuum top chamber of glove bag, collapse and remove all material.

Dispose of glove bags in drums placed immediately outside the entrance to each area where removal will take place, for this process. The drums will be sealed prior to removal from the area. Label all drums with signs in accordance with OSHA Regulations 29 CFR 1910.1101.

NOTE: During all phases of the removal and cleaning operation, use work procedures that result in an 8-hour Time Weighted Average (TWA) airborne fiber count less than the maximum allowed by law. If airborne fiber counts exceed this level, immediately mist the area with amended water and revise work procedures to maintain airborne fiber levels within the required limit.

4.10 ASBESTOS-CONTAINING RESILIENT FLOOR TILE REMOVAL

The Asbestos Contractor shall cover all stationary fixtures and horizontal surfaces with 6-mil polyethylene sheeting located within the work area.

A demarcated "regulated area" must be established for the work area (e.g. using critical barriers or polyethylene sheeting to enclose a work area).

Air registers, diffusers, or return air ducts located in the walls, ceilings, and floors or above accessible ceilings shall be sealed with 6-mil polyethylene plastic, taped and made airtight.

If necessary, the air conditioning and heating system shall be shut down by WKU's personnel prior to start of the removal work, *shutdown arrangements shall be requested prior to start of work*. A temporary air curtain shall be erected at the entrance to each room or to the entrance to a series of interconnecting rooms in a manner that will ensure containment of fibers within the work areas. This air curtain shall consist of at least two sets of polyethylene flaps overlapping as specified in this qualification to create an airtight seal and reduce air currents when personnel are entailing or leaving the work area. A shower is not required.

Reduced atmospheric pressure ("negative air") shall be maintained within the work area(s) from the start of floor tile disturbance until the area has been cleaned, a visual inspection may be conducted at the discretion of the WKU representative. This reduced air pressure shall be maintained between 0.01 and 0.02 inches of water static pressure. All work related to the release and removal of asbestos-containing resilient floor tiles and floor sheet covering shall be carried out in a manner that will prevent unnecessary breakage and release of asbestos fibers. Release of fibers will occur when tiles or sheets are broken, torn. Pulverizing or abrading shall not be permitted.

Workers shall be outfitted with all necessary safety gear as specified in OSHA standard 1926.1101 while working inside the work area. Disposable coveralls, including head covers and foot covers shall be worn. Respirators shall be worn as required by OSHA standard 1926.1101 and 1910.134.

Immediately before removal begins, the floor area to be removed shall be sprayed with amended water. The floor surface shall be kept wet throughout the removal operation, but amended water shall not be allowed to puddle on the floor or run off to other areas, especially to floor below.

Resilient floor tiles or sheet covering shall be released from the floor surface in whole tiles or sections as much as practical using straight hoes in a manual operation. Should dust become visible at any time during the releasing operation, the area shall be immediately misted with a garden type pump sprayer filled with amended water. Releasing of floor tiles or sheet covering shall cease until dust has been properly controlled.

Whole tiles and pieces broken during release from the floor shall be swept up using wetted brooms and shovels in a manner that will not create dust. Removed debris shall immediately be placed in doubled 6-mil polyethylene disposal bags. When bags have been filled, the bags shall be sealed.

Asbestos warning labels shall be attached to the bags. No bags shall be removed from the work area until a preliminary cleanup has been completed. Bags shall be wet-wiped twice before leaving work area. When all loose debris has been removed from the floor and placed in bags, the adhesive shall be removed which may also contain asbestos fibers. When floors have been cleaned of adhesive within practical limits, they shall be wet mopped twice and allowed to dry.

Remove all air curtains, seals, polyethylene, warning signs, and barriers following clearance and confirmation from WKU's representative.

Dispose of all waste material in a proper manner according to applicable regulations.

4.11 ASBESTOS-CONTAINING MASTIC ADHESIVE REMOVAL

A no-odor, water-base, non-hazardous, non-toxic, solvent must be used in this removal process. Acceptable solvents are Control No Odor Mastic Remover, as manufactured by Grayling Industries, Inc., 1008 Branch Drive, Atlanta, Georgia, 30201, phone number (404) 751-9095; or Sentinel 770 Odorless Adhesive Remover, as manufactured by Sentinel Chemical Co., Inc., 7714 Beech Street, Minneapolis, Minnesota, 55432, phone number (800) 373-0633, or equivalent. Asbestos Contractor shall submit to WKU's Representative a material safety data sheet on the proposed product.

Approval must be obtained from WKU's Representative in writing before the project begins.

The Asbestos Contractor shall certify in writing to WKU that utilization of the proposed solvent will not cause the waste materials generated to be classified as a hazardous waste under any existing federal, state, or local regulations. The Asbestos Contractor shall further ensure that the solvent will not damage painted wall surfaces or other surfaces with which it may come into contact.

Workers shall be supplied proper respiratory protection and protective clothing.

The adhesive material shall never be removed by sanding or grinding.

4.11.1 EXECUTION

- ☑ Apply adhesive solvent per manufacturer's instructions to areas within the workspace. Scrape or mop dissolved adhesive from area as required.
- ☑ Proceed with this process until the entire project area has been completed, repeat sequence as necessary to remove all visible remains of adhesive. When floors have been cleaned of the adhesive, they shall be wet mopped twice.
- ☑ Remove all air curtains, seals, polyethylene, warning signs, and barriers following clearance and confirmation from WKU's Representative.
- ☑ Dispose of all waste material in a proper manner according to applicable regulations and the contract Technical Specifications.

4.12 REMOVAL OF ASBESTOS-CONTAMINATED SOIL AND DEBRIS

SCOPE: This section shall be applied to the immediate areas only where visible debris is detected.

Begin all removal at the point of greatest distance from the entrance to the crawlspace or area and proceed toward the entrance. Remove the top two inches (2") of wet soil and place in plastic disposal bags as work progresses. Do not permit travel over fresh soil surface.

Reduced air pressure system (air filtering device) shall be operating continuously so that airflow is from the starting point of removal.

After the entire first layer of applicable soil is removed completely, workers shall change into clean coveralls, including fresh foot covers, at the crawlspace entrance. Remove a second two-inch (2") layer of soil following the same procedures as for the first layer. If buried asbestos-containing materials are found during this process, such material shall be dug up with approximately one inch (1") of surrounding uncontaminated soil and disposed of in plastic disposal bags.

Wet clean or encapsulate all barriers enclosing the work area. Maintain reduced air pressure (air filtering device) leaving area undisturbed to allow units to extract airborne contamination.

Removed soil shall be placed in plastic-lined drums for transportation to disposal site. Clean up work area, removing all bagged materials, tools, containers, equipment, etc.

Final Clearance testing shall be conducted under static conditions using NIOSH 7400 method. A final clearance value of 0.01 f/cc will be employed.

4.13 REMOVAL OF ASBESTOS CEMENT PANELS

The Asbestos Contractor will be responsible for removing any furniture and equipment from the rooms included in the wall panel removal areas of this project and for securing all items, which can be damaged, broken, or stolen within the area of the building where work will be undertaken.

Corridors leading to the work area shall be barricaded prior to setup operations. Unauthorized WKU personnel and public traffic shall be prohibited from the work areas and adjoining corridors.

Barricades as necessary to prevent entrance by those not involved in the abatement. Asbestos warning signs are to be posted in conspicuous places.

Air-monitoring consultants may monitor (at WKU discretion) fiber concentrations within the work area, inside adjacent rooms, or connecting hallways, The Asbestos Contractor shall comply as requested.

Air registers, diffusers and return air ducts located in the walls, ceilings, and floor or above accessible ceilings shall be sealed with 6-mil polyethylene plastic, and made airtight. If necessary, the air conditioning and heating system shall be shut down by WKU's personnel prior to start of the removal work, shutdown arrangements must be requested prior to start of work.

Walls, windows, door openings, and vertical room surfaces shall be covered with one layer of 6-mil polyethylene plastic held in place with tape, nailers, or adhesive as necessary to secure it in place throughout the work area. In rooms containing counters, fixed items or other objects which are not connected to the walls intended for removal, 6-mil polyethylene plastic shall be draped over and extended out onto the floor one foot and be sealed.

A temporary air lock shall be erected at the entrance to each room or to the entrance to a series of interconnecting rooms in a manner that will ensure containment of fibers within the work area. This airlock shall consist of at least two sets of polyethylene flaps overlapping as specified in the contract specifications to create an airtight seal at the wall and reduce air currents as required in the personnel decontamination chamber for this type work. Reduced atmospheric pressure (negative air) shall be maintained within the work area(s) from the start of panel disturbance until the area has been cleaned, encapsulated, and given clearance.

Prior to removal of asbestos-containing wall panels, all mounted items shall be carefully removed by skilled workers. Work related to the release and removal of asbestos-containing wall panels shall be carried out in a manner that will prevent the unnecessary release of asbestos fibers. Release of fibers will occur when panels are broken (especially into small pieces), pulverized, or abraded. Breaking of panels probably cannot be avoided, but shall be continuously controlled and held to a minimum. Pulverizing or abrading shall not be permitted.

Workers shall be outfitted with all safety gear specified in OSHA standard 1926.1101 while working inside the work area. Disposable coveralls, including head covers and foot covers shall be worn. Respirators shall be as required by OSHA standards. Hard hats are required during overhead work.

Immediately before removal, the area to be removed shall be sprayed with amended water to reduce the release of asbestos fibers from panels. The surfaces shall be kept wet throughout the removal operation, amended water shall not be allowed to puddle on the floor or run off.

Panels shall be manually removed in whole panels as much as practical using the appropriate tools. Remove screws or fasteners so that fibers released are captured by a HEPA vacuum. Should dust become visible during the operation, the area shall be immediately misted with amended water. Removing of wall panels shall cease until dust has been controlled. Panels shall be wrapped with 6-mil polyethylene, sealed airtight. Pieces broken during removal shall be swept up using wetted brooms and scoop shovels in a manner that will not create dust. Pieces shall be immediately placed in disposal containers, which have been lined with 6-mil polyethylene plastic bags. When a container has been filled, the plastic bag shall be sealed airtight and then the container lid installed and sealed. Asbestos warning labels shall be attached to the containers and packages.

No container shall be removed from the work area until a preliminary cleanup has been completed. Containers shall be wet wiped twice before passing through the outbound airlock.

4.14 REMOVAL OF ASBESTOS-CONTAINING ROOFING MATERIALS

Before beginning work in the area, fresh air intakes or other air supply registers located within the project area shall be sealed with 6-mil polyethylene sheeting, taped, and airtight.

Note: This shall be approved by WKU Department of Facilities Management prior to application.

The Asbestos Contractor shall comply with all provisions of 29 CFR Part 1926 Subpart M for Fall Protection, Subpart E for Personal Protective Equipment, Subpart N for equipment used to transfer material to and from roof, and all other applicable OSHA related standards for the work specified.

The Asbestos Contractor shall properly demarcate the asbestos-related work area by utilizing appropriate banner tape and signage and maintain the demarcation until project completion.

Workers shall be equipped with proper protective clothing including but not limited to disposable full-bodied coveralls, and gloves. Workers shall utilize respiratory protective equipment as required by the Kentucky Occupational Safety and Health Administration.

Work shall begin by applying a mist of amended water to the surface being abated. The roofing or flashing material shall be removed in whole pieces where possible. Roofing components shall be kept sufficiently wet during removal operations so that no visible emissions are released. Caution shall be exercised in the application of water to avoid interior building damage.

Remove sections of roofing/flashing and place material into pre-labeled 6-mil disposal bags or wrap all waste in 6-mil polyethylene sheeting for disposal purposes. All material shall be disposed of as ACBM waste. Tape and seal bags or polyethylene sheeting completely. Place appropriate warning labels on the wrapped waste packages as required by applicable regulations.

Note: The Asbestos Contractor shall use an enclosed dumpster lined with two layers of six-mil poly in lieu of double bagging with the acceptance of WKU and the waste disposal company. The double lining must fold over the top of the dumpster to meet and overlap. The dumpster shall be covered with a tarp that shall be tied in place when the dumpster is not in use.

Asbestos waste materials shall be lowered from the roof via lifts/cranes or shall be placed directly into a plastic lined dumpster via an enclosed chute. Asbestos waste materials shall be loaded into an appropriate container for transportation. This may be a polyethylene lined dumpster or dump truck provided approval has been obtained from the disposal site.

Dispose of all waste products generated by the process as asbestos waste in accordance with applicable rules and regulations.

4.15 POST-REMOVAL ENCAPSULATION OF AFFECTED AREAS

Following removal of friable asbestos-containing material, encapsulant shall be applied using airless spraying equipment, to all areas where friable asbestos-containing materials have been removed.

Approved Encapsulants (or equal):

- ☑ Asbestite 2000 - Arpin Engineering, Inc.
- ☑ Cable Coating No. 22P - American Coatings Corp.
- ☑ Protector 32.22 - H.B. Fuller Co., Foster Products Division

Encapsulation shall be done following air testing; worker protection equipment shall be worn. All encapsulation shall be conducted in accordance with recognized procedures, such as described in the National Institute of Building Sciences "Model Asbestos Guide Specification," 09805.

4.16 PROJECT DECONTAMINATION

Decontamination of the work area following asbestos abatement shall proceed as described.

If the asbestos abatement work is on damaged or friable materials, then the building space is deemed contaminated before start of the work and in need of decontamination. In this case, the work is a four-step procedure with two cleanings of the primary barrier plastic prior to its removal and two cleanings of the room surfaces to remove any new or existing contamination.

During this phase, as in all phases of the operation, the negative pressure system is used to remove airborne fibers generated by the abatement work.

4.16.1 EXECUTION

Work includes the decontamination of air in the work area which has been, or may have been contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials.

Work includes cleaning, decontamination, and removal of temporary facilities installed prior to abatement work including:

- ☑ Primary and Critical Barriers Erected
- ☑ Decontamination Unit
- ☑ Negative Pressure System

Work includes the cleaning, and decontamination of all surfaces (ceiling, walls, and floor) or the work area, and all furniture, equipment, etc. in the work area.

4.17 FINAL CLEANING

Final Cleaning: Carry out cleaning of all surfaces of the work area including remaining sheeting, tools, scaffolding, and/or staging by use of damp cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on barriers or surfaces.

Remove all filters in air handling system(s) and dispose of as asbestos-containing waste in accordance with legal requirements.

4.18 POST REMOVAL ENCAPSULATION

An appropriate encapsulant shall be applied, using airless spraying equipment, to all areas of the project where friable asbestos-containing materials have been removed.

Encapsulation shall be performed by the Asbestos Contractor in all areas after the WKU's Representative has completed a satisfactory visual inspection, prior to final clearance air-monitoring.

4.19 FINAL CLEARANCE

Following the completion of clean-up operations, the Asbestos Contractor shall notify WKU's Representative that work area(s) are ready for final clearance.

WKU shall arrange (at WKU discretion) to visually inspect the work area for any potentially suspect asbestos-containing material remaining in the work area.

If an unsatisfactory visual inspection is encountered, it shall be the responsibility of the Asbestos Contractor to re-clean the area at his own expense until the area is clear of all visible asbestos-containing material. If air-monitoring is to be conducted, it shall be the responsibility of the air-monitoring, solely, to determine if the area is satisfactorily clean. A visual inspection of the entire work area shall be conducted including: decontamination unit, all plastic sheeting, seals over ventilation openings; looking for debris from any sources, residue on surfaces, dust, bulk materials, or other matter. Upon completion of a successful visual inspection, the air-monitoring (at the discretion of WKU) shall sample the air in the work area for airborne fiber concentrations.

The air sampling (at WKU discretion) shall be conducted using sampling pumps calibrated at a flow rate of at least 10.0 and not more than 16.0 liters per minute using collection media and procedures in accordance with NIOSH Standard Analytical Method 7400.

Air volumes shall be sufficient to provide reliable results down to a concentration of 0.005 fibers per cubic centimeter of air. Minimum air volumes of 3000 liters shall be collected.

Aggressive sampling techniques shall be employed for clearance testing. Clearance samples shall indicate concentrations of airborne fibers <0.01 f/cc for release of the work area. Clearance air sampling shall be conducted with applicable regulations including but not limited to 401 KAR 63:042.

4.20 COMPLETION OF ABATEMENT WORK

Seal negative air machines with 6-mil polyethylene sheet and duct tape to form a tight seal at intake and before being moved from work area.

Asbestos abatement is complete upon meeting the work area clearance and fulfilling the following:

- ☑ Remove all equipment, materials, debris from the work site.
- ☑ Dispose of all asbestos-containing waste material as required by law. (See Section on Disposal of Asbestos-Containing Waste Material.)
- ☑ Dispose of all sheeting, seals, or other debris as asbestos-contaminated waste.
- ☑ Repair or replace all finishes damaged during the course of asbestos abatement.
- ☑ Fulfill Project Closeout Requirements.

4.21 DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

Disposal bags - ***Note:*** Asbestos Contractor may choose to utilize poly-lined dumpster and enclosed chute as alternate method for asbestos-containing roofing disposal vessels.

Provide 6-mil thick leak-tight polyethylene bags labeled with three (3) labels with text as follows:

4.21.1 *First Label:* Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication Standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS

4.21.2 *Second Label:* Provide in accordance with US Department of Transportation (D.O.T.) shipping requirements as found in 49 CFR Parts 171 and 172 - Hazardous Substances: Final Rule.

RQ HAZARDOUS SUBSTANCE
CLASS 9
NA2212
P. G. III

Also, affix D.O.T. "Class 9" Shipping label to each container

4.21.3 *Third Label:* Name of generator, location of generated waste, and date of waste generation:

NAME: **Western Kentucky University**

ADDRESS: **1906 College Heights Blvd.**
Bowling Green, Ky. 42101

DATE: _____

Rigid containers or drums: When asbestos waste bags are placed in rigid containers or drums, the outside of the container must be labeled the same as waste disposal bags, labeling includes:

4.21.4 *First Label:* Provide in accordance with 29 CFR 1910.1200 of OSHA's Hazard Communication Standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS

4.21.5 *Second Label:* Provide in accordance with US Department of Transportation (D.O.T.) shipping requirements as found in 49 CFR Parts 171 and 172 - Hazardous Substances: Final Rule.

RQ HAZARDOUS SUBSTANCE
CLASS 9
NA2212
P. G. III

Also, affix D.O.T. "Class 9" Shipping label to each container

4.21.6 *Third Label:* Name of generator, location of generated waste, and date of waste generation:

NAME: **Western Kentucky University**

ADDRESS: **1906 College Heights Blvd.**
Bowling Green, Ky. 42101

DATE: _____

4.22 Disposal of Waste

Dispose of asbestos-containing waste at a landfill licensed and approved to accept asbestos waste. Make necessary notification to landfill that asbestos-containing waste will be delivered for disposal.

At disposal site, unload containerized waste:

- ☑ At disposal site, containerized waste shall be carefully unloaded from the truck. If containers are broken or damaged, return to work site for re-bagging. Clean entire truck and contents using procedures set forth in: Project Decontamination.
- ☑ At storage, site truck and loading area are a controlled work area; containerized waste is transferred to storage area by site personnel. All containers, including damaged ones, will be transferred. Clean truck with asbestos-specific decontamination procedures.

At completion of hauling and disposal of each load, submit copy of waste manifest, chain of custody form, and landfill receipt to WKU.

Asbestos-containing waste material that is packaged and labeled in accordance with applicable regulations shall be disposed of at designated sanitary landfills by the Asbestos Contractor after:

- ☑ Notice to appropriate agencies, including Western Kentucky University.
- ☑ Notice and Permit from Appropriate Federal, State, and Local Agencies.
- ☑ The Asbestos Contractor shall assure that friable and non-friable asbestos-containing material is disposed of in accordance with applicable regulations.
- ☑ Carefully load containerized waste on sealed trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the materials.
- ☑ Do not store disposal-bagged material outside of the work area. Take bags from the work area directly to a sealed truck or dumpster.
- ☑ Do not transport disposal-bagged materials on open trucks, double-bagged material may be transported on open trucks in sealed drums. Label drums with same labels as bags, uncontaminated drums may be reused. Contaminated drums shall be disposed of as asbestos-containing waste per this specification.

4.23 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

When cleanup is complete, it shall be the responsibility of WKU to:

- ☑ Relocate objects moved to temporary locations in the course of the work to their proper positions. Re-clean objects after they are in position.
- ☑ Re-secure mounted objects removed in the course of the work in their former positions. Re-clean objects after they are re-secured.
- ☑ Re-establish HVAC mechanical and electrical systems.
- ☑ As the work progresses, and to prevent exceeding available storage capacity on site, the Asbestos Contractor shall remove containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of Federal, State and Local disposal authorities.
- ☑ Disposal shall be the responsibility of the Asbestos Contractor.
- ☑ All runoff liquids from work areas, decontamination areas, and otherwise contaminated areas shall be disposed of in accordance with Federal, State and Local wastewater disposal requirements.

4.24 STANDARDS, DOCUMENTS, REFERENCES, AND REGULATIONS

Compliance by the Asbestos Contractor with all applicable Federal, State, Local, and WKU regulations and use of the best available technology, procedures, and methods for, identification, preparation, execution, cleanup, disposal, and safety is required and shall be utilized. *The current WKU Asbestos Operations and Maintenance Program along with all applicable Federal, State, and Local regulations shall be consulted and followed for all asbestos-related work activities conducted on properties owned or maintained by Western Kentucky University.*

5.0 QUALIFICATION QUESTIONNAIRE

All ANSWERS AND ENTRIES SHALL BE SPECIFIC AND COMPLETE and shall only be completed once a thorough and complete understanding of the Western Kentucky University Asbestos Operations and Maintenance Program has been established. Except for signatures, all shall be typed or hand printed with ink. Do not cross out any headings or instructions.

The signatory of this Asbestos Contractor Qualification Statement guarantees and acknowledges the understanding and comprehension of this document and the compliance of the Western Kentucky University Asbestos Operations and Maintenance Program and the truth and accuracy of all statements and of all answers to the interrogatories hereinafter made. Knowingly falsifying information shall void and terminate all contracts and agreements.

1. How many years have your current firm conducted business as an Asbestos Contractor under its present name? _____; under what other names has the firm operated under? _____ (attach supporting documentation).

2. How many years experience in asbestos-related work has your firm had as an Asbestos Abatement General Contractor? _____; as an Asbestos Abatement Subcontractor? _____; as an Asbestos Consultant? _____; as an Asbestos Inspector? _____

3. List the ***major*** asbestos-related projects that the firm has performed within the last ten years.

_____
_____
_____
_____
_____
_____
_____
_____
_____

4. On a separate sheet(s), provide a description of each of the projects listed above including information about the work site, volume of asbestos-related work activity, and ancillary demolition required. Areas of specific experience include projects involving power plants, boilers, industrial sites, universities or colleges, and other larger facilities.

5. Has your firm ever failed to complete *any* asbestos-related project that you were hired to perform? _____ If so, why, where, and when? _____

6. Has any owner, officer, or partner of your firm ever failed to complete a project handled in his own name or other name? _____ If so, state name of individual, name of owner, reason therefore, and bonding company that covered the failure. _____

7. In what other lines of business is this firm affiliated with directly or indirectly? _____

8. Has your firm preformed past asbestos-related work for Western Kentucky University? _____, If so when, and where? _____

9. List the ***asbestos-related*** experience of the ***principal officers (forepersons and supervisors)*** of your organization. *All Asbestos Contractors providing removal for friable asbestos materials shall provide the services of a Commonwealth of Kentucky Department of Environmental Protection, Division for Air Quality accredited* ***Asbestos Project Designer*** *for the design of friable asbestos removal projects on properties owned or operated by Western Kentucky University.* Attach ***asbestos-related*** experience documentation for ***all personnel*** including ***current*** Commonwealth of Kentucky Department of Environmental Protection and Division for Air Quality Asbestos Accreditations, conforming to 401 KAR 58:005 for each employee who may perform work on properties owned or operated by the University. If new employees are added to the workforce, this same documentation shall be provided prior to the employee actively starting work on University asbestos-related projects. _____

10. Attach documentation demonstrating the existence of programs for personal air-monitoring, employee training and medical surveillance as required by OSHA 29 CFR parts 1910 and 1926.

11. Provide a listing of ***all*** *citations and/or notices of violation received for asbestos-related work activities including source, problem, and disposition*. _____

12. Provide a listing of ***all*** insurance policies for asbestos-related work including carrier, coverage, and limits. _____
_____
_____
_____
_____ (attach supporting documentation).

13. Indicate firm's current Commonwealth of Kentucky Division for Air Quality Asbestos Abatement Certificate number and provide a copy. _____

14. Indicate firm's current Bowling Green/Warren County Contractor License number and provide a copy *(or submit within 5 working days after the bid is awarded)*. _____

15. Provide a Material Safety Data Sheet (MSDS) for ***all*** goods and supplies to be used on University worksites. ***MSDS's shall be updated and kept current throughout the project.***

_____ _____
(Signature) *(Date)*

Thank you, please sign and date upon completion

Revised 9/14/2010

APPENDIX I

Certificate of Worker Acknowledgment for Asbestos Abatement Work

Project Name: _____ Start Date: _____

Project Address: _____

Project Abatement Contractor: _____

Warning!

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER, DISEASE, AND ASBESTOSIS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with properties owned or maintained by Western Kentucky University (WKU) for the above project requires that: **1)** You be supplied with the proper respirator and be trained in its use; **2)** You be trained in safe work practices and in the use of the equipment found on the job; **3)** You receive an annual medical examination. **4)** You abide by the Western Kentucky University Asbestos Operations and Maintenance Program. These things are to be done at no cost to you. By signing this certification, you are assuring Western Kentucky University that your employer has met these obligations to you and WKU.

RESPIRATORY PROTECTION: I have been trained annually in the proper use of respirators, and informed on the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have read this manual thoroughly, and I understand the proper use of respiratory protection. I have been equipped at no cost to me with the proper respirator to be used on the above referenced project. I agree to use this respirator properly.

TRAINING COURSE: I have been trained annually in the dangers inherent in handling and removing asbestos and in breathing asbestos dust. I have been trained in the proper work procedures and personal and area protective measures. This training has been provided by my employer at no cost to me. The topics covered in the course included the following:

- ☑ **Physical characteristics of asbestos**
- ☑ **Work practices including hands on and on-job training**
- ☑ **Air monitoring, including personal, area, and clearance**
- ☑ **Health hazards associated with asbestos**
- ☑ **Negative air systems**
- ☑ **Respiratory protection**
- ☑ **Personal decontamination procedures**
- ☑ **Use of protection equipment**

MEDICAL EXAMINATION: I have had an asbestos medical examination within the past twelve (12) months that was paid for by my employer. This examination included an evaluation of a chest x-ray.

~ I UNDERSTAND AND AGREE WITH THIS CERTIFICATE OF WORKER ACKNOWLEDGMENT ~

Typed or Printed Name: _____

Signature: _____ Date:_____

Commonwealth of Kentucky DAQ Accreditation Number: _____

Revised 9/2/2010

APPENDIX J

Certificate of Worker Release for Asbestos Abatement Work

Project Name: _____ Start Date:_____

Project Address: _____

Project Abatement Contractor: _____

In consideration of my employment by the above Contractor in connection with the removal of asbestos, disposal of asbestos or other work in asbestos-containing work areas of properties owned or maintained by Western Kentucky University (WKU). The undersigned does hereby acknowledge, warrant, represent, covenant, and agree to abide by the WKU Asbestos Operations and Maintenance Program and as follows:

- ☑ I acknowledge and understand that I have been or will be employed in connection with the removal and disposal of asbestos or other work in asbestos-contaminated areas. I acknowledge that I have been advised of and I understand the dangers inherent in handling asbestos-containing materials and breathing asbestos-contaminated dust, including but not limited to ***the fact that asbestos can cause asbestosis and is a known carcinogen and can cause various types of cancer.***

- ☑ I acknowledge and understand that ***any contact with asbestos, whether it can be seen or not, may cause asbestosis and various forms of cancer that may not show up for many years.*** I covenant and agree faithfully to take all precautions required of me.

- ☑ ***I knowingly assume all risks of potential exposure to asbestos.*** I hereby covenant not to sue, and release and forever discharge WKU, their Building Manager, Architect, Consultant, Testing Company; all their directors, officers, employees, nominees, personal representatives, affiliates, successors, and assigns for, from and against all liability whatsoever, at common law or otherwise, except any rights the undersigned may have under the provisions of the applicable workmen's compensation laws. Except as specifically set forth herein, I hereby waive and relinquish any and all claims of every nature which I now have or may have claim to have which are in any way, directly or indirectly, related to exposure to asbestos or asbestos-containing materials.

- ☑ ***I hereby warrant and represent that I have not been disabled, laid-off, or compensated in damages otherwise, because of the disease asbestosis or lung cancer.***

- ☑ ***I represent that I can read the English language, or that I have had someone read this instrument to me, and I understand the meaning of all the provisions contained herein.***

⚠ Warning!

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER, DISEASE, AND ASBESTOSIS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

~ I UNDERSTAND AND AGREE WITH THIS CERTIFICATE OF WORKER RELEASE ~

Typed or Printed Name: _____

Signature: _____ Date: _____

Commonwealth of Kentucky DAQ Accreditation Number: _____

Revised 9/2/2010

APPENDIX K

Asbestos Management Personnel

Department of Environmental Health and Safety

Asbestos Program Coordinator

Laura Tomlin ~ Office 270-745-2236

Asbestos Program Liaison

Primary - Laura Tomlin ~ Office 270-745-2236
Secondary – Sharmila Pradhan ~ Office 270-745-2054

Departmental Asbestos Coordinators

Agricultural Farm Complex

Primary – Joey Reynolds ~ Cell 270-991-5982

Facilities Management

Building Services - Judy Blankenship ~ Office 270-745-5822
Maintenance Services - Charles Harrison ~ Office 270-745-5821
Plant Operations - Dale Dyer ~ Office 270-745-6179

Housing and Residence Life

Primary - Pam West ~ Office 270-745-2100

Information Technology Division

Primary – Chris Roberts ~ Office 270-745-8918

Planning, Design & Construction

Primary - Ben Johnson ~ Office 270-745-2075
Secondary – Bryan Russell ~ Office 270-745-5818

Student Life Foundation

Primary - Donald Stoneburg ~ Office 270-796-3052

Telecommunications
Network & Computing Support

Primary - Edwin Craft ~ Office 270-745-6370
Secondary – Tammi Beach ~ Office 270-745-6370

Revised 9/2/2010

APPENDIX L

Approved Asbestos Contractor List

January 1, 2010 – January 1, 2011

All asbestos management, consulting, inspecting, testing, or removal contractors shall complete an initial Qualification Questionnaire for Asbestos Contractors (Appendix H), and have approval from the Western Kentucky University Asbestos Program Coordinator, prior to bidding or working at properties owned or maintained by Western Kentucky University (WKU). Annual renewals shall be submitted prior to January 1 each year for approval to provide asbestos related work activities for properties owned or maintained by WKU for that year. *All asbestos related contractors shall have a current, approved Appendix H on file with the University Asbestos Program Coordinator prior to bidding or conducting work practices.* Asbestos Contractors approved to conduct asbestos work activities on properties owned or maintained by WKU are listed below.

~ <u>Asbestos Management, Consulting and Testing</u> ~

This list is in alphabetical order, there is no price contract for asbestos management, consulting or testing contractors.

✶ **Micro-Analytics, Inc.**
3310-C Gilmore Industrial Boulevard
Louisville, Ky. 40213
Contact: **John Holley ~ 502-964-8737**

✶ **Quality Air Management, Inc.**
106 Pebble Drive
Glasgow, Ky. 42141
Contact: **Mark Younkin ~ 270-678-9227**

- **Resolution, Inc.**
1101-A Darbytown Drive
Nashville, TN 37207
Contact: **Ron Francis ~ 615-865-8813**

- **EnSafe Inc.**
1148 College Street
Bowling Green, KY 42101
Contact: **Brandon Keltner ~ 270-843-1622**

~ Asbestos Abatement ~

General Operations and Maintenance Projects

Asbestos abatement for General Operations and Maintenance Projects for properties owned or maintained by WKU shall be performed under the University's Department of Purchasing asbestos abatement price contract awarded to ROMAC, Inc. WKU Project Managers shall schedule directly with:

- **ROMAC, Inc.**
  136 Outer Loop
  Louisville, Ky. 40214
  Contacts: **Carolyn Widman ~ 800- 548-3596**
  John Fulkerson ~ 502-468-2482

Capital Improvement, Major Maintenance Repair, and Minor Repair Renovation Projects

Asbestos abatement for Capital Improvement Projects, Major Maintenance Repair Projects, and Minor Repair Renovation Projects for properties owned or maintained by WKU may utilize the above contractor under the University's Department of Purchasing price contract, or solicit bids from the list of approved asbestos abatement contractors below. WKU Project Managers shall schedule directly with the chosen contractor.

This list is in alphabetical order, there is no price contract for asbestos removal for Capital Improvement, Major Maintenance Repair, or Minor Repair Renovation Projects in buildings owned or operated by Western Kentucky University.

- **ROMAC, Inc.**
  136 Outer Loop
  Louisville, Ky. 40214
  Contacts: **Carolyn Widman ~ 800- 548-3596**
  John Fulkerson ~ 502-468-2482

Revised 9/2/10

APPENDIX M

Safe Operating Procedure

Asbestos Containing Floor Tile & Mastic Removal

At this time, all asbestos containing floor tile and mastic in properties owned or maintained by Western Kentucky University shall be performed by Commonwealth of Kentucky accredited asbestos abatement workers under the University's Department of Purchasing asbestos abatement price contract. Please see **APPENDIX L ~ Approved Asbestos Contractor List** for contractor contact information.

Laura Tomlin 745-2236
Asbestos Program Coordinator
Environmental Health and Safety
Western Kentucky University

~ PLEASE REMEMBER TO WORK SAFELY ~

Revised 9/2/2010

APPENDIX N

~ Non ACBM ~
Building Construction List

WKU adheres to a modified version of the *Asbestos Hazard Emergency Response Act* (AHERA), a provision of the 1986 *Toxic Substances Control Act* (TSCA), to manage *asbestos containing building material* (ACBM) in buildings owned or maintained by the University.

The following buildings have been determined to contain no ACBM and subsequently placed on the WKU Non-ACBM Building Construction List:

- Athletic Batting Practice Building
- Baseball Concessions Building
- Baseball Clubhouse
- Center for Engineering and Biological Sciences
- Chandler Chapel and Columbarium
- Clinical Education Complex
- Chill Water Plant
- College of Education Building
- Diddle Arena *(**interior only**)*
- Glasgow Extended Campus
- Guthrie Clock Tower
- Health Services Building
- Horticultural Greenhouses
- Houchens–Smith Stadium West
- Intramural Sports Complex Building
- Mass Media & Technology Hall
- New Food Service
- Northeast Hall *(**interior only**)*
- Parking Structure # 2
- Parking and Transportation Services Building
- Science & Technology Hall (College High Hall)
- Schneider Hall
- Softball Complex Building
- South Campus
- Southwest Hall *(**interior only**)*
- Snell Hall
- Student Publications Building
- Student Success Center
- WKU's Center for Research and Development *(**interior only**)*
  ~ API, CDC, ICC, ICSET, Halton, MCC, Perot, Small Business Accelerator

The following criterion qualifies a WKU building as free of ACBM and only applies if the structures were constructed or fully renovated after October 12, 1988:

Under the Asbestos Hazard Emergency Response Act, (AHERA) 40 CFR 763.85(a), as defined in 40 CFR 763.103; (1) an architect or project engineer responsible for the building construction, or an accredited asbestos inspector, signs a statement that no ACBM was specified as a building material in any construction document for the building or (2) to the best of their knowledge, no ACBM was used as a building material in the building.

Rev. 9/2/2010

APPENDIX O

Safe Operating Procedure

Valid January 1, 2010 – January 1, 2011

Asbestos Containing Brake Inspection and Servicing

~ Use this procedure when removing non-friable asbestos containing brake pads/shoes utilizing University trained employees ~

Purpose. This provides guidance on reducing exposure to asbestos/ceramic fibers during brake inspection and service. This procedure shall be used if less than 5 pairs of brakes are inspected, disassembled, reassembled and/or repaired per week.

General. Some brake pads and shoes contain asbestos or ceramic fibers. The wet method is the most practical way to reduce exposure to asbestos/ceramic fibers during brake inspection/service.

Health Effects. Inhaling asbestos and ceramic fibers can cause serious lung disease and lung cancer. The risk of developing lung cancer is ten times greater if you smoke. Not everyone exposed to asbestos gets lung disease. For those who get an asbestos related disease, it takes 15-20 years to develop. Doctors recommend that you quit smoking if you work around asbestos.

Control. Protecting yourself from asbestos and ceramic fibers when working with brakes isn't complicated or hard. ***Do not direct compressed air onto any brake component or give cause to fibers becoming airborne. Do not sand, dry sweep, dry scrape, drill, saw, bead-blast, mechanically chip or pulverize brake pads/shoes. No eating, drinking, smoking, chewing gum or tobacco, or applying cosmetics in the work area.*** What follows is a step-by-step procedure that reduces your exposure to airborne fibers called the "Wet Method." The "Wet Method" eliminates the need for using a respirator. Use the "Wet Method" for all brake materials since even non-asbestos ceramic fibers carry a potential health risk.

Before Starting. The Departmental Asbestos Coordinator for the Auto Shop shall contact the WKU Asbestos Program Coordinator to determine the current policy for disposal of asbestos waste and to obtain asbestos disposal bags for the operation.

Materials required performing this procedure:

- Disposable Towels or Rags
- Asbestos Disposal Bags
- Spray Bottle
- Liquid Soap
- Duct Tape

Protective clothing and equipment to perform this procedure:

- Safety goggles
- Rubber gloves
- Disposable coveralls

⚠ Warning!

Do not sand, dry sweep, dry scrape, drill, saw, bead-blast, or mechanically chip or pulverize brake parts, pads or shoes. Do not direct compressed air onto any brake component or give cause to fibers becoming airborne.

Steps to Perform the Wet Method:

1. Prepare the soap solution by adding two tablespoons of liquid soap to one gallon of water and slowly shake to mix the soap with the water. Place the soap solution in a plastic spray bottle and adjust the nozzle to produce a very fine mist when the trigger is pulled.

⚠ Caution!

Wear safety glasses when using this procedure

2. Have enough asbestos disposal bags at the vehicle to use two for each wheel being serviced plus one extra to collect and double bag all the waste generated from the repair. These are special impermeable 6 mil plastic bags with asbestos warning labels printed on each side that can be obtained from the Asbestos Program Coordinator; ***they shall not be disposed of in the trash***.

⚠ Caution!

Floors become slippery when wet with the liquid amended solution. Use caution to contain the solution in the work area.

3. After the vehicle is raised and safely supported with sufficient capacity rated jack stands, place an asbestos disposal bag flat on the floor directly under the wheel/tire assembly, place disposable towels or rags on the disposal bag underneath the tire before removing the wheel. The rags/towels absorb the asbestos contaminated soap solution dripping from the caliper, rotor, backing plate or brake drum. The disposal bag keeps the water from running off and contaminating the floor.

Warning!

Do not sand, dry sweep, dry scrape, drill, saw, bead-blast, or mechanically chip or pulverize brake parts, pads or shoes. Do not direct compressed air onto any brake component or give cause to fibers becoming airborne.

4. As each wheel is being removed a second person will spray the soap solution on the front of the caliper/rotor or brake drum, and inside the wheel rim with a fine mist. Starting about 18 inches from the surface dampen the area, then move to about 12 inches and thoroughly wet all brake parts. The person spraying shall reach around the tire and shall not get underneath the vehicle at anytime. All re-usable parts should be thoroughly wet then wiped clean with disposable towels or rags as they are removed. If needed, more soap solution can be applied to these parts in order to remove the residue. Keep towels or rags wet to prevent any fibers from becoming airborne. Repeat this process as other brake parts get exposed.

Caution!

Floors become slippery when wet with the liquid amended solution. Use caution to contain the solution in the work area.

5. Place the wet towels, rags and used brake pads/shoes in the asbestos disposal bag. Do not allow the towels/rags to dry before placing in the disposal bag (handling dry towels unduly exposes you to the dust).
6. As each wheel is completed, twist the bag closed and duct tape the top forming a "neck". Do not squeeze the air out of the bag after the top is gathered, bend the neck down and tape again, this forms an airtight seal. The bag is then placed inside a second unsealed bag used to collect all consecutive bags used during this operation.
7. Repeat the above steps (3 through 6) for each wheel being serviced using new disposable towels or rags and disposal bag for each wheel.
8. After the last bag is completed and placed inside the collection disposal bag, twist that bag to tightly seal and duct tape the top forming a "neck". Do not squeeze the air out of the bag after the top is gathered, bend the neck down and tape again, this forms an airtight seal. Print the date, work order number and your name on the outer disposal bag. The double-bagged waste is then placed into the storage drum specified by the Asbestos Program Coordinator prior to starting the procedure.

Note: The procedure described above does not authorize you to disturb asbestos containing materials (ACMs) by such tasks as drilling, sanding, cutting, chipping or otherwise handling an ACM that is not intact or will not be kept intact and only applies to brake pads and shoes.

Laura Tomlin 745-2236
Asbestos Program Coordinator
Environmental Health and Safety
Western Kentucky University

Revised 9/2/2010

APPENDIX P

Safe Operating Procedure

Asbestos Containing Vertical Surface Glue-dot Removal

At this time, all asbestos containing vertical surface glue-dot removal (chalk-board/bulletin-board adhesive) in properties owned or maintained by Western Kentucky University shall be performed by Commonwealth of Kentucky accredited asbestos abatement workers under the University's Department of Purchasing asbestos abatement price contract. Please see **APPENDIX L ~ Approved Asbestos Contractor List** for contractor contact information.

Laura Tomlin 745-2236
Asbestos Program Coordinator
Environmental Health and Safety
Western Kentucky University

~ PLEASE REMEMBER TO WORK SAFELY ~

Revised 9/2010

Appendix Q

Federal EPA Exclusion Requirements

For New Construction

Federal regulation 40 CFR 763 Subpart E provides exclusions for new construction at WKU. Paragraph (7) states that, "An architect or project engineer responsible for the construction of a new … building built after October 12, 1988, or an accredited inspector signs a statement that no ACBM was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACBM was used as a building material for the building."

As of CY 2011, in order to meet this exclusion, a letter as defined in Appendix Q "New Construction Exclusion Letter" must accompany any new buildings constructed at WKU or similar letter or document to specify the building is asbestos-free.

An example of wording for such letter is shown below:

Ms. Laura L. Tomlin
Western Kentucky University
Department of Environment, Health and Safety
1906 College Heights Boulevard #11046
Bowling Green, KY 42101-1046

Re: EPA requirements for asbestos-free new construction at WKU

Ms. Tomlin:

As architect/project engineer/general contractor, I state that to the best of my knowledge no asbestos containing building materials were used or specified in the construction of "ABC Building" on property owned by Western Kentucky University.

Sincerely,