



ASBESTOS-CONTAINING MATERIAL
OPERATIONS & MAINTENANCE PROGRAM
ARRINGTON MANOR
2225 COLLEGE STREET
COLUMBIA, SOUTH CAROLINA

D3G PROJECT NUMBER:
2023-0878

REPORT ISSUE DATE:
October 17, 2024

PREPARED FOR:
ARRINGTON MANOR
2225 COLLEGE STREET
COLUMBIA, SOUTH CAROLINA

A handwritten signature in blue ink, appearing to read 'Kimberly Dingledine'.

Kimberly L. Dingledine
AHERA Management Planner

Signature

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Keith Bayer
Managing Director of Environmental Services

Signature

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1.0 Introduction

The purpose of this Asbestos-Containing Material Operation and Maintenance (O&M) Program is to develop a strategy to manage asbestos-containing materials (ACM) within the Arrington Manor, located at 2225 College Street in Columbia, South Carolina. This plan shall provide safety procedures that will prevent the creation of airborne asbestos fibers, protect employees who may accidentally impact or disturb ACM during their job activities, and prevent building contamination from asbestos fiber release. This O&M Program provides practices and procedures that comply with applicable regulatory requirements and guidance regarding operations and maintenance activities that impact ACM.

1.1 Site Specific Asbestos Concerns

The subject property consists of one (1) six-story age-restricted apartment structure constructed in 1971. The subject property structure contains a total of fifty-eight (58) residential dwelling units. According to a limited asbestos survey conducted by Ms. Kathryn Hubicki, a State of South Carolina licensed Asbestos Building Inspector (license #BI-01079) with One Source Environmental, LLC (OSE), on November 15, 2023, textured ceiling materials, vinyl flooring and covebase materials and associated mastics, ceramic tile and grout, undersink coating materials, transite panels, mirror mastics, caulking materials and roofing materials were identified and/or presumed to contain asbestos. The ceiling texture is typically considered to be a friable material (crushable by hand pressure) if impacted. The remainder of the identified and presumed ACMs are considered to be non-friable and all materials were observed to be in good condition, with the exception of the textured ceiling materials located in the entry of unit 507. It should be noted that a comprehensive asbestos inspection was not performed of the facility. Activities which may impact the identified asbestos-containing materials are not permitted to be done by untrained maintenance personnel or tenants of the facility.

1.2 O&M Program Objectives

This Asbestos Operations and Maintenance Program for the Arrington Manor, located at 2225 College Street in Columbia, South Carolina, is intended to manage known asbestos-containing building materials located within the facility.

The site maintenance personnel and other trades conducting work practices at the subject property will be subjected to the Occupational Safety and Health Administration (OSHA) asbestos regulations. According to the regulations, ownership/management of a building that contains known or presumed asbestos-containing materials presents notification and training responsibilities under the OSHA asbestos standards. The recommendation was made to monitor the presumed asbestos-containing materials under an Operation and Maintenance (O&M) Program. This O&M Program is being established to prevent asbestos fiber release episodes through:

- Establishing safe practices for both routine and emergency maintenance activities involving areas containing ACM.



- Training of property managers and service personnel, including custodial and maintenance workers, to establish the proper awareness and understanding of work practices vital to the success of this program.
- Notification of contractors and trades who may come into contact with identified and/or presumed ACM through the distribution of a "letter of notification" (See Appendix G).
- Site-specific maintenance/repair procedures, which include special cleaning procedures and a permit system for any work which, may disturb ACM in the subject buildings.
- Emergency response procedures in the event of accidental dislodging of ACM managed by the responsible site maintenance supervisor.
- Periodic monitoring/surveillance, which includes the completion of an ongoing inspection of ACM condition and monthly completion of a checklist for ACM condition, semi-annual re-inspection of the ACM area, and air monitoring for fiber levels upon a major release episode.
- This program includes central record-keeping where copies of completed forms, this program, the original asbestos survey, and all periodic monitoring/surveillance reports are kept.
- Provisions for maintaining the ACM in as good a condition as possible.

2.0 Overview of the O & M Program

2.1 Purpose

Ms. Kathryn Hubicki, a State of South Carolina licensed Asbestos Building Inspector (license #BI-01079) with One Source Environmental, LLC (OSE), conducted a limited asbestos survey at the subject property on November 15, 2023 on behalf of D3G. The survey was conducted in accordance with practices described within the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the inspection was limited to accessible areas of the facility and is not considered to be in full compliance with pre-renovation standards (40 CFR 61 Subpart M) or State of South Carolina regulations. The structure is proposed for significant rehabilitation; however, as it is currently occupied, only limited sampling was able to be conducted at this time. Therefore, additional sampling and inspection of 100% of the units will be required prior to renovation activities to comply with EPA and State of South Carolina asbestos regulations. All suspect ACMs were identified during the course of the inspection. Sampled materials included drywall, joint compound, ceiling tiles and textured ceiling materials. An asbestos-containing material is defined as containing greater than 1% asbestos. Samples were analyzed via Polarized Light Microscopy (PLM). In addition, six (6) samples of joint compound and five (5) samples of textured ceiling materials were reanalyzed via the EPA Point Count method to confirm the asbestos content of those materials. The ASTM E 2356-18 standard and the State of South Carolina require additional analysis of non-friable organically bound (NOB) materials (i.e. floor tiles, covebase, mastics, roofing materials, caulks) reported as non-detect using visual estimation via Transmission



Electron Microscopy (TEM) to confirm the asbestos content of those materials. However, NOB materials were not sampled and were presumed to contain asbestos. The following table itemizes the sampled materials and their respective asbestos concentrations:

SAMPLE NUMBER	SAMPLED MATERIAL	LOCATION	% ASBESTOS
1A	Drywall	6th FL Cable CL	None Detected
1B	Drywall	501 Hall CL	None Detected
1C	Drywall	507 Entry Ceiling	None Detected
2A	Joint Compound	6th FL Cable CL	0.3% Chrysotile*
2B	Joint Compound	501 Hall CL	0.3% Chrysotile*
2C	Joint Compound	507 Entry Ceiling	< 0.3% Chrysotile*
2D	Joint Compound	410 Bedroom CL	0.3% Chrysotile*
2E	Joint Compound	307 Bath CL	0.3% Chrysotile*
2F	Joint Compound	204 Bedroom 1 CL	0.3% Chrysotile*
2G	Joint Compound	103 Hall	None Detected
3A	2'x4' Ceiling Tile	6th FL Hall	None Detected
3B	2'x4' Ceiling Tile	3rd FL Hall	None Detected
3C	2'x4' Ceiling Tile	1st FL Hall	None Detected
6A	Popcorn Ceiling Texture	6th FL Hall	1.5% Chrysotile*
6B	Popcorn Ceiling Texture	6th Storage CL Middle	1.3% Chrysotile*
6C	Popcorn Ceiling Texture	501 Hall CL	1.3% Chrysotile*
6D	Popcorn Ceiling Texture	507 Entry	None Detected
6E	Popcorn Ceiling Texture	410 Living Room	0.5% Chrysotile*
6F	Popcorn Ceiling Texture	204 Bedroom 1	0.5% Chrysotile*
6G	Popcorn Ceiling Texture	1st FL Maint Shop	None Detected

* = analyzed via point count method

The identified asbestos-containing materials are denoted in bold type. In addition, the following materials were observed but not sampled and are considered to be suspect asbestos-containing materials until appropriate sampling proves otherwise: vinyl flooring and covebase materials and associated mastics, ceramic tile and grout, undersink coating materials, transite panels, mirror mastics, caulking materials and roofing materials. The textured ceiling materials are considered to be a non-friable (not able to be crushed via hand pressure) material in its current intact condition and is not considered to present a concern to residents or maintenance staff. The remainder of the presumed ACMs are considered to be non-friable and all materials were observed to be in good condition at the time of the site inspection, with the exception of the textured ceiling materials located in the entry of unit 507 which were observed to be damaged. It should be noted that a comprehensive asbestos inspection was not performed of the facility. Therefore, additional sampling may be warranted prior to future renovation activities. This asbestos survey was nondestructive in nature, therefore, potential ACMs that are concealed inside walls, roofs, and inaccessible areas, were not sampled.

The O&M Program provides practices and procedures that comply with applicable regulatory requirements and guidance regarding operations and maintenance activities that impact ACM. Included in the O&M Program are the basic requirements for implementing an O&M Program, including identification of the locations and types of ACM present, applicable regulations and guidance, personnel responsibilities, and how to select and use safe work practices. The appendices includes: a glossary of terms, O&M work practices, Program Manager decision-making flowchart, permit forms, Program Manager Checklist, and notification forms. The O&M



Program assigns and outlines the responsibilities for an O&M Program Manager who oversees and assures the O&M Program implementation, and supervises the maintenance and custodial personnel who are designated to perform O&M activities. The O&M Program also provides work practices and procedures for the Program Manager and maintenance or custodial personnel to follow when managing or handling ACM.

The following regulatory standards and guidance documents were used in the development of the O&M Program.

Occupational Safety and Health Administration (OSHA) Regulations

- 29 CFR §1910 OSHA General Industry Standards
- 29 CFR §1926 OSHA Construction Standards

United States Environmental Protection Agency (USEPA) Regulations

- 40 CFR §763 Asbestos Hazard Emergency Response Act (AHERA)
- 40 CFR §61 National Emission Standards for Hazardous Air Pollutants (NESHAP)

Other Guidance Documents

- The National Institute of Building Sciences (NIBS) *Asbestos Operations and Maintenance Work Practices-Guidance Manual*, September, 1992
- The U.S. Environmental Protection Agency (EPA) *Managing Asbestos in Place; A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials*, May 1990
- The U.S. Environmental Protection Agency (EPA) *Guidance for Controlling Asbestos-Containing Materials in Buildings*, 1985

2.2 Asbestos Background Information

Asbestos is the generic term for a group of naturally occurring fibrous minerals with high tensile strength, flexibility and resistance to thermal, chemical, and electrical conditions. Asbestos fibers have been documented to present health risks. Asbestos fibers enter the body through inhalation or ingestion and become embedded in the tissues of the respiratory or digestive systems. Exposure to asbestos can cause numerous diseases, including asbestosis, an emphysema-like condition, lung cancer, mesothelioma, and gastrointestinal cancer. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

Buildings constructed prior to 1981 may contain significant amounts of asbestos building materials. Thermal system insulation (TSI), sprayed or troweled-on surfacing materials, and vinyl or asphalt flooring installed before 1981 are particularly likely to contain asbestos. Asbestos can also be present in pipe and boiler insulation materials and in sprayed-on or troweled-on surfacing materials on walls, ceilings, beams, crawlspaces, and between walls. Suspect materials are typically grouped into two categories: friable (able to be crushed or pulverized by hand pressure) and non-friable. Additionally, those materials that are typically non-friable in their normal usage, such as floor tile, may be considered potentially friable. This means that they may be subjected to mechanical abrasion activities (e.g. floor sanding), which could cause them to become friable. Such suspect materials and their typical application are identified in the U.S. Environmental Protection Agency (EPA) document entitled, "Guidance for Controlling Asbestos-Containing Materials in Buildings, 1985 Edition".



It should be emphasized to all concerned employees and personnel that the presence of asbestos-containing materials within the building does not create an exposure risk to building employees and tenants. Asbestos-containing materials introduce an exposure risk only when the materials have been disturbed and the fibers are released and become airborne. These releases normally do not occur, but may occur if the ACM is accessible and friable (easily crumbled with hand pressure), or when non-friable ACM is incorrectly handled by actions such as drilling, sanding, or cutting the material. Asbestos-containing materials in a building could be impacted or disturbed during the performance of building activities related to maintenance, repair, renovation and alteration projects. This O&M Program is being implemented in order to prevent these situations from occurring.

2.3 Site Specific Information

PROPERTY DESCRIPTION: Arrington Manor
2225 College Street
Columbia, South Carolina

3.0 Regulatory Requirements

The O&M Program for the subject property requires strict adherence to local, state and federal regulations. This section highlights the key standards applicable to this site specific O&M program.

3.1 OSHA Standards

The asbestos in construction standard - OSHA 29 CFR §1926.1101 and asbestos in general industry standard - 29 CFR §1910.1001, specify worker protection requirements for employees exposed to ACMs. "Employees" includes any individual, contractor, or sub-contractor engaged to perform work. The more stringent of these regulations (typically 29 CFR §1926.1101) shall be applied to the staff at the Arrington Manor.

Custodial workers or other employees who perform housekeeping and clean waste, debris and accompanying dust in an area containing visibly deteriorated ACMs or PACMs within any of the units and common areas may be exposed. Many small-scale maintenance activities, repair, installation, or modification projects in buildings constructed prior to 1981 may cause exposure to workers. If these activities disrupt the matrix, crumble, pulverize, or generate visible debris from ACM (not to exceed an amount contained in a 60 inch by 60 inch glovebag), they are examples of Class III work under the construction standard.

3.1.1 Asbestos in Construction (29 CFR §1926.1101)

The OSHA Construction Industry Asbestos Standard (29 CFR §1926.1101), is applicable for the workers who perform activities discussed in the O&M Program. The intent of the standard is to protect the health of employees from significant exposures to asbestos and to educate the employees on health hazards associated with ACMs.



In general, 29 CFR §1926.1101 applies to all construction work where an employee may be occupationally exposed to asbestos. The standard applies to any employee involved in repair, maintenance, alteration, or renovation activities where ACMs are involved. Persons who clean up ACM spills are also covered by this regulation. For purposes of this O&M Program, it shall be assumed that 29 CFR §1926.1101 is applicable for all O&M activities.

3.1.2 Asbestos in General Industry (29 CFR§1910.1001)

29 CFR §1910.1001 is the General Industry Asbestos Standard. Compliance with 29 CFR §1926.1101 is generally required for operations and maintenance activities involving asbestos. It is the responsibility of the Program Manager to obtain appropriate clarification from the local OSHA office in situations where the application of either standard appears to be ambiguous.

3.1.3 Hazard Communication in Construction (29 CFR §1926.59)

This is OSHA's construction industry hazard communication standard. This standard is applicable to all employees with the potential to be exposed to any hazardous chemical, including asbestos. This standard requires the communication of chemical and physical hazards to employees in the construction sector. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.4 Hazard Communication in General Industry (29 CFR §1910.1200)

This is OSHA's general industry hazard communication standard. This standard is similar to the construction industry hazard communication standard (29 CFR §1926.59) and applies to all employees with the potential to be exposed to chemical and physical hazards in the general industry sector. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.5 Respiratory Protection in Construction (29 CFR §1926.246)

29 CFR §1926.246 is OSHA's construction industry respiratory protection standard. This standard is applicable to all employees who are required or choose to wear respiratory protection devices. The intent of the standard is to control occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. This standard requires the establishment of a written respiratory protection program whenever employees are required or choose to wear respirators. Aspects of this regulation are included in 29 CFR §1926.1101 and 29 CFR §1910.1001.

3.1.6 Respiratory Protection in General Industry (29 CFR §1910.134)

29 CFR §1910.134 is OSHA's general industry respiratory protection standard. This standard is similar to 29 CFR §1926.102 and is applicable to all employees who are required or choose to wear respiratory protection devices. The intent of the standard is to control occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. Aspects of this regulation are included in 29 CFR §1926.1101(h) and 29 CFR §1910.1001(g).



3.2 USEPA Standards

Applicable USEPA standards for asbestos O&M programs are limited to the AHERA standard (40 CFR §763) and the NESHAP standard (40 CFR § 1). The AHERA standard in its entirety is not applicable to residential facilities; however, portions of the standard outline specific guidance and state of the art work practices for performing asbestos emergency response actions, re-inspections, record keeping, training and implementation of an O&M Program. Pertinent aspects of the AHERA standard are included in this O&M Program.

3.2.1 NESHAP (40 CFR §61) Standards

NESHAP provides standards concerning the application, removal, and disposal of ACM associated with renovation projects in all facilities. NESHAP requirements generally do not affect O&M practices since they are triggered by demolition or renovation activities that typically involve greater than 260 linear feet or 160 square feet of ACM. However, the Project Manager may be required to fulfill NESHAP requirements if an asbestos abatement contractor is employed to remove larger quantities of ACM. NESHAP includes requirements for inspection, notification, work practices, such as handling, packaging and disposal of wastes, air emissions controls, and labeling. NESHAP may require ACM to be removed before beginning renovation activities.

3.3 State of South Carolina Standards

The State of South Carolina has adopted the Federal EPA and OSHA regulations regarding asbestos-containing materials. These regulations must be strictly adhered to while performing asbestos activities within the State of South Carolina. Please note that within the State of South Carolina if greater than 160 square feet or 260 linear feet or 35 cubic feet of regulated asbestos-containing material (RACM) is affected, then the persons conducting the work must be licensed by the South Carolina Department of Health and Environmental Control Bureau of Air Quality. RACM includes all friable asbestos materials, and/or non-friable asbestos materials that have become friable due to sanding, grinding, cutting or abrading. Staff at the Arrington Manor is not allowed to conduct activities that affect greater than the South Carolina *de minimus* standard.

4.0 Responsibilities

4.1 General Management Company Responsibilities

The following sections describe the roles and responsibilities for the personnel involved in implementing the O&M Program for the subject property. There are two essential personnel classifications necessary to effectively implement this site specific O&M Program:

- (1) The Program Manager who administers the program
- (2) The Maintenance Workers who perform the O&M work practices

The OSHA asbestos standards require employers to take certain steps to guard against hazardous exposures to asbestos. These steps include making an exposure assessment, notifying employees about asbestos in the workplace, posting signs, establishing regulated areas,



providing employee training providing supervision by specially trained personnel, providing protective clothing and equipment, compiling records, and instituting medical surveillance of exposed workers. The particular requirements that apply depend on the nature and extent of the work, the materials involved, and the results of an exposure assessment. The standards additionally require building owners to take steps to identify asbestos-containing materials in their buildings, to keep records about the presence, location, and quantity of known or presumed asbestos-containing materials, to post signs identifying areas of possible exposure to asbestos, and to notify employees, tenants, contractors, and other employers of the presence of known or presumed asbestos-containing materials to which workers may be occupationally exposed.

OSHA compliance requirements, pertaining to known and presumed asbestos-containing materials at the subject property (Arrington Manor), include the following:

(1) GENERAL OBLIGATIONS OF ALL PRE-1980 BUILDING OWNERS

All owners of buildings constructed prior to 1980 must take the following steps:

- Identify potential asbestos hazards
- Keep records about potential asbestos hazards
- Post signs to warn of potential asbestos hazards
- Communicate information about potential asbestos hazards

(2) IDENTIFY POTENTIAL ASBESTOS HAZARDS

Before work subject to the standards has begun, the owner must identify the presence, location, and quantity of asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM). Thermal system insulation, surfacing materials, and resilient flooring materials must be presumed to contain asbestos, if installed in a building prior to 1981, unless proven otherwise. The presumption of asbestos content in these materials can be rebutted if the building owner/management can obtain proof that the material is not asbestos-containing material, or contains less than 1% asbestos. Such proof may be obtained either by an inspection conforming to the requirements of the EPA AHERA standard or by tests of bulk samples of the material in question. The data relied upon to rebut the presumption of asbestos content must be maintained with permanent building records.

(3) RECORDKEEPING:

The management staff at the Arrington Manor is required to create and keep (for as long as the building is managed by the current management company) a record that identifies the presence, location, and quantity of known or presumed asbestos-containing materials in the building. This is the basic recordkeeping requirement. Additional recordkeeping requirements apply if the building owner/management has employees who are potentially exposed to an asbestos hazard in the course of construction, renovation, or repair activities.

(4) POST SIGNS:

The building owner/management must post warning signs in or near areas where there is known or presumed asbestos-containing materials which are being or could be impacted where there is the potential for exposure. The signs must be posted at a distance that will



allow workers to read them and take protective steps before entering the area marked by the signs. The signs must read:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

Warning labels must be affixed, if feasible, to known or presumed asbestos-containing materials and to all known or presumed asbestos-containing scrap, waste, debris, raw materials, or to their containers. The warning labels must read:

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

(5) COMMUNICATE INFORMATION:

The staff at the subject property must inform employees of the presence, location and quantity of asbestos-containing materials if the materials have the potential to be accessed, impacted or disturbed during work activities. In addition, the Arrington Manor staff must also inform the employers (such as custodial service contractors) of employees who do work in the site buildings and who may reasonably be expected to contact asbestos-containing materials in the course of their work.

Before any construction activity, including maintenance, repair or remodeling, that involves disturbance or removal of asbestos-containing material is undertaken, the Arrington Manor Staff must provide information identifying the presence, location and quantity of asbestos-containing materials in the site buildings to all employees who will work in or adjacent to the worksite; to any employers of employees who will work in or adjacent to areas containing asbestos; to prospective employers who reasonably can be expected to work in or adjacent to those areas; and, to tenants who occupy work areas. The Arrington Manor Staff must provide information about the presence, location, and quantity of known or presumed asbestos-containing materials to construction contractors or other employers who apply for, bid for, or do work in or adjacent to areas containing known or presumed asbestos-containing materials.

4.2 Program Manager

The Program Manager is responsible for implementation of the O&M Program and for the review of all work performed under the O&M Program. The specific responsibilities of the Program Manager includes but are not limited to:

- Identify potential asbestos hazards within work areas by having asbestos inspections completed.
- Maintaining records on asbestos location and condition.
- Establish a program for asbestos material surveillance and re-inspections.



- Inform building occupants and workers of asbestos locations and potential hazards.
- Keep records on: 1) potential asbestos hazards including asbestos locations and conditions; 2) worker training and medical monitoring; and 3) periodic re-inspections, exposure assessments, and air monitoring activities.
- Ensure all workers have the proper medical monitoring and maintain the medical records for a period of employment plus 30 years.
- Ensure all personal protective equipment is in good repair and is available for worker use.
- Ensure all maintenance workers who perform work in ACM areas have the proper training for the task and are utilizing the proper personal protective equipment.
- Establishing safe O&M work practices.
- Establish O&M response actions.
- Establishing a hazard communication program.
- Assigning supervisor, worker, and competent person responsibilities regarding O&M work practices.
- Hire asbestos abatement contractors as needed.
- Ensure all work is completed in accordance with all applicable federal, state, and local regulations, ordinances, and laws.

The following sections provide additional information regarding the Program Manager's responsibilities.

4.2.1 Exposure Assessments/Air Monitoring

This O&M program is intended to restrict all employees from performing activities that would potentially expose them to elevated levels of asbestos fibers. Prior to maintenance personnel performing a work activity, which has the potential to create airborne asbestos fibers, or destructive activities on an asbestos-containing material, an exposure assessment is required. An exposure assessment is an accurate determination, using air monitoring, of the airborne concentrations of asbestos to which employees may be exposed. Typically, an industrial hygiene consultant will conduct exposure assessments. Exposure assessments are required by 29 CFR §1926.1101(f) for all construction and O&M activities that impact ACM, unless it can be shown by objective data that in the worst case scenario the ACM or activity are such that there cannot be a release of airborne fibers in excess of the time weighted average (TWA). The purpose of performing exposure assessments is to prevent employees from being exposed to airborne asbestos concentrations in excess of the permissible exposure limit (PEL). The PEL is the OSHA exposure limit for asbestos and is designed to prevent employees from unnecessary risks from with asbestos exposure.

Exposure assessments must be task, material type, and condition (material condition and environmental condition) specific. For example, cleanup of broken floor tiles and clean-up of damaged textured ceiling materials may both be "clean-up activities", however not of the same material; and therefore, these two tasks would require separate exposure assessments. However, exposure assessment documentation may be reused for individual O&M activities if the tasks, conditions and material type "closely resemble" each other and the exposure assessment data for the activity are less than one year old. Therefore, the exposure assessment information for a floor tile cleanup activity may be used for every floor tile cleanup activity, provided the same work practices are used and the conditions and material type remain consistent. Additionally, the exposure assessment may be applied to all similar activities involving



the same material if it can be shown objectively that the exposure potential is less severe than the documented activity.

The Program Manager shall document all exposure assessments and all objective decisions not to perform new exposure assessments. When documenting exposure assessments, the Program Manager shall retain all pertinent documentation including, but not limited to, the specific task, material type and condition, date of the activity, the name of the employee(s), the results of the exposure assessment, and in applicable cases, the objective data and basis for not performing an exposure assessment.

Exposure Limits

Although the OSHA PEL for asbestos is 0.1 fiber per cubic centimeter of air (f/cc), the O&M Program personnel and contractors performing work under this O&M Program shall not be exposed to asbestos concentrations in excess of one tenth of the PEL, or 0.01 f/cc, in the breathing zone. If respiratory protection is utilized, the asbestos concentration behind the mask (i.e., the actual breathed concentration) shall not exceed 0.01 f/cc. The Program Manager shall ensure that asbestos exposures do not exceed the 0.01 f/cc limit.

4.2.2 Selection and Use of Personal Protective Equipment

The following is a description of personal protective equipment (PPE) and guidance for the Program Manager in the selection and use of PPE for activities performed under this O&M Program. The Program Manager for the site shall select the appropriate PPE for the individual O&M work practice, taking into consideration regulatory requirements and other requirements found in this O&M Program. It should be noted that to utilize respiratory protection, an individual must acquire medical permission, be under a medical surveillance program, and be properly fit tested of his/her personnel respirator. In addition, to address emergency repairs involving asbestos-containing materials, OSHA requires the proper training of personnel involved in such activities.

Respirators

The use of respirators may be necessary to perform O&M activities. For decision-making purposes, the Program Manager shall require respirators for all O&M activities unless the Program Manager determines that there is no potential for disturbance of the ACM, or that the potential ACM disturbance will not result the release of asbestos fibers into the air in excess of 0.01 f/cc. Before the Program Manager allows the use of respirators under this O&M Program, a written respiratory protection program must be established in accordance with 29 CFR §1926.246. The Program Manager shall contract the services of a qualified consultant to develop or assist in the development of the respiratory protection program.

Respirators used for O&M activities shall be selected based on the requirements of 29 CFR §1926.1101(h). Protection factors shall be taken into account when respirators are selected. Names of employees and their corresponding respirator type and size shall be documented and archived by the Program Manager. The Program Manager shall ensure that workers are wearing respirators properly and maintaining them in a fashion to protect the integrity of the respirator. The Program manager shall also verify that the employees are utilizing respirators in the proper applications and are aware of the purpose and limitations of the respirator.



Protective Clothing

In addition to respiratory protection, the Program Manager must provide employees with protective clothing to prevent employee exposures and to prevent the cross contamination of other areas and persons. Protective clothing may include disposable coveralls, gloves, hats, shoe coverlets, and eye and face protection. Used disposable overalls will be disposed of as asbestos waste. Re-usable overalls shall not be allowed for asbestos O&M activities. The Program Manager is responsible for ensuring that contaminated protective clothing is disposed of and is placed in a closed container in a designated change area.

4.2.3 Medical Surveillance

The Program Manager shall determine if medical surveillance is required for the persons working under this O&M Program. Medical surveillance is required under 29 CFR §1926.1101 for employees who: are engaged in Class I, II, or III work for more than 30 days per year, are exposed above the PEL (at any time), or wear negative pressure respirators.

If medical surveillance is required for any employee, the Program Manager shall establish a medical surveillance program per 29 CFR §1926.1101(m). The medical surveillance program shall be designed to determine the employee's fitness to wear a respirator under the working conditions required for O&M activities and to monitor any changes in the employee's pulmonary or gastrointestinal systems. Components of a typical medical surveillance program include:

- Initial and (annual) examinations that meet the content and frequency requirements of 29 CFR §1926.1101(m)(2)(i) and (ii);
- Information provided to the examining physician including copies of the OSHA standard, job description, expected exposure levels, previous medical results, and PPE that the employee will be required to wear; and,
- Physician's written opinions that verify the employee's ability to perform the intended duties and ability to wear a respirator, as well as any restrictions to the employee's ability to perform the job.

4.2.4 Work Scheduling and Worker Assignments

The Program Manager shall coordinate the O&M activities that are performed by maintenance staff as well as coordinating projects that are performed by an asbestos abatement contractor. This includes the specific responsibility of carrying out or assigning supervisor responsibilities related to O&M work practices. The Program Manager shall approve of the selected practice before work begins (Section 5.0). This O&M Program requires that all personnel involved in the O&M Program have the appropriate training and experience to perform their jobs and to carry out their responsibilities. Whenever possible, the Program Manager shall schedule workers to perform O&M activities during times when tenants will be vacated from the premises. If this is not possible, the Program Manager will attempt to reduce potential building occupant exposures to ACM fibers during work procedures to the fullest extent possible.

4.2.5 Notification

The Program Manager is responsible for fulfilling all notification requirements mandated by regulatory agencies and this O&M Program. Notification documents such as letters,



memorandum, notices, etc. shall be included as a permanent part of the O&M archive. Notification is required by 29 CFR §1926.1101(k)(ii) to be given to all employees and contractors who may be exposed to ACMs. In addition, all persons who have the potential to impact identified asbestos-containing material require written notification. The written notification document shall include a general description of the hazards associated with asbestos exposure, and the locations and quantities of the ACMs on the property. An example of a notification letter is provided in Appendix G. In addition to personnel notification, there is an EPA NESHAP requirement to notify the appropriate agency when abatement activities affect large quantities of ACM.

4.2.5.1 Building Occupants

The Program Manager is not required to notify building occupants of the presence of ACM, as long as they do not have the means or potential to impact the identified asbestos containing materials. However, notification to building occupants is required if the occupants have the ability and authorization to perform routine maintenance activities within their respective units.

Building occupants shall also be notified of renovation and O&M activities that may impact ACMs, if such work will be conducted in areas potentially accessible to the employees or tenants. In emergency abatement situations, an Emergency Notification Form shall be provided to the building occupants. An example of the Emergency Notification Form is provided in Appendix G.

4.2.5.2 Contractors - Vendors

Before authorized contractors begin work in areas in which ACMs are present at the Arrington Manor, the Program Manager shall notify the following persons, in writing, of the presence, location and quantity of ACM or presumed ACM (PACM) in the buildings.

- Prospective contractors bidding for work whose employees can reasonably be expected to work in or adjacent to areas containing ACM
- Custodial and maintenance employees who will work in or adjacent to areas containing ACM

The Program Manager shall provide copies of, or access to, the O&M Program for all contractors hired to work in building(s) covered by the O&M Program.

4.2.5.3 Federal , State and Local Agency Notifications

The Program Manager shall ensure compliance with any state or local notification requirements. There are currently no federal regulatory requirements mandating notifications for maintenance activities as long as they are not regulated under the NESHAP requirements. This O&M Program is limited, so that any activities requiring federal notification must be performed by a licensed abatement contractor. The Program Manager shall comply with all state and local regulatory notification requirements when abatement by contracted abatement firms meets the NESHAP threshold. NESHAP notification is required if greater than 160 square feet or 260 linear feet or 35



cubic feet is disturbed. This notification will be performed by the Program Manager according to 40 CFR §61.145(b).

4.2.6 Hazard Communication

Hazard communication (Hazcom) is an OSHA regulatory requirement (29 CFR §1926.59) that specifies training in the recognition and prevention of chemical hazards, including asbestos. Hazard communication is generally provided only to those employees and contractors who are expected to work with or be exposed to asbestos. The Program Manager shall ensure that all O&M staff receives Hazcom training in accordance with 29 CFR §1926.59 and 29 CFR §1926.1101. It is the responsibility of the Program Manager to inform all contractors who have the potential to come in contact with asbestos of the potential ACM hazards associated with their work and provide a copy of the O&M program to the contractor as necessary. The Hazcom program shall include a hazard determination, a written hazcom program, use of warning labels, inventorying of Material Safety Data Sheets (MSDS), and proper employee training.

4.2.7 Selection of Materials

The Program Manager shall select the products and materials utilized in performance of activities allowed under this O&M Program. The Project Manager shall disallow any materials or machinery that when used will abrade, damage ACMs or PACMs, or result in a release of asbestos fibers.

4.2.8 Training

Personnel participating in the O&M Program for the Arrington Manor must be knowledgeable of the appropriate work practices and risks associated with their activities. All workers and the Program Manager shall have appropriate certifications, licenses, and other qualifications relevant to the type of work in which they will be engaged, according to local, state, federal, and other regulatory requirements. The Program Manager must ensure all training is completed in accordance with the new OSHA asbestos standards (29 CFR 1926.1101 and 1910.1001) and the AHERA standards (40 CFR 763.92). The Program Manager shall ensure that all personnel are appropriately trained. Training shall be provided prior to, or at the time of, initial assignment and shall emphasize hands-on methods. The workers shall learn how to use the O&M Program as well as to perform specific tasks. Training is to be conducted by a competent person. Two hour awareness training is required for the maintenance/custodial staff once a year. The Program Manager shall contact the appropriate federal, state or local OSHA offices to obtain a listing of acceptable training providers.

4.2.8.1 Worker Training

Workers assigned to perform O&M activities shall have training and experience in the techniques required for the type of work to be performed, the O&M program for the facility, and building conditions specific to the Arrington Manor. The Program Manager shall institute a training program for all employees who are likely to perform OSHA Class III or IV work (29 CFR §1926.1101(g)(10)). All workers are required to have the appropriate training within 60 days of employment. Training for employees performing Class III and IV operations shall be consistent with EPA requirements for training of maintenance and custodial staff as set forth at 40 CFR



§763.92(a)(1-2). This course shall include instruction in the recognition of damage, deterioration, and delamination of ACMs. Employees shall also be trained on the locations of ACM at the property. This training course shall be at least 16 hours in duration for Class III work and 2 hours in duration for Class IV work. The training program shall cover the following topics.

- Methods of recognizing asbestos, including how to presume that certain building materials contain asbestos.
- The health effects associated with asbestos exposure. The relationship between smoking and asbestos in producing lung cancer.
- The nature of operations that could result in exposure to asbestos. The importance of necessary protective controls to minimize exposure including, as applicable, work practices, respirators, housekeeping procedures, protective clothing, emergency procedures, and waste disposal procedures, and any necessary instruction in the use of these controls and procedures.
- The purpose, proper use, fitting instructions, and limitations of respirators.
- The appropriate work practices for performing an approved response action.
- Medical surveillance program requirements.
- The requirements for posting signs and affixing labels, and the meaning of the required legends for such signs and labels.

4.2.8.2 Program Manager Training

The Program Manager shall be trained in: practices for reducing asbestos exposures, use of wet abatement methods, the identification of potential ACM, condition assessment of asbestos-containing materials, potential exposure evaluations, understanding building components, building systems, building usage patterns, conducting O&M activities, cleaning and maintenance tasks, applicable laws and regulations, and the contents of this site specific O&M Program. At a minimum, this training shall include the 16 hour training required under 40 CFR §763.92(a)(2) and successful completion of the two-day AHERA (40 CFR §763.92) "Management Planner" course. However, it is recommended that the Program Manager also complete the 40 hour AHERA "Supervisor" training and the "Management Planner" training.

4.2.9 Material Re-Inspections

The Program Manager shall ensure that all previously identified ACM are re-inspected every six months. In addition, material re-inspections should be completed before and following maintenance or renovation activity. The re-inspection shall include damage assessments of the ACM, taking into account material conditions during previous inspections. The material shall be classified as being in good condition, damaged, or significantly damaged. In the event an ACM is categorized as being significantly damaged, this material must be removed. Designated O&M activities for significantly damaged ACM are required to be completed within sixty days of the discovery. The Program Manager shall determine whether or not material categorized as being "damaged" can be safely repaired to an undamaged condition. Material categorized as being in "good" condition does not require further attention beyond the periodic inspection schedule. The Program Manager shall perform or oversee the performance of all re-inspections. The Program Manager can designate a representative who is capable to perform such inspections. Documentation of re-inspections shall be archived in accordance with the provisions outlined in the Record Keeping section of this program. Results of the re-inspections should be made



available to all custodial and maintenance staff within two weeks of the re-inspection. A certification of receipt should be attached to the re-inspection report which requires the worker to return a letter stating they have received and reviewed the re-inspection material.

4.2.10 Waste Management

The Program Manager shall ensure that all ACM wastes resulting from activities associated with this O&M Program at the Arrington Manor are handled and disposed of in accordance with applicable regulations and the requirements of this O&M Program. All asbestos-containing wastes shall be maintained in a wet state, and shall be properly containerized for transport and disposal in labeled double bags of 6-mil polyethylene. Asbestos waste shall be stored in a marked, secured location, until a sufficient volume is obtained to warrant delivery to an approved landfill. Asbestos waste may include (1) removed asbestos-containing materials; (2) contaminated polyethylene sheeting from underneath or around a work area; (3) disposable protective clothing; (4) water used for cleaning tools and respirators; (5) disposable respirator filters; and, (6) mops or rags used to clean the work area or any spills.

Specific waste management methods for O&M work practices are outlined in Appendix C. All waste generated by the maintenance and/or custodial workers while performing O&M activities shall be disposed of in an approved landfill. Bagged waste is allowed to be stored on site in a 55-gallon drum lined with a 6-mil asbestos waste bag for a maximum of 30 days. An asbestos waste hauler with appropriate licenses and certifications shall be contracted to transport the ACM waste off-site to an approved state or local landfill permitted to accept ACM wastes. The waste shall be tracked, utilizing signed waste manifests and disposal certificates that are submitted to the Program Manager and archived. The asbestos abatement contractor shall include pertinent information, such as the names, locations, and proof of permitting for the landfills intended for use, as part of the project submittal package.

4.2.11 Emergency Response Actions

The Program Manager shall ensure that emergency response actions are carried out in as safe a manner as possible. Generally, emergency response activities involve situations where asbestos materials are disturbed or damaged through the disruption of a plumbing, electrical, mechanical and/or structural systems that affect the condition of ACM or situations where ACM is present on or near these systems and it has been damaged by the system (i.e. leaking pipe).

4.2.12 O&M Program Updates and Modifications

The Program Manager shall review and update the O&M Program, as necessary, every six months after completion of the re-inspection. In addition, the Program Manager shall review and update the O&M Program after each O&M activity or other change in material quantity or condition. All updates shall be made within 30 days of the change in conditions, or within 30 days after receipt of the re-inspection report.

4.2.13 Record Keeping

The Program Manager shall maintain all appropriate records as required by 29 CFR §1926.1101(n) and other applicable regulatory standards and the requirements of this O&M



Program. These records shall be maintained on site in a central location of the property. The following is an overview of required records and their content.

4.2.13.1 Exposure Monitoring

If employees perform activities that require the use of air monitoring, then the Program Manager shall keep a record of all measurements taken to monitor employee exposure to asbestos. The employer shall maintain this record for at least 30 years, in accordance with 29 CFR §1910.20. This record shall include at least the following information:

- The date of measurement.
- The work practice involving exposure to asbestos.
- Sampling and analytical methods used.
- Sample numbers, sampling duration, and results of sample analysis.
- Personnel protective equipment utilized, if any.
- Name, social security number, and exposure of the employees.

4.2.13.2 Medical Surveillance

The Program Manager shall establish and maintain an accurate record for each employee subject to medical surveillance by OSHA 29 CFR §1926.1101(m). The record shall include at least the following information.

- The name and social security number of the worker.
- A copy of the worker's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations.
- Physician's written opinions.
- Any employee medical complaints related to exposure to asbestos.

The employer shall ensure that this record is maintained for the duration of employment plus 30 years.

4.2.13.3 Training Records and Availability of Records

The Program Manager shall maintain all worker-training records for at least one year beyond the last date of employment. The Program Manager, upon request, shall make all records available to regulatory agencies and building occupants, as required by 29 CFR §1910.20 and §1926.1101 for examination and copying. Also, the Program Manager, upon request, shall make any exposure records available for examination and copying to affected workers, former employees, and designated representatives.

4.2.13.4 Transfer of Records

In the event of personnel change, the Program Manager shall take the steps necessary to ensure the transfer of all appropriate records.



4.2.13.5 Miscellaneous Records

The Program Manager shall retain copies of all correspondence and all notices to building occupants, maintenance and custodial workers, and contractors. The Program Manager shall also maintain documentation for each material re-inspection performed. These records shall be archived for purposes of comparison with previous re-inspection results. Material Safety Data Sheets (MSDS) required as part of the O&M Program activities covered by the Hazcom standard are to be archived with this O&M document. These sheets shall be located such that they are available for immediate review and reference. Waste manifests, waste tracking forms, disposal certificates and other documents relating to waste management shall be archived. The Program Manager shall archive all permits obtained for O&M activities as required by federal, state and local regulations.

4.3 Workers

Maintenance and custodial personnel who perform O&M activities shall perform their duties in a manner that is consistent with this O&M program and in a manner that promotes the safety of building personnel and occupants. Maintenance and custodial personnel shall be aware of the locations and conditions of the ACMs on the property and shall report changes in these conditions to the Program Manager. The custodial and maintenance personnel should act "as the eyes and ears" of the Program Manager.

4.4 Competent Person

OSHA regulations at 29 CFR §1926.1101(b) and (o) require the designation of a Competent Person for all aspects of asbestos work. The Competent Person is an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary or dangerous to O&M workers. The Competent Person has the authority to take prompt corrective action to eliminate hazardous conditions or situations. Generally, the Competent Person will be a consultant. However, the O&M Program Manager may be the Competent Person under this O&M Program, or may designate another member of the building staff to assume this role. The Competent Person shall meet the qualification and training requirements of the OSHA standard. The Competent Person shall ensure compliance with the applicable OSHA Regulations. Also, this individual shall perform frequent inspections of the asbestos work areas and equipment. For OSHA Class III and IV work performed by maintenance or custodial staff, on-site inspections shall be performed at periodic intervals sufficient to assess conditions and work practices, and at any time at requested by an employee or building occupant. The Competent Person will only perform the scope of his/her responsibilities when O&M response actions are performed by *in-house* maintenance or custodial staff.

5.0 Selection and Use of Work Practices

When asbestos-containing materials are found in a building, there are typically five options available to the building owner. The degree to which each asbestos abatement option is applicable varies by the use of the building/building area, the type of material, the building's future use, and other issues. They are:



Removal (abatement) - following all federal and state removal guidelines and recommendations.

Enclosure - construction of an air-tight barrier installed between the asbestos and the building environment. If enclosure is the recommended response action, the area of the enclosure should be marked on the site drawing maintained by the Program Manager to show maintenance workers the presence of asbestos-containing materials in area.

Encapsulation - the application of a sprayed-on liquid which surrounds or embeds the asbestos fibers in an adhesive matrix to prevent fiber release. Example: surfacing materials at the property which have been coated with a spray-applied paint or covering asbestos flooring with non-asbestos flooring.

Repair - returning damaged asbestos-containing materials (ACMs) to an undamaged condition under federal and state regulations.

Operations & Maintenance (O&M) Program - an O&M Program details a program of training, cleaning, work practices, and periodic surveillance to maintain ACM in good condition, ensure cleanup of asbestos fibers previously released, or present in the building environment, and prevent further release by minimizing and controlling ACM disturbance.

The following sections provide criteria for determining if and how to proceed with building O&M activities that may impact ACM. The criteria provided below will assist Program Manager in determining whether an O&M practice is appropriate for the building staff to complete, or if the O&M practice needs to be performed by a licensed ACM abatement contractor. A logical method for selecting the proper O&M practice(s) and the required personal protection equipment is provided for activities that can be carried out safely by building custodial and/or maintenance personnel. Example situations are also provided to assist the O&M Program participant in understanding the decision-making logic. Materials known to be ACM have been identified within the property as summarized in Section 1.1. Any work activity, regardless of type, that may impact an ACM is subject to the requirements of the decision-making process described below. Work activities that will occur in areas not previously characterized for ACMs are also subject to the decision-making processes described below. Only personnel meeting the qualifications described above for O&M personnel may make decisions utilizing this process.

5.1 Defining the Activity

The person initiating a request to perform maintenance or other building work activities that may impact an ACM is required to complete the Activity Summary Form included in Appendix E. The planned work activity needs to be adequately described on this form to allow the Program Manager to have an adequate understanding of the type and magnitude of the work activity and how it may impact ACM. As part of completing the Activity Summary Form, each work activity will be assessed to determine if and how the work activity may impact ACM. The ACM impact assessment and Activity Summary Form completion may be performed by the custodial and/or maintenance staff, but must be approved by the Program Manager.

Potential impacts to ACM during work activities may not be limited to actual handling or disturbance of the ACM, but shall include activities that may impact the accessibility or



condition of the ACM. For example, although the ACM itself may not be disturbed by a work activity, the work activity may result in increased ACM accessibility (e.g. by removing a door) or ACM release (e.g. through increased air movement). While these work activities may not have an immediate affect on the nearby ACM, the work activities could affect the ACM condition or the potential for exposure to the ACM, resulting in a need to modify the O&M Program and inspection frequency.

If the Program Manager's assessment determines that no ACM will be impacted, the Activity Summary Form would be approved and the work activity can proceed without the Program Manager specifying ACM O&M practices.

5.2 Allowed ACM O&M Practices

The purpose of this O&M Program is to address the activities which may impact known or presumed asbestos-containing materials located within the Arrington Manor. The following is a summary of ACM and/or PACM concerns at the subject property:

- (1) Textured ceiling materials
- (2) Vinyl flooring and covebase materials and associated mastics
- (3) Ceramic tile and grout
- (4) Undersink coating materials
- (5) Transite panels
- (6) Mirror mastics
- (7) Caulking materials
- (8) Roofing materials

Activities which may impact or disturb the identified asbestos-containing materials are not permitted to be performed by any maintenance personnel or tenants of the facility. All asbestos related activities should be performed only by trained and authorized personnel using a work permit system. The work permit program requires the person requesting the work to submit a Job Request Form prior to any maintenance activity. The Job Request Form gives the time and location of the requested work, the type of maintenance needed, and available information about any ACM in the vicinity of the requested work. Upon receiving a pre-work Job Request Form the building owner/management should follow these procedures:

- (1) Refer to the ACM inspection report to determine if any ACM is present in the area where the work will occur. If ACM is present, but is not expected to be disturbed, the facility owner/management should note the presence of the ACM on the permit form and provide additional instruction on the importance of not disturbing the ACM.
- (2) If ACM is both present and likely to be disturbed, the Program Manager should visit the area where the work is to be performed and determine what work practices should be instituted to minimize the release of asbestos fibers during the maintenance activities.
- (3) The determination should be recorded on a Maintenance Work Authorization Form, which is then forwarded to the in-house maintenance supervisor or to the maintenance contractor to authorize the work.



- (4) The Program Manager should ensure a copy of both the request and authorization forms are placed in a permanent file.
- (5) Where the task is not covered by previously approved standard work practices, workers should contact the appropriate site maintenance supervisor or administrator, for the approval of work methods prior to the commencement of the work. The building owner/management should ensure the appropriate work practices and protective measures are used for the job.
- (6) For all jobs where contact with ACM is likely, the Program Manager should visit the work site prior to the commencement of the work to ensure the job is being performed properly. For lengthy jobs where disturbance of ACM or is intended or likely, periodic inspections should be made for the duration of the project.
- (7) The Program Manager's observations should be documented on an Evaluation of Work Form. Any deviation from standard and approved work practices should be recorded immediately on the Evaluation of Work Form and the practices should be immediately corrected.
- (8) Upon completion of the work, a copy of the Evaluation of Work Form should be placed in the permanent asbestos file.

Copies of sample Job Request Forms, Evaluation of Work Forms, and Maintenance Work Authorization Forms are presented in Appendix E.

It is not possible to identify specifically all employee work activities or situations where asbestos might be impacted or disturbed. Common types of activities or situations are however, listed below, detailing safety procedures. Activities which may impact the identified asbestos-containing materials are not permitted to be done by untrained maintenance personnel or tenants of the building. Activities which are allowable (to OSHA asbestos awareness trained maintenance personnel) are the following:

1. GUIDANCE FOR THE CLEANING OF ASBESTOS DUSTS AND DEBRIS:

In areas where the known asbestos-containing materials are noted to be damaged or deteriorating then asbestos dust and debris clean-up is warranted. In addition, areas containing damaged asbestos should be cleaned on a regular basis to minimize the collection of asbestos dusts. Cleaning of asbestos dusts is conducted through typical wet mopping methods and proper disposal of the wastes. If elevated levels of settled asbestos dusts are suspected, cleaning practices can be supported with the use of a HEPA vacuum. The following are asbestos dust cleaning protocols:

- (1) Prepare cleaning solution per amended water instructions (See Appendix C).
- (2) If settled dusts are present to the naked eye, initially vacuum the affected area with a HEPA style vacuum. DO NOT use a conventional vacuum.



- (3) Apply a coat of cleaning solution and allow to activate for 10-15 minutes.
- (4) Mop affected area with a clean mop. Replace mop head each 500 square feet of surface area to ensure that contaminated mop heads are not used.
- (5) Dispose of all mop heads in accordance with state and federal regulations.
- (6) Perform asbestos dust clearance testing if necessary (See Section 5.5.2.1).

In areas where the known or presumed asbestos-containing material is damaged, the maintenance staff may need to repair the building components as a maintenance activity (not an asbestos removal activity). Repair activities should employ the following steps:

- (1) Conduct work during off-hours and isolate the area to prevent unauthorized personnel access.
- (2) Turn off air handling units such as air conditioning and/or heating unit.
- (3) Prepare work area by sealing the area (i.e. heating vents, windows and doors) by covering with polyethylene sheeting.
- (4) Maintenance staff shall don approved respirators and protective personnel equipment/clothing.
- (5) Repair damaged surface area using an approved asbestos abatement methodology and seal with an encapsulant.
- (6) Clean-up enclosed area and clean-up potential asbestos dusts per dust cleaning methodologies.
- (7) Dispose of all used cleaning supplies, containment barriers, and asbestos debris/dust in accordance with state and federal regulations.

2. GUIDANCE FOR TEXTURED CEILING MATERIALS:

The textured ceiling materials at the subject property are documented to contain asbestos. These materials are generally considered to be friable asbestos-containing materials if impacted. Prohibitions and limitations apply to the care of this category of materials:

- No sanding of these materials;
- No dry-scraping of these materials is allowed.

For removing materials which contain asbestos, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Ceilings shall not be sanded;



- (2) All scraping shall be performed using wet methods;
- (3) The use of conventional vacuums and dry sweeping is prohibited;

In emergency situations, whereas removal or repair of a limited amount of the textured ceiling material is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) The HVAC system must be shut down and locked out prior to any removal activities.
- (2) The material must be wetted prior to removal;
- (3) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination of other areas
- (4) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;
- (5) Dry sweeping is prohibited;

Gross removal of asbestos-containing textured ceiling materials is not allowed to be conducted by untrained and unlicensed staff. Routine and minor maintenance tasks involving isolated disturbance of the textured ceiling materials should be performed using controlled methods. Industry standard is to use methods involving an encapsulating foam (e.g. shaving cream), through which the disturbance is made; whereby resulting in no visible dust/emissions. As an alternative, minor repairs can be performed using localized HEPA vacuum exhaust to reduce any potential emissions, dusts and debris.

3. GUIDANCE FOR VINYL FLOORING AND COVEBASE MATERIALS AND MASTICS:

Vinyl flooring materials, covebase materials, and associated mastics at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of materials:

- * No sanding of these materials;
- * Floor stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- * Dry buffing may be performed at any speed as long as the flooring has sufficient finish to prevent the pad from contacting the mastics.

For removing materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable vinyl flooring, covebase, its backing, or mastic shall not be sanded;



- (2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;
- (5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (6) Materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;
- (7) Non-friable resilient flooring and covebase materials including associated mastics and backings shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

Removal of asbestos-containing vinyl flooring and covebase materials and associated mastics is not allowed to be conducted by untrained and unlicensed staff.

4. GUIDANCE FOR CERAMIC TILE AND GROUT:

The ceramic tile and grout located at the subject property is presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of material:

- * No sanding of these materials;
- * Floor/wall stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- * Dry buffing may be performed at any speed as long as the materials have sufficient finish to prevent the pad from contacting the tile/grout material.

For removing non-friable ceramic tile and grout which contains ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable ceramic tile and grout shall not be sanded;
- (2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean these materials;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;



(5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(6) Tiles shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing ceramic tile and grout is not allowed to be conducted by untrained and unlicensed staff.

5. GUIDANCE FOR UNDERSINK COATING MATERIALS:

The undersink coating materials at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of these materials;

For removing the sinks containing non-friable undersink coating materials, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

(1) Non-friable undersink coating materials shall not be sanded;

(2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;

(3) Dry sweeping is prohibited;

(4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;

(5) Sinks shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing undersink coating materials is not allowed to be conducted by untrained and unlicensed staff.

6. GUIDANCE FOR NON-FRIABLE TRANSITE PANELS:

The transite panels at the subject property are presumed to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of this material;



For removing materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable transite panels shall not be sanded;
- (2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;
- (3) Dry sweeping is prohibited;
- (4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (5) Transite panel materials shall be removed intact with the least amount of damage as possible, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing transite panel materials is not allowed to be conducted by untrained and unlicensed staff.

7. GUIDANCE FOR MIRROR MASTIC:

The mirror mastic in the beauty shop is presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of materials:

- * No sanding or chipping of these materials;

For removing non-friable mirror mastics which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable mirror shall not be sanded;
- (2) Vacuums equipped with HEPA filter shall be used to clean any debris;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;
- (5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (6) Mirror mastic shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.



Removal of asbestos-containing mirror mastic is not allowed to be conducted by untrained and unlicensed staff.

8. GUIDANCE FOR CAULKING MATERIALS:

The subject property contains caulking materials that are presumed to contain asbestos. Prohibitions and limitations apply to the care of these categories of materials:

- * No sanding of these materials;

For removing the caulking materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Caulking materials shall not be sanded;
- (2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;
- (3) Dry sweeping is prohibited;
- (4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (5) Caulking materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing caulking materials is not allowed to be conducted by untrained and unlicensed staff.

9. GUIDANCE FOR ROOFING MATERIALS:

The roofing materials at the subject property are presumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques. Prohibitions and limitations apply to the care of this category of material:

- * No sanding of these materials;
- * No dry-scraping of these materials is allowed.
- * No cutting of these materials is allowed.

Removal of the presumed asbestos-containing roofing materials is not allowed to be conducted by untrained and unaccredited staff. Sampling of these materials should be conducted prior to roof removal activities.



10. ROUTINE HOUSEKEEPING DUTIES:

If employees of the Arrington Manor perform routine custodial duties that involve working near or cleaning ACM that is not enclosed, sealed or otherwise protected from release of asbestos fibers into the air certain housekeeping procedures must be strictly adhered to. This activity is covered by the General Industry standard as long as no construction activity is involved.

- (1) The building owner/management must provide the affected workers with asbestos awareness training each year. The course must be provided at no cost to the employee. The course must also cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, and who to tell and what to do if such materials are dislodged or become non-intact. This training must be provided regardless of the expected exposure levels to housekeepers.
- (2) In addition, if the building owner/management should reasonably expect that any of the housekeeping employees may be exposed in excess of a permissible exposure limit (PEL: 0.1 fibers per cubic centimeter as a time-weighted average over an 8 hour period or 1.0 fibers per cubic centimeter over a 30 minute period), then the following procedures must be adhered to:
 - (a) Monitor according to the OSHA standard's requirements to accurately determine the airborne concentrations.
 - (b) Provide employees with medical surveillance. A medical surveillance program requires the worker to complete a health questionnaire and may include a physical examination at no cost to the employee. The building owner/management must keep exposure and medical surveillance records for the duration of employment plus 30 years.
 - (c) Restrict access to areas of expected over-exposure
 - (d) Provide more extensive training: An annual asbestos awareness course is required. The course must be provided at no cost to the employee. The course must cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, how to respond to asbestos exposure, and required housekeeping work practices.
 - (e) Provide appropriate respirators and protective clothing at no cost to employees to use while working in areas of potential over-exposure. Respirators must be equipped with HEPA filters.

Housekeeping activities conducted in the immediate area of friable or significantly damaged or loosely bonded ACM may indicate significant airborne exposure potential. Activities which release fibers from ACM such as grinding, cutting, or sanding, also have such potential. Please note that reference here is only to workers who are exposed to accessible asbestos when doing routine housekeeping activities. It does not include maintenance activities, repair, removal, or



construction work that may involve disturbance or removal of asbestos-containing materials. Neither does it include clean-up and disposal of dust or debris resulting from construction, renovation, removal, repair, or maintenance activities. Performance of these tasks by the housekeeping employees may trigger additional obligations that are described elsewhere in this Operations and Maintenance Program.

5.2.1 Non-Emergency ACM Work Practices

Allowed non-emergency ACM O&M work practices under this program are limited to qualified Class III and IV asbestos work practices. All Class I and II asbestos work practices, and those Class III and IV asbestos work practices not meeting the qualification criteria below, shall be carried out by a qualified and properly licensed asbestos abatement contractor overseen by an independent industrial hygiene consultant (see Section 5.5.2). Non-emergency Class III and IV asbestos work practices allowed at the Arrington Manor must meet the following qualification criteria:

- ACM can be sufficiently wetted and/or contained to prevent migration of fibers to other locations without the aid of negative pressure enclosures or devices;
- ACM O&M work practices are unlikely to result in worker exposure to airborne asbestos concentrations greater than or equal to the PEL (0.1 f/cc), based on previous exposure assessments and monitoring. (Note: previously unmonitored activities may require monitoring as described in Section 4.2.1);
- ACM O&M work practices are unlikely to result in building occupant exposure to airborne asbestos concentrations greater than or equal to the one tenth of the PEL (0.01 f/cc), based on previous exposure assessments and monitoring;
- ACM is not located in an area defined as a confined space;
- No greater than three linear feet or three square feet of ACM will be affected. This criterion may not be circumvented by performing a number of smaller tasks that add up to a total greater than three square or linear feet.

It is assumed that Class I and II ACM work practices cannot meet the above criteria. Also, many Class III ACM work practices and some Class IV ACM work practices may not meet these criteria.

5.2.2 Emergency ACM Work Practices

Emergency ACM work practices may be required for two basic types of emergencies:

- (1) where the immediate threat is due to ACM
- (2) where the immediate threat is not due to ACM but the material may become a threat when the emergency is addressed.

An example of the first type of emergency ACM work practice would be where the ACM is disturbed, or the ACM deteriorates rapidly, resulting in an immediate threat to safety and health due to the ACM. An example of the second type of emergency ACM work practice would be where another condition or problem not directly related to the ACM results in an emergency that requires ACM to be impacted in order to correct the condition or problem. Emergency



ACM work practices shall only include those ACM work practices necessary to safely control the situation(s) that poses an immediate threat to the life or health of building personnel or tenants. In emergency situations, the threat shall only be controlled to the extent necessary to prevent a continued threat. A complete abatement of the ACM shall not be performed unless it is necessary to contain the threat. Permanent solutions shall be handled through non-emergency work practices once the immediate threat is controlled.

In general, it shall be determined for immediate threats not due to ACM that the emergency constitutes a greater threat than the potential ACM exposure poses before emergency ACM work practices are carried out. Examples of other situations where emergency ACM work practices may be required include impending fires, explosive atmospheres, and other life threatening situations. Leaking water pipes and other mechanical failures that do not immediately affect employee or tenant safety are not considered emergency situations and must be handled using the non-emergency ACM work practices.

In emergency situations, the Program Manager and custodial and/or maintenance workers shall use their best judgment as to whether the situation constitutes an emergency and whether the emergency can be handled without impacting the ACM. If it is determined that the situation cannot be handled without impacting the ACM, the most stringent level of worker protection and the highest possible level of ACM work practices controls shall be applied. All non-emergency requirements regarding documentation and permitting requirements shall be accomplished immediately after the emergency response is complete.

All other requirements of this O&M Program apply to emergency O&M work practices, including regulatory compliance, notification, handling and disposal of ACM wastes, etc. An Emergency Notification Form is provided in Appendix G. The Program Manager should make every effort to become familiar with how to address emergency situations before they occur. In emergency situations, maintenance or custodial workers shall restrict access to affected areas of the building using whatever means necessary before the asbestos abatement contractor arrives on-site. Trained maintenance or custodial workers may shut off mechanical, plumbing or electrical systems without donning PPE if it is determined that there is no potential for exposure to asbestos fibers while doing so.

5.3 Permitting System

Before any ACM work practices are selected or performed, a permitting system must be initiated to track and document all maintenance and other work activities at the site and to assess the potential for these activities to impact ACMs. All planned work activities must be described on an Activity Summary Form (included in Appendix E) that must be approved by the Program Manager. The Activity Summary Form will be reviewed by the Program Manager to determine if the work activity will impact ACMs and can be performed in accordance with the O&M Program.

If the work requires ACMs to be impacted by building personnel, the Program Manager will determine if the activity meets the qualification criteria established above for allowed O&M practices. The Program Manager will then complete the ACM work practices Authorization Form (Appendix E) describing the allowed ACM work practices, including necessary worker protection requirements, control methods to be used, and exposure monitoring requirements. The



Authorization Form will be completed regardless of whether the O&M activities will be performed by building personnel or outside contractors. The Program Manager shall complete and issue a notification form(s) to all applicable persons whenever an Authorization Form is completed. The custodial and/or maintenance personnel performing the ACM work practice will complete the ACM work practices Completion Form (Appendix E), detailing any deviations from the ACM work practices and/or any other problems encountered while performing the ACM work practices. The Completion Form will be provided to the Program Manager for review and approval.

5.4 Selection of ACM Work Practices

Appropriate ACM work practices will be selected by the maintenance staff (or the Program Manager) and approved by the Program Manager. Work practice descriptions are provided in Appendix C. The Program Manager shall complete a Program Manager Checklist (Appendix F) and evaluate the work to be performed based on the information in the completed Activity Summary Form, available survey and assessment data, and data on past O&M activities (if available). When reviewing data and completing the Program Manager checklist, the following shall be determined.

- * If an ACM may be encountered during the work;
- * If any ACMs which have been enclosed may be encountered during this work;
- * Appropriate work practice(s) to address the situation;
- * Appropriate level of work practice(s) to be used;
- * Required PPE, if any, for the work.

The Program Manager must determine the appropriate work practice considering: the level of worker and environmental protection necessary, based on the O&M Program objectives; regulatory compliance of the activity, including requirements for worker protection, work practices, exposure monitoring, notifications, and state or local requirements; and whether exposure monitoring data and Authorization Forms from past work indicate that a given work practice or work practice level accomplishes the O&M objectives. In selecting the appropriate work practice for a given situation, the Program Manager shall also consider the following.

- * Airborne fiber release potential of material or O&M activity;
- * Condition and friability of the ACM;
- * Exposure and air monitoring data;
- * Training, skill, and experience of workers;
- * Quantity of ACM to be disturbed;
- * Location, type, and percentage of ACM;
- * Exposure potential for occupants and other personnel;
- * State and local regulatory requirements;
- * Ventilation system configurations;
- * On-site supervision.

5.5 Clearance for O&M ACM Work

An asbestos O&M activity or a clean-up of a minor release is successful when the source of the fiber release has been controlled and airborne asbestos is kept to a minimum. All workers must be trained and follow the accepted work practices. Success of the activity is confirmed with a



final evaluation at each work area. The evaluation consists of visual inspection, air testing, wipe sampling, and micro-vacuum, if warranted. Visual inspection is used to determine if the work has been performed properly and to check for debris and other signs of poor cleaning. Air and surface dust testing helps confirm that the work site has been adequately cleaned. The Asbestos Program Manager shall decide whether visual, air, or surface dust testing clearance is acceptable on a job-to-job basis. It is required that a combination of two of the three methods (air sampling and wipe sampling or air sampling and micro-vacuumping) be utilized to determine the extent of an asbestos fiber release from friable or non-friable asbestos materials. Air testing with analysis via Phase Contrast Microscopy (PCM), NIOSH 7400 Method, is an acceptable method of air clearance for activities involved in this O&M Program for the Arrington Manor.

5.5.1 Visual Inspection

The primary test for completion of the work site is a thorough visual inspection. The inspection should be conducted prior to the occupation of the area and after the area has been cleaned via HEPA vacuum, wet wiping, or other accepted method. The inspector should first ensure job completeness. If ACM has been cleaned or debris removed, the inspector should ensure no debris remains. Special attention should be given to corners and hard-to-reach areas. Next, the inspector should determine that the work site has been adequately cleaned. Any activity that disturbs ACM will release fibers. Therefore, work site clean-up after removal, repair, or cleaning is critical. Examine all surfaces for dust and debris. Use a damp cloth to collect dust from all surfaces and inspect the cloth for evidence of dust. This is a practical way to establish that the "no dust" requirement has been met. If dust is found, the entire work area should be re-cleaned and the tests repeated.

5.5.2 Air Testing

Air monitoring should be conducted after all minor and major release episodes by a trained and licensed asbestos air sampler. The air monitoring should be conducted only after the work area has passed a visual inspection. Sampling for asbestos consists of collecting fibers by drawing air through a filter at a known rate. But this approach may fail to detect the presence of asbestos fibers. For example, if sampling is conducted for a short time during a quiet period (i.e. when air movement is limited), many fibers will settle out of the air onto the floor and other surfaces and may not be captured on the filter. Under these conditions, air measurements could show little or no asbestos. Usually, aggressive sampling is recommended as a post work air test provided the aggressive sampling will not contaminate adjacent areas. Aggressive sampling uses forced air equipment such as a leaf blower to dislodge free fibers. Routine air samples are generally analyzed using Phase Contrast Microscopy (PCM) according to the NIOSH 7400 Method. This method is recognized by the U.S. Occupational Health and Safety Administration (OSHA), the U.S. Environmental Protection Agency (EPA), and the State of South Carolina for its ability to characterize airborne fiber levels.

Following all O&M activities performed under this Program, the final airborne fiber concentration(s) in an affected area shall be less than 0.010 f/cc when analyzed by phase contract microscopy (PCM). In the State of South Carolina, air monitoring should be completed by a properly trained and licensed asbestos air sampler. In addition, the samples must be submitted to an accredited and/or state licensed Asbestos Analytical Laboratory.



5.5.2.1 Phase Contrast Microscopy (PCM)

Phase Contrast Microscopy (PCM) is the method of asbestos air testing that is most familiar, available, and frequently used. It is also the least expensive and has a well established analytical protocol. However, the protocol for PCM does not distinguish between asbestos and other types of fibers (i.e. fiberglass) and counts only fibers longer than five micrometers; nor is PCM sensitive enough to detect the extremely thin fibers typical of airborne asbestos in buildings. Thus, the interpretation of PCM results assumes that a low concentration of relatively large airborne fibers means that the concentration of asbestos fibers is also low. If a potential source of non-asbestos fibers (i.e. fiberglass insulation, carpet, etc.) is present within the work area, TEM analysis shall be used instead of PCM analysis. The procedures for testing via the PCM Method are as follows:

Sampling:

- * Draw at least 1,200 liters of air through each filter at a rate of 1 to 12 liters per minute.
- * Collect at least five samples per homogenous work site, or one per room.

Analysis:

- * Measure the asbestos on each filter with PCM using the NIOSH 7400 procedures.
- * Include at least one field blank and one laboratory blank per abatement project, for quality control purposes. Also, split one work site sample for duplicate analysis.

Release Criterion:

- * Release the contractor if every sample value is below the limit of reliable quantification (0.01 f/cc).
- * If any of the sample values is above the prescribed level, clean the entire work area again, collect new samples, and evaluate the samples as describes above.

6.0 Contracted ACM Work

If ACM abatement or O&M work is to be performed by contractors, the Program Manager's responsibilities and activities include submittal reviews and verification that O&M work and monitoring is being performed as required. The permitting system described above will be applied to work performed by outside contractors. The Program Manager will track abatement and O&M activities using the ACM work practices Authorization Form and the ACM work practices Completion Form. As necessary, modifications to other forms shall be made to assist the Program Manager in tracking ACM activities that affect the overall O&M program. These permit and tracking forms shall provide the basis for updating and modifying the O&M Program to reflect current material quantities and condition.



7.0 Appendices

Appendix A	Limited Asbestos Survey Report
Appendix B	Glossary of Terms
Appendix C	O&M Work Practices
Appendix D	Program Manager Decision-Making Flowchart
Appendix E	Permit Forms
Appendix F	Program Manager Checklist and O&M Annual Review Form
Appendix G	Notification Forms
Appendix H	"Ready to Use" O&M Activity Sheets







December 7, 2023

Columbia Housing
Attn: Ms. Lucinda Herrera
1917 Harden Street
Columbia, South Carolina 29204
cherrera@columbiahousing.org

RE: Arrington Manor
2225 College Street – Columbia, South Carolina
D3G Project #2023-0878
Limited Asbestos Survey Report

Dear Ms. Herrera,

Dominion Due Diligence Group (D3G) is pleased to provide the results of the limited asbestos survey conducted at the Arrington Manor located 2225 College Street in Columbia, Richland County, South Carolina (subject property). The subject property consists of one (1) six-story age-restricted apartment structure constructed in 1971. The subject property structure contains a total of fifty-eight (58) residential dwelling units. D3G was contracted to perform a limited asbestos survey at the subject property in order to comply with HUD requirements for a project being submitted through the HUD Special Applications Center (SAC) and applying for South Carolina State Housing Finance and Development Authority (SCSHFDA) tax credits. The structure is proposed for significant rehabilitation; however, as it is currently occupied, only limited sampling was able to be conducted at this time. Therefore, additional sampling and inspection of 100% of the units will be required prior to renovation activities to comply with EPA and State of South Carolina asbestos regulations.

Ms. Kathryn Hubicki, a State of South Carolina licensed Asbestos Building Inspector (license #BI-01079) with One Source Environmental, LLC (OSE), conducted a limited asbestos survey at the subject property on November 15, 2023 on behalf of D3G. The survey was conducted in accordance with practices described within the ASTM Standard Practice for Comprehensive Asbestos Building Surveys Designation: E 2356-18 (ASTM E 2356-18) for Baseline Surveys. However, the inspection was limited to accessible areas of the facility and is not considered to be in full compliance with pre-renovation standards (40 CFR 61 Subpart M) or State of South Carolina regulations. The structure is proposed for significant rehabilitation; however, as it is currently occupied, only limited sampling was able to be conducted at this time. Therefore, additional sampling and inspection of 100% of the units will be required prior to renovation activities to comply with EPA and State of South Carolina asbestos regulations. All suspect ACMs were identified during the course of the inspection. Sampled materials included drywall, joint compound, ceiling tiles and textured ceiling materials. An asbestos-

containing material is defined as containing greater than 1% asbestos. Samples were analyzed via Polarized Light Microscopy (PLM). In addition, six (6) samples of joint compound and five (5) samples of textured ceiling materials were reanalyzed via the EPA Point Count method to confirm the asbestos content of those materials. The ASTM E 2356-18 standard and the State of South Carolina require additional analysis of non-friable organically bound (NOB) materials (i.e. floor tiles, covebase, mastics, roofing materials, caulks) reported as non-detect using visual estimation via Transmission Electron Microscopy (TEM) to confirm the asbestos content of those materials. However, NOB materials were not sampled and were presumed to contain asbestos. The following table itemizes the sampled materials and their respective asbestos concentrations:

SAMPLE NUMBER	SAMPLED MATERIAL	LOCATION	% ASBESTOS
1A	Drywall	6th FL Cable CL	None Detected
1B	Drywall	501 Hall CL	None Detected
1C	Drywall	507 Entry Ceiling	None Detected
2A	Joint Compound	6th FL Cable CL	0.3% Chrysotile*
2B	Joint Compound	501 Hall CL	0.3% Chrysotile*
2C	Joint Compound	507 Entry Ceiling	< 0.3% Chrysotile*
2D	Joint Compound	410 Bedroom CL	0.3% Chrysotile*
2E	Joint Compound	307 Bath CL	0.3% Chrysotile*
2F	Joint Compound	204 Bedroom 1 CL	0.3% Chrysotile*
2G	Joint Compound	103 Hall	None Detected
3A	2'x4' Ceiling Tile	6th FL Hall	None Detected
3B	2'x4' Ceiling Tile	3rd FL Hall	None Detected
3C	2'x4' Ceiling Tile	1st FL Hall	None Detected
6A	Popcorn Ceiling Texture	6th FL Hall	1.5% Chrysotile*
6B	Popcorn Ceiling Texture	6th Storage CL Middle	1.3% Chrysotile*
6C	Popcorn Ceiling Texture	501 Hall CL	1.3% Chrysotile*
6D	Popcorn Ceiling Texture	507 Entry	None Detected
6E	Popcorn Ceiling Texture	410 Living Room	0.5% Chrysotile*
6F	Popcorn Ceiling Texture	204 Bedroom 1	0.5% Chrysotile*
6G	Popcorn Ceiling Texture	1st FL Maint Shop	None Detected

* = analyzed via point count method

The identified asbestos-containing materials are denoted in bold type. In addition, the following materials were observed but not sampled and are considered to be suspect asbestos-containing materials until appropriate sampling proves otherwise: vinyl flooring and covebase materials and associated mastics, ceramic tile and grout, undersink coating materials, transite panels, mirror mastics, caulking materials and roofing materials. The textured ceiling materials are considered to be a non-friable (not able to be crushed via hand pressure) material in its current intact condition and is not considered to present a concern to residents or maintenance staff. The remainder of the presumed ACMs are considered to be non-friable and all materials were observed to be in good condition at the time of the site inspection, with the exception of the textured ceiling materials located in the entry of unit 507 which were observed to be damaged. It should be noted that a comprehensive asbestos inspection was not performed of the facility. Therefore, additional sampling may be warranted prior to future renovation activities. This asbestos survey was



nondestructive in nature, therefore, potential ACMs that are concealed inside walls, roofs, and inaccessible areas, were not sampled.

Prior to renovation activities, a comprehensive asbestos inspection which includes sampling of all materials to be impacted by renovation activities and an inspection of 100% of the units should be conducted at the subject property by an appropriately licensed asbestos inspector in accordance with State of South Carolina asbestos regulations. Any ACMs which are to be impacted during the renovation activities should be removed by a licensed asbestos abatement contractor in accordance with applicable regulations. Any remaining ACMs and/or PACMs should be managed under a site-specific Operations and Maintenance (O&M) Program.

The asbestos analytical results, inspector notes and inspector credentials are attached to this letter.

The foregoing report has been prepared in accordance with the contract between Client and D3G and under no alternative direction unless expressly stated otherwise in the report; the foregoing report is subject to the qualifications, limitations, and exclusions identified therein and in this section.

Applicable local, state, and federal guidelines, regulations, standards, and codes related to the services D3G performed in preparation of this report are subject to reasonable interpretation by Client, D3G, and governmental or regulatory inspectors and agencies. This report does not constitute a representation or warranty that the opinions and interpretations contained therein are the only ones available, and D3G shall not be liable for any contrary opinions, interpretations, or recommendations of such governmental or regulatory inspectors and agencies. If Client requests a more specific or definite opinion or interpretation related to a specific guideline, regulation, standard, or code provision, D3G may consider supplying the same by additional agreement and compensation.

The opinions, conclusions, and findings contained in this report are valid for a period of 180 days, and modifications or services the Client requests after this time may be provided under an additional agreement and compensation.

This report was performed for Client's sole benefit and use. No other party may claim any rights as a third-party beneficiary and no third-party has the right to claim reliance upon any information or documents provided by D3G. Client shall not distribute documents provided by D3G unless authorized in writing by D3G.

If you have further questions upon review of this letter, please contact me at (804) 237-1882.

Sincerely,



Kimberly L. Dingledine
Hazardous Materials Manager/Environmental Professional





AmeriSci Richmond

13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: 8047631200 FAX: 8047631800

November 27, 2023

Dominion Due Diligence Group
Attn: Kim Dingleline
201 Wylderose Drive
Midlothian, VA 23113

RE: Dominion Due Diligence Group
Job Number 123111667
P.O. #2023-0878
2023-0878; Arrington Manor; 2225 College Street - Columbia, SC

Dear Kim Dingleline:

Enclosed are the results for PLM asbestos analysis of the following Dominion Due Diligence Group samples received at AmeriSci on Monday, November 20, 2023, for a 3 day turnaround:

1A, 1B, 1C, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 3A, 3B, 3C, 6A, 6B, 6C, 6D, 6E, 6F, 6G

The 20 samples contained in zip lock bag were shipped to AmeriSci via Fed Ex 7741 4952 8950 TP 900. These samples were prepared and analyzed according to EPA PLM Method (EPA 600/R-93/116 Section 2.2). The required analytical information, analysis results, analyst signature and laboratory identification are contained in the PLM Bulk Asbestos Report. If TEM analysis was requested for selected samples the gravimetric reduction data (by Sec 2.3) and TEM Asbestos % (by Sec 2.5) are included in Table 1 along with a summary of Asbestos % by PLM for all samples analyzed.

This report relates ONLY to the sample analysis expressed as % asbestos. AmeriSci assumes no responsibility for customer supplied data such as "sample type", "location", or "area sampled". This report must not be used to claim product endorsement by AmeriSci, NVLAP or any agency of the U. S. Government. The National Institute of Standards and Technology accreditation requirements mandate that this report must not be reproduced, except in full, without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Massey".

Glenn F. Massey
QA Manager | Authorized Signatory

**AmeriSci Richmond**

13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

PLM Bulk Asbestos Report

Dominion Due Diligence Group
Attn: Kim Dingledine
201 Wylderose Drive

Midlothian, VA 23113

Date Received 11/20/23
Date Examined 11/27/23
AmeriSci Job # 123111667
P.O. #
Page 1 **of** 4
RE: 2023-0878; Arrington Manor; 2225 College Street - Columbia, SC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1A Location: Drywall And Joint Compound; 6th FL Cable CL Analyst Description: Brown/White, Heterogeneous, Fibrous, Drywall Asbestos Types: Other Material: Cellulose 7.0%, Non-fibrous 93%	123111667-01	No	NAD (by CVES) by David W. Ralbovsky on 11/27/23
1B Location: Drywall And Joint Compound; 501 Hall CL Analyst Description: White, Heterogeneous, Non-Fibrous, Drywall Asbestos Types: Other Material: Cellulose 3.0%, Non-fibrous 97%	123111667-02	No	NAD (by CVES) by David W. Ralbovsky on 11/27/23
1C Location: Drywall And Joint Compound; 507 Entry Ceiling Analyst Description: White, Heterogeneous, Fibrous, Drywall Asbestos Types: Other Material: Cellulose 4.0%, Non-fibrous 96%	123111667-03	No	NAD (by CVES) by David W. Ralbovsky on 11/27/23
2A Location: Drywall And Joint Compound; 6th FL Cable CL Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Joint Compound Asbestos Types: Chrysotile <1. % Other Material: Non-fibrous 100%	123111667-04	Yes	Trace (<1.0 %) (by CVES) by David W. Ralbovsky on 11/27/23
2B Location: Drywall And Joint Compound; 501 Hall CL Analyst Description: White, Heterogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile <1. % Other Material: Non-fibrous 100%	123111667-05	Yes	Trace (<1.0 %) (by CVES) by David W. Ralbovsky on 11/27/23

Client Name: Dominion Due Diligence Group

PLM Bulk Asbestos Report

2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
2C	123111667-06	Yes	Trace (<1.0 %)
Location: Drywall And Joint Compound; 507 Entry Ceiling			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Joint Compound			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
2D	123111667-07	Yes	Trace (<1.0 %)
Location: Joint Compound; 410 Bedroom CL			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Joint Compound			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
2E	123111667-08	Yes	Trace (<1.0 %)
Location: Joint Compound; 307 Bath CL			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Joint Compound			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
2F	123111667-09	Yes	Trace (<1.0 %)
Location: Joint Compound; 204 Bedroom 1 CL			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Joint Compound			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
2G	123111667-10	No	NAD
Location: Joint Compound; 103 Hall			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100%			
3A	123111667-11	No	NAD
Location: 2'x4' Ceiling Tile - P'n'F; 6th FL Hall			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: Gray, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 55%, Fibrous glass 15%, Non-fibrous 5.0%, Perlite 25%			

PLM Bulk Asbestos Report

2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
3B	123111667-12	No	NAD
Location: 2'x4' Ceiling Tile - P'n'F; 3rd FL Hall			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White/Gray, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 55%, Fibrous glass 15%, Non-fibrous 5.0%, Perlite 25%			
3C	123111667-13	No	NAD
Location: 2'x4' Ceiling Tile - P'n'F; 1st FL Hall			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White/Gray, Heterogeneous, Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Cellulose 55%, Fibrous glass 15%, Non-fibrous 5.0%, Perlite 25%			
6A	123111667-14	Yes	2.0%
Location: Popcorn Ceiling Texture; 6th FL Hall			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types: Chrysotile 2.0%			
Other Material: Mica Trace, Non-fibrous 93%, Perlite 5.0%			
6B	123111667-15	Yes	2.0%
Location: Popcorn Ceiling Texture; 6th Storage CL Middle			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types: Chrysotile 2.0%			
Other Material: Non-fibrous 98%			
6C	123111667-16	Yes	2.0%
Location: Popcorn Ceiling Texture; 501 Hall CL			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types: Chrysotile 2.0%			
Other Material: Non-fibrous 98%			
6D	123111667-17	No	NAD
Location: Popcorn Ceiling Texture; 507 Entry			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100%			

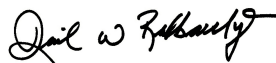
Client Name: Dominion Due Diligence Group

PLM Bulk Asbestos Report

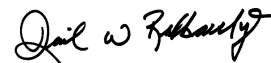
2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6E	123111667-18	Yes	Trace (<1.0 %)
Location: Popcorn Ceiling Texture; 410 Living Room			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
6F	123111667-19	Yes	Trace (<1.0 %)
Location: Popcorn Ceiling Texture; 204 Bedroom 1			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100%			
6G	123111667-20	No	NAD
Location: Popcorn Ceiling Texture; 1st FL Maint Shop			(by CVES) by David W. Ralbovsky on 11/27/23
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100%			

Reporting Notes:

Analyzed by: David W. Ralbovsky
Date: 11/27/2023

Reviewed by: David W. Ralbovsky



*NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis using Olympus, Model BH-2 microscope, Serial #229707, by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

123111667

ASBESTOS-CONTAINING MATERIALS SURVEY

SITE: Arrington Manor
ADDRESS: 2225 College Street- Columbia, SC
DATE: 11/15/23
CLIENT:

PERSONNEL: K. Hubicki
PROJECT #: 2023-0878
LABORATORY: AmeriSci
TAT: 3-day

TYPE OF ANALYSIS: PLM

☐ PLEASE ALLOW FOR POSITIVE STOP METHODOLOGY

HOMOGENOUS AREA	SAMPLE #	MATERIAL DESCRIPTION	LOCATION	QUANTITY/ FRIABILITY
1 (D) & 2 (JC)	1A/2A	Drywall and Joint Compound	6 th FL Cable CL	
1 (D) & 2 (JC)	1B/2B	Drywall and Joint Compound	501 Hall CL	
1 (D) & 2 (JC)	1C/2C	Drywall and Joint Compound	507 Entry Ceiling	
2	2D	Joint Compound	410 Bedroom CL	
2	2E	Joint Compound	307 Bath CL	
2	2F	Joint Compound	204 Bedroom 1 CL	
2	2G	Joint Compound	103 Hall	
3	3A	2'x4' Ceiling Tile - P'n'F	6 th FL Hall	
3	3B	2'x4' Ceiling Tile - P'n'F	3 rd FL Hall	
3	3C	2'x4' Ceiling Tile - P'n'F	1 st FL Hall	
6	6A	Popcorn Ceiling Texture	6 th FL Hall	
6	6B	Popcorn Ceiling Texture	6 th Storage CL Middle	
6	6C	Popcorn Ceiling Texture	501 Hall	
6	6D	Popcorn Ceiling Texture	507 Entry	
6	6E	Popcorn Ceiling Texture	410 Living Room	
6	6F	Popcorn Ceiling Texture	204 Bedroom 1	
6	6G	Popcorn Ceiling Texture	1 st FL Maint. Shop	

SUBMITTED BY: K. HUBICKI

DATE SUBMITTED: 11/17/23

SIGNATURE: 

RECEIVED BY:

DATE RECEIVED:

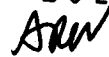
SIGNATURE:

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

Received

NOV 20 2023





AmeriSci Richmond

13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: 8047631200 FAX: 8047631800

November 30, 2023

Dominion Due Diligence Group
Attn: Kim Dingleline
201 Wylderose Drive
Midlothian, VA 23113

RE: Dominion Due Diligence Group
Job Number 123111841
P.O. #2023-0878
2023-0878; Arrington Manor; 2225 College Street - Columbia, SC (Ref: 123-11-1667)

Dear Kim Dingleline:

Enclosed are the results for PLM (EPA 400 point count) asbestos analysis of the following Dominion Due Diligence Group samples received at AmeriSci on Monday, November 27, 2023, for a 3 day turnaround:

2A, 2B, 2C, 2D, 2E, 2F, 6A, 6B, 6C, 6E, 6F

The 11 samples contained in zip lock bag were shipped to AmeriSci via Submitted To Be Reanalyzed . These samples were prepared and analyzed according to the EPA Interim Method (EPA 600/M4-82-020 per 40 CFR 763, subpt F, App. A). The required analytical information, analysis results, analyst signature and laboratory identification is contained in the Analyst's Report.

This report relates ONLY to the sample analysis expressed as percent asbestos. AmeriSci assumes no responsibility for customer supplied data such as "sample type", "location", or "area sampled". This report must not be used to claim product endorsement by AmeriSci, NVLAP or any agency of the U. S. Government. The National Institute of Standards and Technology accreditation requirements, mandate that this report must not be reproduced, except in full without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations respectively, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Glenn F. Massey". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Glenn F. Massey
QA Manager | Authorized Signatory

**AmeriSci Richmond**

13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

PLM Bulk Asbestos Report

Dominion Due Diligence Group
Attn: Kim Dingledine
201 Wylderose Drive

Midlothian, VA 23113

Date Received 11/27/23 **AmeriSci Job #** 123111841
Date Examined 11/30/23 **P.O. #**
Page 1 of 3
RE: 2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC (Ref: 123-11-1667)

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
2A Location: Drywall And Joint Compound; 6th Fl Cable CL Analyst Description: White, Heterogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile 0.3% Other Material: Non-fibrous 99%	123111841-01	Yes	0.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
2B Location: Drywall And Joint Compound; 501 Hall CL Analyst Description: White, Heterogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile 0.3% Other Material: Non-fibrous 99%	123111841-02	Yes	0.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
2C Location: Drywall And Joint Compound; 507 Entry Ceiling Analyst Description: White, Heterogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile <0.3 % pc Other Material: Non-fibrous 100%	123111841-03	Yes	Trace (<0.3 % pc) (by 400 pt ct) by Eric H. Ahles on 11/30/23
2D Location: Joint Compound; 410 Bedroom CL Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 0.3% Other Material: Non-fibrous 99%	123111841-04	Yes	0.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
2E Location: Joint Compound; 307 Bath CL Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 0.3% Other Material: Non-fibrous 99%	123111841-05	Yes	0.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23

Client Name: Dominion Due Diligence Group

PLM Bulk Asbestos Report

2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC (Ref: 123-11-1667)

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
2F Location: Joint Compound; 204 Bedroom 1 CL Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 0.3% Other Material: Non-fibrous 99%	123111841-06	Yes	0.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
6A Location: Popcorn Ceiling Texture; 6th FI Hall Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 1.5% Other Material: Non-fibrous 98%	123111841-07	Yes	1.5% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
6B Location: Popcorn Ceiling Texture; 6th Storage CL Middle Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 1.3% Other Material: Non-fibrous 98%	123111841-08	Yes	1.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
6C Location: Popcorn Ceiling Texture; 501 Hall CL Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 1.3% Other Material: Fibrous Talc 1.8%, Non-fibrous 97%	123111841-09	Yes	1.3% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
6E Location: Popcorn Ceiling Texture; 410 Living Room Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 0.5% Other Material: Non-Asbestos 98%, Fibrous Talc 1.5%	123111841-10	Yes	0.5% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23
6F Location: Popcorn Ceiling Texture; 1st FI Maint Shop Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material Asbestos Types: Chrysotile 0.5% Other Material: Fibrous Talc 1.5%, Non-fibrous 98%	123111841-11	Yes	0.5% pc (by 400 pt ct) by Eric H. Ahles on 11/30/23

Client Name: Dominion Due Diligence Group

PLM Bulk Asbestos Report

2023-0878; Arrington Manor; 2225 College Street - Columbia,
SC (Ref: 123-11-1667)

Reporting Notes:

Analyzed by: Eric H. Ahles
Date: 11/30/2023



Reviewed by: Eric H. Ahles



*NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis using Meiji, Model MT 6130 microscope, Serial #1410298, by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

KJAN 11/27/23

~~123111667~~

123111841

ASBESTOS-CONTAINING MATERIALS SURVEY

SITE: Arrington Manor
ADDRESS: 2225 College Street-- Columbia, SC
DATE: 11/15/23
CLIENT: _____

PERSONNEL: K. Hubicki
PROJECT #: 2023-0878
LABORATORY: AmeriSci
TAT: 3-day

TYPE OF ANALYSIS: PLM

☐ **PLEASE ALLOW FOR POSITIVE STOP METHODOLOGY**

HOMOGENOUS AREA	SAMPLE #	MATERIAL DESCRIPTION	LOCATION	QUANTITY/FRIABILITY
1 (D) & 2 (JC)	1A/2A •	Drywall and Joint Compound	6 th FL Cable CL	
1 (D) & 2 (JC)	1B/2B •	Drywall and Joint Compound	501 Hall CL	
1 (D) & 2 (JC)	1C/2C •	Drywall and Joint Compound	507 Entry Ceiling	
2	2D •	Joint Compound	410 Bedroom CL	
2	2E •	Joint Compound	307 Bath CL	
2	2F •	Joint Compound	204 Bedroom 1 CL	
2	2G	Joint Compound	103 Hall	
3	3A	2'x4' Ceiling Tile -- P'n'F	6 th FL Hall	
3	3B	2'x4' Ceiling Tile -- P'n'F	3 rd FL Hall	
3	3C	2'x4' Ceiling Tile -- P'n'F	1 st FL Hall	
6	6A •	Popcorn Ceiling Texture	6 th FL Hall	
6	6B •	Popcorn Ceiling Texture	6 th Storage CL Middle	
6	6C •	Popcorn Ceiling Texture	501 Hall	
6	6D	Popcorn Ceiling Texture	507 Entry	
6	6E •	Popcorn Ceiling Texture	410 Living Room	
6	6F •	Popcorn Ceiling Texture	204 Bedroom 1	
6	6G	Popcorn Ceiling Texture	1 st FL Maint. Shop	

SUBMITTED BY: K. HUBICKI

DATE SUBMITTED: 11/17/23

SIGNATURE: K. Hubicki

RECEIVED BY: _____

DATE RECEIVED: _____

SIGNATURE: _____

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

Received

NOV 20 2023

ASW

Subject: RE: AmeriSci Report/Invoice 123111667; 2023-0878; Arrington Manor; 2225 College Street - Columbia, SC
From: Kim Dingledine <k.dingledine@d3g.com>
Date: 11/27/2023, 12:01 PM
To: "vareresults@amerisci.com" <vareresults@amerisci.com>

123111841

Please run a point count analysis w/ a 3 day TAT on the following samples:

123111667-04
123111667-05
123111667-06
123111667-07
123111667-08
123111667-09
123111667-14
123111667-15
123111667-16
123111667-18
123111667-19



Kim Dingledine
(she, her, hers)
Hazardous Materials Manager

O: (804) 339-1187
E: k.dingledine@d3g.com
A: 201 Wylderose Drive
Midlothian, Va. 23113

People, Innovation, Passion, Excellence



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-----Original Message-----

From: vareresults@amerisci.com <vareresults@amerisci.com>

Sent: Monday, November 27, 2023 11:48 AM

To: Kim Dingledine <k.dingledine@d3g.com>

Cc: vareresults@amerisci.com

Subject: AmeriSci Report/Invoice 123111667; 2023-0878; Arrington Manor; 2225 College Street - Columbia, SC

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thank you from AmeriSci.

ASBESTOS-CONTAINING MATERIALS SURVEY FORM

SITE: Arrington Manor
 ADDRESS: 2225 College Street- Columbia, SC
 DATE: 11/15/2023

INSPECTOR NAME: Kathryn Hubicki
 INSPECTOR LICENSE #: BI-01079
 D3G PROJECT #: 2023-0878

HOMOGENOUS AREA/MATERIAL DESCRIPTION	LOCATIONS OBSERVED	SAMPLE #	QUANTITY OBSERVED	OBSERVED CONDITION	FRIABILITY	NOB MATERIAL?
<i>(i.e. 12"x12" brown floor tile, ceiling texture, roofing shingles, caulking materials)</i>	<i>(i.e. Unit 101 – throughout observed unit interiors, or mechanical closets, etc.)</i>	<i>(from COC or list as Presumed if not sampled)</i>	<i>(i.e. # of elbows, throughout interior, kitchens, etc.)</i>	<i>Note any areas of damage observed by inspector</i>	<i>Friable/non- friable/ encapsulated</i>	<i>Yes or No</i>
Drywall (1)	Walls and Ceilings Throughout (except Common Halls and Firewalls between some units)	1A-1C	108,000 SF	Good except for 507 Entry Ceiling	NF	No
Joint Compound (2)	Walls and Ceilings Throughout (except Common Halls and Firewalls between some units)	2A-2G	108,000 SF	Good except for 507 Entry Ceiling	F	No
2'x4' Ceiling Tiles (3)	Ceilings in Common Halls and Community Room, Manager's Office, Laundry, Security Office and Social Worker's Office	3A-3C	8,000 SF	Good	F	No

Page __ of __

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

ASBESTOS-CONTAINING MATERIALS SURVEY FORM

SITE: Arrington Manor
 ADDRESS: 2225 College Street- Columbia, SC
 DATE: 11/15/2023

INSPECTOR NAME: Kathryn Hubicki
 INSPECTOR LICENSE #: BI-01079
 D3G PROJECT #: 2023-0878

HOMOGENOUS AREA/MATERIAL DESCRIPTION	LOCATIONS OBSERVED	SAMPLE #	QUANTITY OBSERVED	OBSERVED CONDITION	FRIABILITY	NOB MATERIAL?
12"x12" Vinyl Floor Tile and assoc. Mastic (4)	Throughout Units, Central Common Hallways (except Elev. Lobbies), Room to Roof, Storage Rooms, Laundry, Community Room with Kitchen, Elevator Room, Stair Landings at Floors	Assumed	42,000 SF	Good	NF	Yes
Ceramic Tile Grout (5)	Elevator Lobbies, Community Room, 1 st Floor Bathrooms	Assumed	1800 SF	Good	NF	No
Popcorn Ceiling Texture (6)	Throughout Units, Above Ceiling Tiles in Central Floor Hallways on 2 nd -6th Floors, Records Room, Community Room with Kitchen, Maintenance Shop	6A-6G	44,000 SF	Good except for 507 Entry Ceiling	F	No

Page __ of __

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

ASBESTOS-CONTAINING MATERIALS SURVEY FORM

SITE: Arrington Manor
 ADDRESS: 2225 College Street- Columbia, SC
 DATE: 11/15/2023

INSPECTOR NAME: Kathryn Hubicki
 INSPECTOR LICENSE #: BI-01079
 D3G PROJECT #: 2023-0878

HOMOGENOUS AREA/MATERIAL DESCRIPTION	LOCATIONS OBSERVED	SAMPLE #	QUANTITY OBSERVED	OBSERVED CONDITION	FRIABILITY	NOB MATERIAL?
Assorted Colors 4" Cove Base and assoc. Mastic (7)	Room to Roof, Storage Closets, Throughout Units, Maintenance Shop, Elevator Room, 1 st Floor Bathrooms, Laundry, Security Office, Social Worker's Office, Community Room, Community Room with Kitchen, Stair Landings at Floors	Assumed	8,500 SF	Good	NF	Yes
White Undersink Coating (8)	Unit Kitchen Sinks	Assumed	4 SF/unit	Good	NF	Yes
8" Wood Grain Vinyl Plank and assoc. Mastic (9)	Manager's Office	Assumed	250 SF	Good	NF	Yes
Assorted Colors 6" Cove Base and assoc. Mastic (10)	Elevator Cars, Manager's Office	Assumed	150 LF	Good	NF	Yes

Page __ of __

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

ASBESTOS-CONTAINING MATERIALS SURVEY FORM

SITE: Arrington Manor
 ADDRESS: 2225 College Street- Columbia, SC
 DATE: 11/15/2023

INSPECTOR NAME: Kathryn Hubicki
 INSPECTOR LICENSE #: BI-01079
 D3G PROJECT #: 2023-0878

HOMOGENOUS AREA/MATERIAL DESCRIPTION	LOCATIONS OBSERVED	SAMPLE #	QUANTITY OBSERVED	OBSERVED CONDITION	FRIABILITY	NOB MATERIAL?
Assorted Vinyl Sheet Flooring (11)	Elevator Cars, Security Office, Social Worker's Office	Assumed	400 SF	Good	NF	Yes
Gray Undersink Coating (12)	Community Room with Kitchen	Assumed	4 SF	Good	NF	Yes
Exterior Transite Panels (13)	1 st Floor Panels above and below windows, door opening fillers and structures above entrance doors on front and back	Assumed	450 SF	Good	NF	No
Exterior Caulking (14)	Perimeter of Windows and Doors and Transite Panels	Assumed	3,250 LF	Good	NF	Yes
Membrane Roofing and assoc. Materials (15)	Roof	Assumed	7500 SF	Good	NF	Yes

Page __ of __

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003

ASBESTOS-CONTAINING MATERIALS SURVEY FORM

SITE: Arrington Manor
ADDRESS: 2225 College Street- Columbia, SC
DATE: 11/15/2023

INSPECTOR NAME: Kathryn Hubicki
INSPECTOR LICENSE #: BI-01079
D3G PROJECT #: 2023-0878

HOMOGENOUS AREA/MATERIAL DESCRIPTION	LOCATIONS OBSERVED	SAMPLE #	QUANTITY OBSERVED	OBSERVED CONDITION	FRIABILITY	NOB MATERIAL?
Mirror Mastic (16)??	1 st Floor Bathrooms	Assumed – if present at all – couldn't tell	12 SF	Good	NF	Yes

FACILITY NOTES (i.e. list units inspected, interviewed persons, known dates of renovations, construction, fires, etc.):

Escort was Columbia HA maintenance man Ricky.

Appears that Fire Exit at end of building was added on – not confirmed by anyone onsite but brick was slightly different.

Units Accessed: 601, 501, 507, 410, 307, 204, 211, 103

Interior Finishes: drywall and concrete block walls (halls are concrete block covered by wallpaper); vinyl and wood baseboards; vinyl, ceramic tile, concrete and carpet flooring; drywall, ceiling tile and metal decking (above ceiling tiles in hallways); undersink coating.

Exterior Finishes: Brick siding, transite panels, metal windows and doors, exterior caulking.

Page __ of __

DOMINION DUE DILIGENCE GROUP

201 Wylderose Drive ♦ MIDLOTHIAN ♦ VIRGINIA 23113 ♦ PHONE: (804) 358-2020 ♦ FAX: (804) 358-3003



1. Property Sign



2. Exterior Front Side



3. Residential Hallway



4. First Floor Hallway



5. Laundry



6. Maintenance Shop



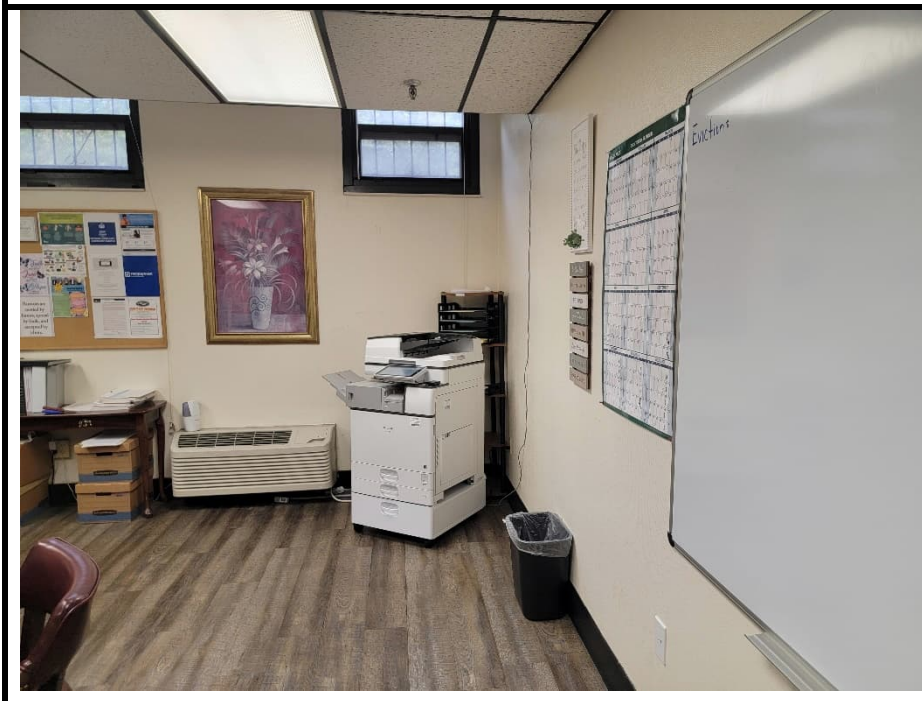
7. Common Bathrooms



8. Elevator Room



9. Community Room



10. Manager's Office



11. Security Office



12. File Room



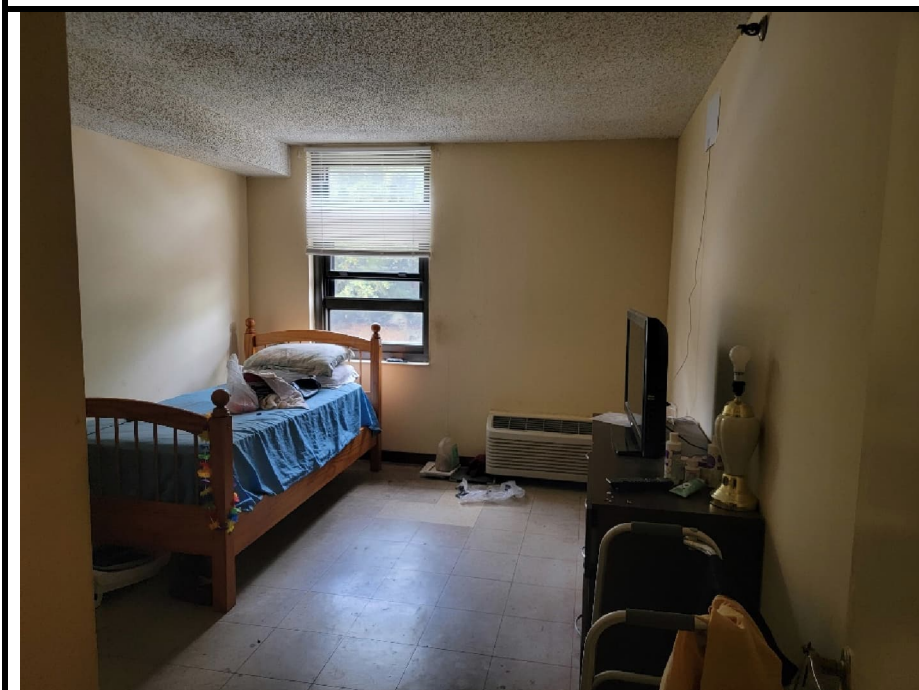
13. Community Room
with Kitchen



14. Garbage Room



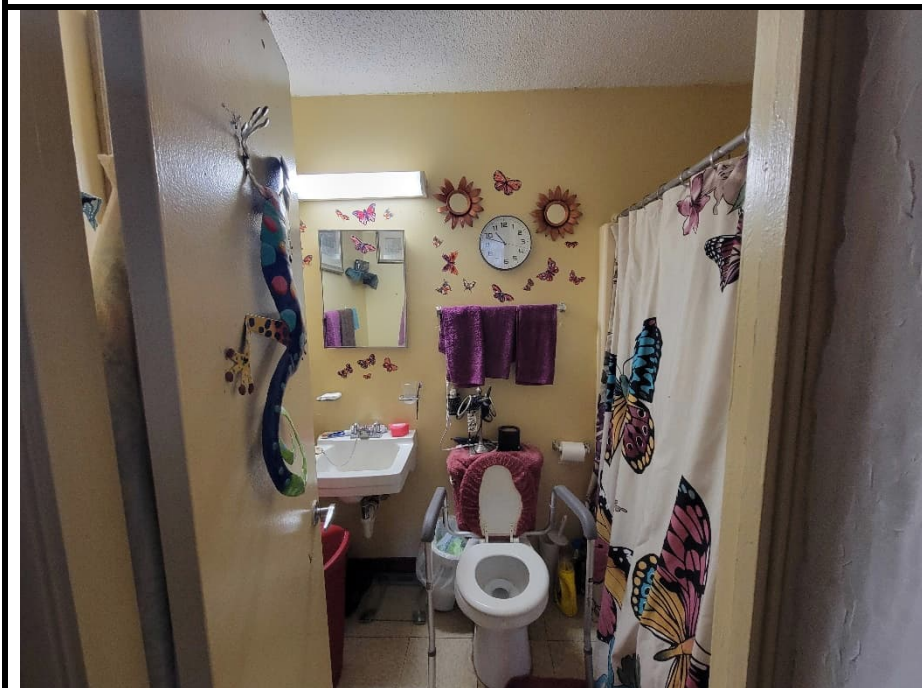
15. Fiberglass Pipe
Insulation



16. Representative Unit
Bedroom



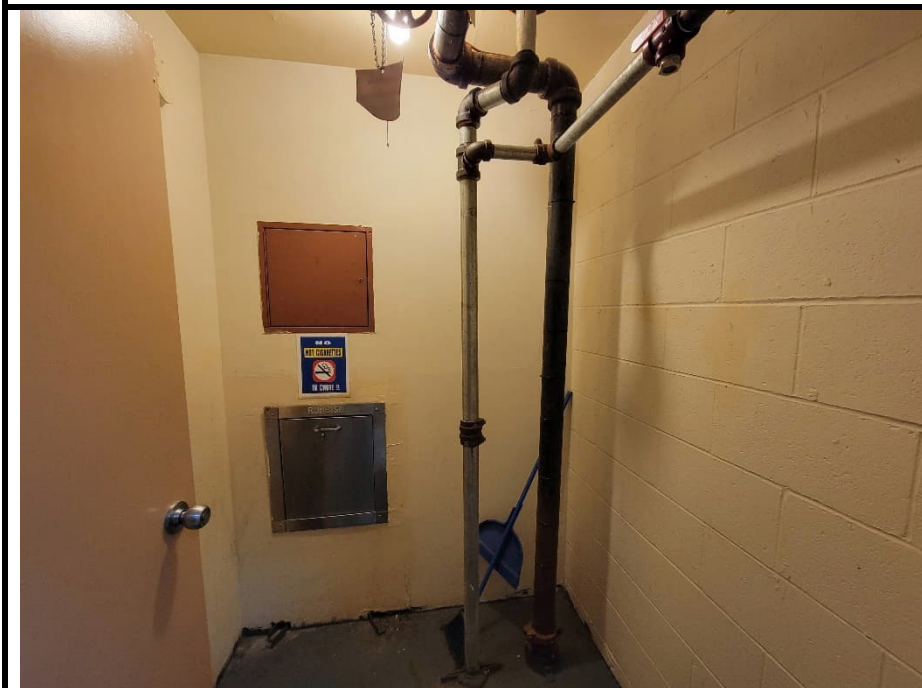
17. Living Room



18. Representative Unit
Bathroom



19. Representative Unit
Kitchen



20. Garbage Chute Closet



21. Stairwell



22. Assumed ACM Roof



23. View of Base of Roof
at Roof Access



24. ACM HA 6 – Ceiling
Texture on Metal
Decking above Ceiling
Tiles



25. ACM Ceiling Texture in Unit



26. Non-ACM HA 3 – 2'x4' Ceiling Tile



27. Assumed ACM
12"x12" Vinyl Floor
Tile and Assumed
ACM 4" Cove Base



28. Assumed ACM White
Undersink Coating



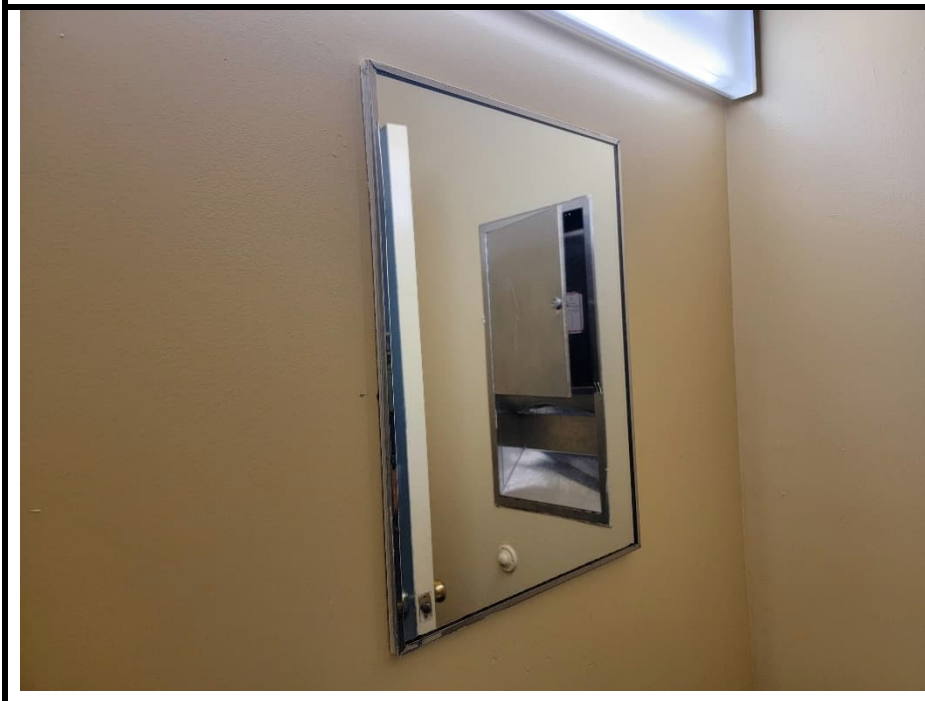
29. Assumed ACM Vinyl
Sheet Flooring in
Security Office



30. Damaged Ceiling at
Entry of Unit 507



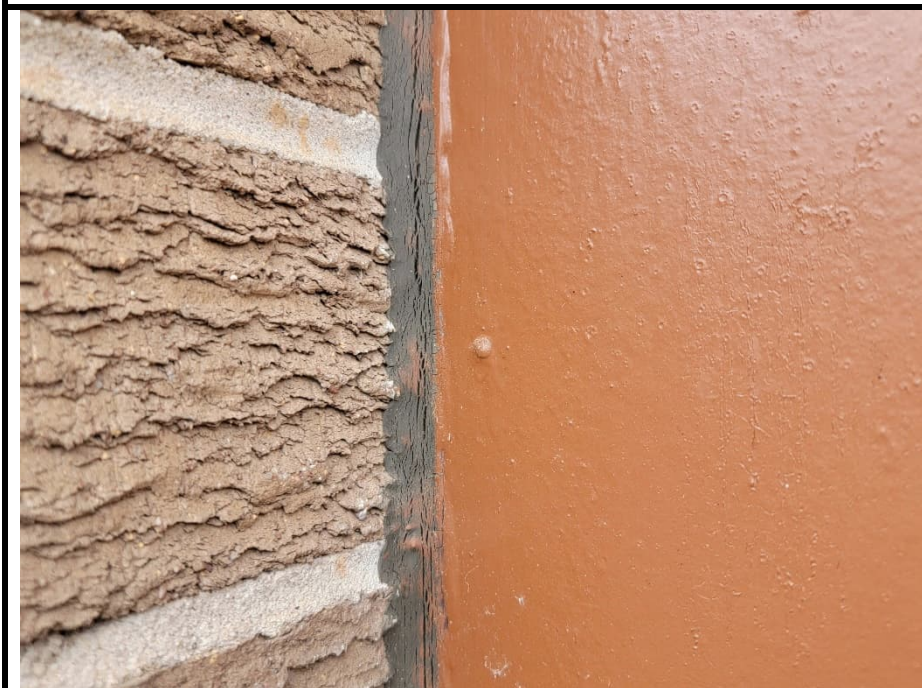
31. Assumed Vinyl Sheet Flooring and Assumed 6" Cove Baseboard in Elevator



32. Mirror in Common Bathroom that may have Assumed ACM Mastic



33. Ceiling above First Floor Ceiling Tiles at Hall



34. Assumed ACM Exterior Caulking



35. Assumed ACM
Transite Panels



36. Assumed ACM
Transite Panels on
Exterior



37. Assumed ACM
Exterior Window
Caulking

SCDHEC ISSUED

Asbestos ID Card

Kathryn Hubicki



CONSULTBI
CONSULTMP

BI-01079
MP-000309

Expiration Date:
06/05/24
06/05/24



GLOSSARY

Acoustical Plaster: Sound absorbing finishing material mill-formulated for application in areas where a reduction in sound reverberation or noise intensity is desired. These materials usually are applied in a minimum thickness of 1/2" (13 mm). The finish material is applied over gypsum plaster, plaster brown coat or other base plaster. The surface material is usually friable and has a rough surface appearance.

Acoustic Tile: Tile-shaped blocks of sound absorbent material used for ceilings or as wall facing. May be glued to substrate or laid in a rigid grid work.

ACM (ACBM): Asbestos-Containing Material (Asbestos-containing Building Material). Any material containing greater than one percent asbestos by volume.

Adequately Wet: Adequately Wet means sufficiently mix or penetrate with liquid (amended water) to prevent the release of particulate. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not necessarily sufficient evidence of being adequately wet.

Air Monitoring: The process of measuring the airborne fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added for use in wetting ACM to control asbestos fibers.

Asbestos: Chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that has been chemically treated and/or altered.

Asbestos Abatement Contractor: The firm contracted by the O&M Program Manager to perform emergency and non-emergency asbestos removal and/or repair.

Asbestos-Containing Waste Material: Any waste that contains commercial asbestos. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing waste and materials contaminated with asbestos including disposable equipment and clothing.

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

Asbestos Hazard Emergency Response Act (AHERA): An EPA regulation published in 40 CFR §763 covering asbestos-containing materials in schools. AHERA requires local education agencies to identify ACM in their school buildings, develop an asbestos management plan (O&M) and implement this plan. This O&M Program utilized aspects of this standard.

Asbestos O&M Work: Cleaning, maintenance, repair or renovation work involving asbestos containing materials where the intent of the activity is not to remove asbestos. NESHAP requires that the owner or operator of a demolition or renovation activity conduct a thorough inspection of the affected facility or part of the facility where demolition or renovation will occur.

Asbestos Program Manager: A building owner or designated representative who supervises all aspects of the facility asbestos management and control program.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6" to 9" (150-230 mm).

Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

Certified Industrial Hygienist (CIH): This individual is certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Concealed Suspension or Concealed Spline Ceiling System: Presents a monolithic ceiling surface, unobstructed by the cross-hatching of exposed grid members. Tiles are typically 12" x 12" (305 x 305 mm) or 12" x 24" (305 x 610 mm) with slots cut into the edges of tiles for the purposes of accepting flat or "T" splines to support the tiles.

Confined Space: A space that has limited openings for entry and exit, unfavorable natural ventilation and/or a space not designed for continuous worker occupancy. Examples include boilers, furnaces, pits, septic tanks, manholes and utility vaults.

Critical Barrier: One or more layers of polyethylene taped in place over openings into a work area. Openings to be covered include doors, windows, diffusers, and any other opening that could allow outside air into a work area.

Decorative Acoustic Finish: Finishing material mill-formulated and spray applied up to about 3/8" (10 mm) thick over gypsum wallboard. Material has a rough surface and is similar in appearance to acoustic plaster but is not designed for sound absorption.

Delamination: Separation of one layer from another.

Disposal Bag: Properly labeled 6 mil (0.15 mm) thick (or thicker) leak-tight plastic bags used for transporting asbestos waste from work and to disposal site.

Drop Cloth (Polyethylene): A layer of polyethylene on the floor of a work area to protect the floor below from contamination and to facilitate the clean-up of dust or debris generated during the work.

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

Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

EPA: U.S. Environmental Protection Agency

Excursion Limit (EL): The OSHA term used to define a maximum airborne concentration of asbestos in fibers per cubic centimeter as averaged over a sampling period of thirty minutes.

Fiber Release: Any uncontrolled or unintentional disturbance of ACM resulting in visible emission.

Fireproofing: Material applied to structural elements or systems which provides increased fire resistance, usually serving no structural function. This material is typically applied using spray equipment.

Friable Asbestos: (See "Regulated ACM")

Glovebag: A polyethylene or polyvinyl chloride bag-like enclosure affixed around an asbestos-containing source (most often, TSI) so that the material may be removed while minimizing release of airborne fibers to the surrounding atmosphere.

HEPA Filter: High-Efficiency Particulate Air Filter. Such filters are rated to trap at least 99.97% of all particles 0.3 microns (0.3 μm) in diameter or larger.

Independent Project Monitor: This individual is a CIH or one who performs asbestos abatement project monitoring under the direct supervision of a CIH. Responsibilities include: Inspections, Air Monitoring, Exposure Assessments, etc..

Maintenance/Custodial Workers: These individuals are employees of the building management who are responsible for performing limited O&M clean-up and removal activities.

Medical Surveillance: A periodic comprehensive review of a worker's health status. The required elements of an acceptable medical surveillance program are listed in the Occupational Safety and Health Administration standards for asbestos.

Mini-Enclosure: An enclosure constructed of polyethylene sheeting used for small scale, short duration asbestos maintenance or renovation work. Mini-enclosures can be small enough to restrict entry to the asbestos work area to one worker. Appendix G to OSHA regulation 29 CFR 1926.58 discusses mini-enclosures and recommends that a change room be constructed contiguous to the mini-enclosure.

Miscellaneous ACM: Interior asbestos-containing building material on structural components, structural members or fixtures, such as floor and ceiling tiles; does not include surfacing material or thermal system insulation.

Negative Pressure System: A local exhaust system intended to prevent the escape of contaminated air to the surrounding environment. It utilizes HEPA filtration capable of maintaining a pressure differential with a lower pressure inside the Work Area than in any adjacent area. This system recirculates clean air and/or generates a constant flow of air from adjacent areas into the work area.

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.

NESHAP: National Emission Standard for Hazardous Air Pollutants - EPA Rules under the Clean Air Act.

NIOSH: The National Institute for Occupational Safety and Health, which was established by the Occupational Safety and Health Act of 1970. Primary functions of NIOSH are to conduct research, issue technical information, and certify respirators.

Operations & Maintenance (O&M) Program: A program of work practices to maintain ACM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling ACM disturbance or damage.

Occupied Area: An area where personnel are present and are performing their normal activities intended for the area (such as in a typical office area from 8:00 to 5:00 p.m., Monday through Friday).

OSHA: Occupational Health & Safety Administration

OSHA Class I Work means activities involving the removal of TSI and surfacing ACM and PACM.

OSHA Class II Work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

OSHA Class III Work means repair and maintenance operations, where "ACM," including TSI and surfacing ACM and PACM, is likely to be disturbed.

OSHA Class IV Work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

Personal Air Samples: An air sample taken with a sampling pump directly attached to the worker with the collecting filter and cassette placed in the worker's breathing zone. These samples are required by the OSHA asbestos standards and the EPA Worker Protection Rule.

Phase Contrast Microscopy (PCM): A method of analysis using a light microscope, used to find the concentration of airborne fibers. Does not distinguish among asbestos and other fibers. Used by OSHA to find personal exposures, and by EPA to find area levels for AHERA project clearance.

Plenum: Any space to convey air in a building or structure. The space above a suspended ceiling is often used as an air plenum. This term is also used in the work practices to refer to spaces above a ceiling not used to convey air.

Polarized Light Microscopy (PLM): A method of analysis using a light microscope to find the chemical or mineral types of samples, including the concentration of asbestos in bulk materials. Used by EPA for AHERA and NESHAP, and by OSHA to see if asbestos is involved in a project.

Presumed Asbestos Containing Material (PACM) refers to materials that were presumed to contain asbestos and therefore not sampled by the certified asbestos inspector.

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.

Regulated ACM (RACM) is categorized as (a) Friable asbestos material (b) Category I nonfriable ACM that has become friable (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

(Note: *Regulated ACM is an EPA NESHAP concept. OSHA makes no distinction between friable and non-friable asbestos.*)

“Cutting” means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing or punching.

“Grinding” means to reduce to powder or small fragments and includes mechanical clipping or drilling.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified under AHERA (40 CFR Part 763, Sub-part F, Appendix A, section 1, Polarized Light Microscopy) that, when

dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Category I Nonfriable asbestos-containing material (ACM) means asbestos-containing packing, gaskets, resilient floor covering and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified under AHERA.

Category II Nonfriable ACM means any material, excluding Category I nonfriable ACM containing more than 1 percent asbestos as determined using the methods specified under AHERA, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Remove: For Operations and Maintenance work on ACM, “remove” refers to the removal of ACM as needed to perform a maintenance or repair O&M activity.

Repair: Returning damaged ACM to an undamaged condition or to an intact state so as to prevent fiber release.

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

Surfacing ACM: Asbestos-containing material that is sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural member, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Suspended “T” Bar Ceiling System: A false or dropped ceiling composed of acoustic tiles laid into an inverted metal “T” bar grid frame suspended by wires from building framing members.

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Temporary Barriers: One or more layers of 6 mil polyethylene installed to isolate a work area from other portions of a facility.

Thermal System Insulation (TSI): Thermal system insulation - asbestos-containing material applied to pipes, fittings, boilers, breaching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

Time Weighted Average (TWA): In air sampling, this refers to the average air concentration of contaminants during a particular time period.

Transmission Electron Microscopy (TEM): A method of analysis using an electron microscope, used to find and analyze the concentration of airborne or bulk asbestos fibers and structures. Distinguishes among asbestos and other materials; can detect smaller asbestos fibers than does PCM. Used by EPA to find area concentrations for large AHERA project clearance.

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 of debris, and entry by unauthorized personnel.

Work Practices: Procedures designed to be followed to avoid or minimize fiber release during activities affecting ACM.



O&M WORK PRACTICES

W-1 TOOLS, EQUIPMENT AND MATERIALS

The following is a list of tools, equipment and materials that are recommended to perform the work practices.

Tools and Equipment

- Utility knife
- Ground fault circuit interrupters (GFCI's), Extension cords and adapters
- Lockout tags
- Temporary work lights
- Wet wipes or bucket with clean water for wet wiping
- Smoke test bulb and tubes
- Wire cutters
- Tin snips
- Safety glasses
- Disposable coveralls

Abatement Equipment and Materials

- Polyethylene sheeting (6 mil thickness)
- Duct tape
- HEPA-Vacuum
- Disposal bags with labels
- Respirators
- Disposable coveralls (if required)
- Disposable towels or wet wipes
- Garden sprayer with amended water

W-2 PREPARING AMENDED WATER

Amended water solutions are prepared by mixing a measured amount of surfactant with clean water in accordance with the manufacturer's instructions. Surfactants might be considered hazardous substances. Review and comply with Material Safety Data Sheet (MSDS) before mixing and using these materials. Amended water shall be mixed in a labeled garden sprayer unit prior to the start of an O&M activity. Some practitioners have reported that liquid dishwashing detergent might be used as a surfactant for O&M work. They have used a mix of eight parts water to one part detergent. Amended water is to be used whenever materials are friable and have the potential to release fibers into the air.

W-3 SHUT-OFF AND LOCKOUT OF BUILDING SYSTEMS

In emergency situations, any mechanical, plumbing or electrical system(s) that might be affected by O&M activities shall be shut off, locked and tagged out with lockout tags at the circuit breaker panel or disconnect switch.

Building systems in a work area, systems that serve a work area, or systems that will be worked on during OSHA Class I, II, III activities shall be shut down prior to commencement of work. OSHA Class IV activities do not require building system shut down. Any air-handling systems (supply, return and exhaust) required to be shut down shall be shut off prior to the commencement of work as well as be locked and tagged with lockout tags at the circuit breaker panel or disconnect switch.

Lockout tags shall note when and why power is shut down and the personnel performing the lockout. There is to be only one key for each lock used on lockout tags to prevent accidental reactivation of equipment.

W-4 SECURING WORK AREA

In an emergency situation, maintenance or custodial workers may restrict access to immediately affected areas of the building if there is no potential for an asbestos exposure to those workers. If there is potential for asbestos exposure, workers shall secure the area to the next cleanest room, doorway, entrance, etc.. Maintenance workers may restrict the area by whatever means necessary. Work areas shall be vacated and secured (where feasible) by locking doors (from inside the area if possible) or other means. Access to the work area shall be restricted by asbestos barrier tape and "keep-out" signs around the perimeter of the work area. Install barrier tape and signs by taping or tying to fixed objects.

W-5 PUTTING ON RESPIRATORS AND PERFORMING FIT CHECKS

The procedures described below are based on the assumption that workers wearing respirators have been trained in the use of respirators and, for negative pressure respirators, fit tested, and enrolled in a medical surveillance program as part of a Respiratory Protection Program. Respirators used shall be approved by NIOSH and/or MSHA. These procedures are not a substitute for a Respiratory Protection Program in accordance with OSHA standard 29 CFR §1910.1001 and 29 CFR §1926.1101

Putting on Respirator

Wearers shall inspect their respirators before each use of the respirator. Respirators must not be damaged, have missing parts or be deformed in any way. The straps must be intact and well attached. Proper filter cartridges for the hazards to be encountered must be installed. Verify that filters have been replaced in accordance with the Respiratory Protection Program. Batteries for powered respirators shall be fully charged.

The respirator shall also be cleaned if it was not cleaned after the last use. If any problems exist, the respirator shall be repaired or replaced in accordance with the Respiratory Protection Program.

When putting on a respirator, the straps shall be loosened before it is put on. Filter caps (such as those used on some Powered Air Purifying Respirators) shall be taped to the filter body or stored where it will not be lost. The respirator shall be put on and then the straps tightened as recommended in the manufacturer's information provided with the respirator. Fit checks shall then be performed.

Fit Checks

Fit checks shall be performed in accordance with the Respiratory Protection Program by each worker each time they put on a respirator. Both positive and negative pressure fit checks are to be performed. A negative pressure fit check is done by donning the respirator and pulling the respirator straps so the unit fits snugly. Inhale gently while placing hands over filters to block off inhalation side. Respirator shall pull to face and no air shall leak in around face seal. A positive pressure fit check is done by exhaling gently (without breaking respirator seal to face) breathing normally while blocking off the exhalation valve. The face piece shall then expand away from face while exhaling. Adjust respirator straps as needed to obtain a good seal of the facepiece to the face. If a good seal cannot be obtained, obtain a new respirator and perform fit tests again.

W-6 PROTECTIVE CLOTHING

Protective clothing for workers typically consists of disposable coveralls, gloves and boots. Coveralls shall have hoods and booties attached. They shall provide complete coverage of the body with the exception of hands and face. Cloth coveralls that are cleaned by a facility equipped to launder asbestos contaminated clothing might also be used. Do not modify coveralls.

If street clothes could become contaminated, two coveralls shall be worn, or the street clothes shall be removed before the start of work. When possible, street clothes shall be removed in a changing area before protective clothing is put on. Protective clothing shall be put on after respirators. The coverall hood shall cover respirator straps.

Workers are encouraged to wear protective gloves that are duct taped at the cuffs to the protective coveralls. Eye, hearing, and head protection shall also be used where needed. Rubber slip-resistant boots are recommended for work areas where slip hazards might occur (protective booties shall cover feet inside the boots). Steel-toed boots shall be used in areas where foot hazards exist. Do not use coveralls with loose foot coverings for activities that involve climbing ladders or working on scaffold.

W-7 PRECLEANING WORK AREAS AND WET WIPING

Precleaning of work areas prior to the start of work is performed to remove historical dust that could be disturbed during the work. Precleaning includes picking up dust and debris with a HEPA vacuum, wet wiping non-porous surfaces, HEPA vacuuming surfaces that cannot be wet wiped, and cleaning any carpeted surfaces using steam extraction equipment.

Wet Wiping

The procedures to be used for wet wiping are as follows:

- Immerse disposable towel in bucket containing amended water.
- Wring out towel and fold into quarters.
- Wipe surface and refold to have a clean face exposed. Do not place towel back into bucket or water will become contaminated and will need to be replaced.
- Repeat step 3 until all faces of towel have been used. Obtain a clean towel if more wiping is needed.
- Dispose of used towels in asbestos disposal bags.
- Dispose of contaminated water as required by applicable regulations. **See contaminated water disposal procedure in the following text.**

HEPA Vacuuming

The procedures to be used for HEPA vacuuming are as follows:

- For floors, use a floor attachment with rubber floor seals and adjustable floor-to-attachment height. For furniture, fabrics or other surfaces use an upholstery attachment or brush attachment.
- Vacuum hard or smooth surfaces with attachment about 1/16" (2 mm) above the surface.
- Vacuum carpet or fabrics with attachment just touching the surface.
- Vacuum all surfaces in parallel passes with each pass overlapping the previous one by one-half the width of the attachment.
- Once surfaces are cleaned in one direction, clean a second time at right angles to the first cleaning.
- Use crevice brush or other tools to clean irregularly shaped surfaces.

Steam Cleaning Carpet

The procedures to be used for steam cleaning carpet are as follows:

- Steam clean carpet using carpet tool.
- Steam clean all surfaces in parallel passes with each pass overlapping the previous one by one-half the width of the attachment.
- Once surfaces are cleaned in one direction, clean a second time at right angles to the first cleaning.
- Water from cleaning process shall be treated in accordance with applicable

regulations - **See contaminated water disposal procedure in the following text.**

W-8 SETTING UP WORK AREAS

Maintenance workers performing O&M activities shall isolate the work area by installing critical barriers. A critical barrier is a six millimeter polyethylene sheet that covers an opening thus isolating air movement into or out of a work area. Work area isolation is not to be used in place of good work practices. Work practices such as wetting ACM, careful handling and local collection by HEPA vacuum shall be the primary means of fiber control during O&M work. Polyethylene protection is intended as a secondary means of protection during the work. State or local codes might require that fire retardant polyethylene be used for asbestos related work.

W-9 PACKAGING AND LABELING WASTE

If the applicable disposal site requires non-friable materials to be treated the same as friable materials then the following NESHAPS, DOT and other requirements apply. Although the following may apply even if the landfill does recognize non-friable asbestos containing waste, the Program Manager will be ultimately responsible for communications with the landfill for specific requirements of packaged asbestos containing waste. The Program Manager will notify the O&M workers of disposition of asbestos waste transport and disposal.

Asbestos-containing waste material from O&M activities shall be adequately wet in accordance with the NESHAP requirements (40 CFR §61.150). Verify waste packaging and other waste disposal requirements with the landfill that will receive the asbestos waste. Pre-labeled asbestos disposal bags shall be used for asbestos waste disposal where possible, appropriate and permissible. Disposal bags shall be collapsed by evacuating the air from the bag with a HEPA vacuum in the work area or enclosure. Once collapsed, twist the bag to form a neck and wrap it tight with duct tape. Fold neck of bag over to form a loop, then again wrap duct tape around neck and loop.

Asbestos waste is required to be placed into a disposal bag and sealed as described above then placed into a 55 gallon drum disposal. Label the disposal drum as required by applicable NESHAP, OSHA and DOT regulations.

All waste shall be labeled as required by federal, state and local regulations. Federal regulations requiring labeling of waste include OSHA regulations 29 CFR §1910.1200, §1910.1001 and §1926.1101, EPA's NESHAP regulation 40 CFR §61.150, and the Department of Transportation's Hazardous Materials Regulations 49 CFR §171 and 180. ACM packaging must meet general DOT and EPA requirements and be protective, marked and labeled. The OSHA requirements apply regardless of the amount of waste or measured exposure levels (see 29 CFR §1926.1101(l)).

Labels Requirements

OSHA 29 CFR 1926.1101(k)(2) requirement:

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

Department of Transportation (DOT) requirement

DOT's shipping paper and marking format, is:

- RQ, (Reportable Quantity, if over 1 lb (.4 kg) friable asbestos)
- WASTE (For transportation of waste material, if applicable)
- ASBESTOS (Shipping name; asbestos descriptions; see below)
- MIXTURE (For asbestos mixed with a binder or filler, etc.)
- Class 9 (Miscellaneous Hazardous Materials, includes asbestos)
- LTD QTY, (Limited quantity, if applicable)
- 20 OZ (.6 kg) (Total quantity of material described; may abbreviate unit)

NESHAP requirement

NESHAP requires that readily visible and legible warning labels as specified by OSHA under 29 CFR §1910.1001 or §1926.1101 be used on waste containers or wrapped materials. Waste material to be transported off the facility site must also be labeled with the name of the waste generator and the location at which the waste was generated. The labels shall have the appropriate information preprinted on the label. No hand written labels are allowed.

W-10 CLEANING TOOLS, EQUIPMENT, AND WORK AREA

Clean tools and equipment using HEPA vacuuming and/or wet wiping procedures. Special attention shall be given to cleaning extension cords, equipment wheels, vacuum hoses and other items that could pick up debris during the work. Tools and equipment shall be placed outside of the work area as soon as cleaning is completed. All polyethylene that is used shall be disposed of as ACM. Any items that cannot be fully cleaned (such as boots or tools) that might be used in another O&M activity shall be placed into disposal bags, sealed and labeled as ACM. These exterior of the bags shall be wet wiped and then placed away from the work area with the other tools and equipment. HEPA vacuum hoses can be sealed with tape over both ends if the outside of the hose is clean.

Cleaning of the work area where an O&M activity is conducted consists of HEPA vacuuming and/or wet wiping (as appropriate) all surfaces in the area.

The HEPA vacuum shall not be opened by maintenance personnel on the property site.

An abatement contractor shall be employed to empty and clean the vacuum in a contained area off site once a month, or as needed.

W-11 DECONTAMINATING WASTE

The exterior of packaged waste shall be HEPA vacuumed and wet wiped before it is moved out of the area/building. Packaged waste (barrel) shall be stored on a sheet of polyethylene when it is moved outside of the work area to the storage area.

W-12 WORKER DECONTAMINATION AND REMOVAL OF PROTECTIVE CLOTHING

Decontamination and removal of protective clothing following O&M activities shall use the applicable procedure(s) described below:

Removal of Protective Clothing

When drop cloth work area protection, or no work area protection, is required, HEPA vacuum all parts of protective clothing while standing at perimeter of drop cloth. Leaving respirator in place, remove protective clothing and fold inside out as it is removed. Place clothing, if contaminated, into a disposal bag and label as ACM waste.

Street Clothes

If street clothes are worn under protective clothing and are contaminated during the work, the street clothes shall be HEPA vacuumed, removed during decontamination and placed into a labeled disposal bag. These street clothes shall then be disposed of as ACM or taken to a facility that has equipment designed for cleaning asbestos-contaminated clothing.

Removal of Respirator

The procedures described below are based on the assumption that workers wearing respirators have been trained in the use of respirators and, for negative pressure respirators, fit tested, and enrolled in a medical surveillance program as part of a Respiratory Protection Program.

Remove respirator after removing protective clothing (if used). Before removing respirator, wash hands, face and surface of respirator with clean water and disposable towels. Use caution to avoid breaking seal between respirator facepiece and face. Avoid getting water into filter cartridges of respirator. Place disposable towels into a disposal bag. Remove respirator and follow procedures specified in Respiratory Protection Program for cleaning and storing respirator.

W-13 VISUAL INSPECTIONS

The Program Manager shall develop a protocol for performing visual inspections

following O&M work. A visual inspection shall be conducted prior to the completion of air sampling (if performed) to verify that all visible dust or debris has been cleaned up. The person performing the inspection is allowed to be a worker that reports directly to the Program Manager. When the APM or another person makes this inspection, they shall wear the same type of personal protective equipment worn by the workers. If visible dust or debris remains, it must be cleaned up using wet wiping and/or HEPA vacuuming before clearance sampling is performed (if necessary).

W-14 WASTE TRANSPORTATION, STORAGE AND DISPOSAL

An abatement contractor shall be hired to transport asbestos waste from O&M activities to an approved landfill after the work is completed. Workers transporting waste shall follow Respiratory Protection Program recommendations concerning respirator requirements for transporting asbestos waste. Do not drag packaged waste. All waste shall be lifted and carried, or transported in wheeled carts, when moved from one area to another. Packaged waste shall be placed, not thrown or dropped, into vehicles, storage areas and the landfill.

Asbestos waste that is pending transport to a landfill shall be stored in a secure, lockable area. Signage in accordance with OSHA and NESHAP shall be posted at the storage area and on vehicles used to transport asbestos-containing waste material during loading and unloading. When asbestos waste in the storage area is taken to a landfill, it shall be transported in accordance with all applicable federal, state and local regulations. Asbestos waste shipment records shall be completed in accordance with the requirements in NESHAP Section 61.150.

The workers conducting O&M activities shall document waste in a manner established or approved by the Program Manager. Once the documentation is completed and the waste is stored or taken to a landfill, the documentation shall be turned over to the Program Manager to file with O&M records. The NESHAP waste shipment records must also be completed (where applicable) and filed with waste disposal records.

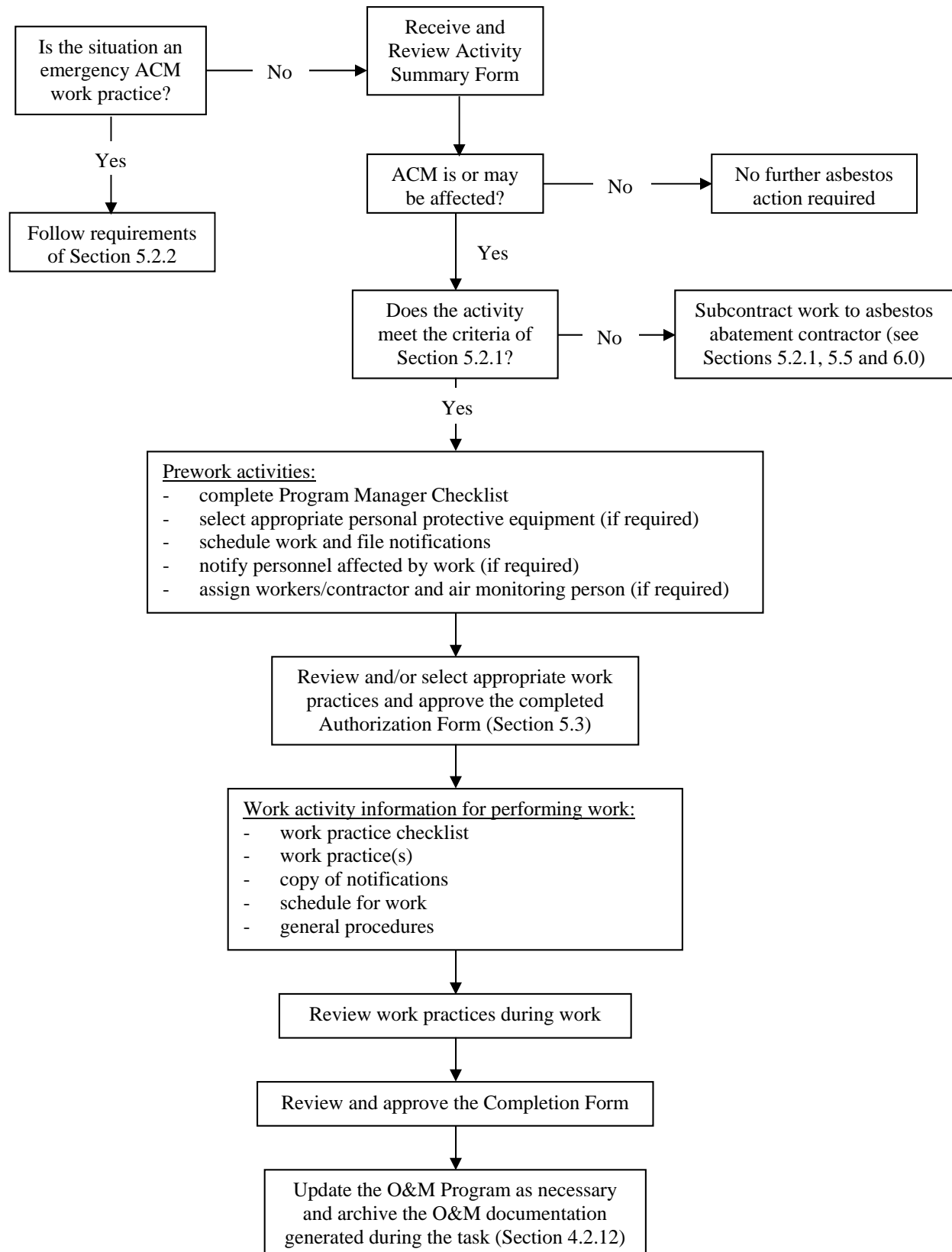
W-15 DISPOSAL OF CONTAMINATED WATER

Contaminated water from O&M activities shall be stored in a leak-proof plastic waste drum. The drum shall be stored on site until it can be transported by the abatement contractor to a location with filtering equipment. A drum containing waste water can be stored on site for a minimum of 30 days.



Program Manager Decision-Making Flowchart

Work Practice Selection and Use For Non-Emergency ACM Work Practices





ACTIVITY SUMMARY FORM

Name: _____ Date: _____

Telephone No. _____ Job Request No. _____

Requested starting date: _____

Anticipated finish date: _____

Address, building, and room number(s) (or description of area) where work is to be performed:

Description of work:

Description of any asbestos-containing material that might be affected. if known (include location and type):

Name and telephone number of requestor:

Name and telephone number of supervisor:

Submit this application to:

Program Manager

NOTE: An Activity Summary form must be submitted for all maintenance work whether or not asbestos-containing material might be affected. An authorization must then be received before any work can proceed.

_____ Granted (Job Request No.) _____

_____ With conditions*

_____ Denied

*Conditions:

AUTHORIZATION FORM

Authorization No. _____

Authorization is given to proceed with the following maintenance work:

PRESENCE OF ASBESTOS-CONTAINING MATERIALS

_____Asbestos-containing materials are not present in the vicinity of the maintenance work.

_____ACM is present, but its disturbance is not anticipated: however, if conditions change, the Asbestos Program Manager will re-evaluate the work request prior to proceeding.

_____ACM is present, and may be disturbed.

Work Practice if Asbestos-Containing Materials Are Present

The following work practices shall be employed to avoid or minimize disturbing asbestos:

Personal Protection if Asbestos-Containing Materials Are Present

The following equipment/clothes shall be used/worn during the work to protect workers:

Special Practices and/or Equipment Required

Signed: _____ Date: _____

Asbestos Program Manager

COMPLETION FORM

Evaluation of Work Affecting Asbestos-Containing Materials

This evaluation covers the following maintenance work:

Location of work (address, building, room number(s), or general description):

Date(s) of work: _____

Description of work:

Work approval form number: _____

Evaluation of work practices employed to minimize disturbance of asbestos:

Evaluation of work practices to contain released fibers and clean up:

Evaluation of equipment and procedures used to protect workers:

Personal air monitoring results: (in-house worker or contract?)

Worker name _____ Results: _____

Worker name _____ Results: _____

Handling or storage of ACM Waste: _____

Signed: _____ Date: _____

Asbestos Program Manager



ASBESTOS PROGRAM MANAGER CHECKLIST

Work to be performed:

- ___ Review or request survey data to determine whether ACM is affected.
- ___ Review historical air monitoring data for work practices to be used.
- ___ Work Practice(s) selected for all ACM to be encountered.
- ___ Select personnel protective equipment and decontamination requirements to be used (if needed).
- ___ Select appropriate materials and review potential hazards (confined spaces, scaffold use, etc.).
- ___ Schedule work when area is not in use or plan developed to isolate area (if necessary).
- ___ Federal, state and local notifications filed (if applicable).
- ___ Notify Occupants/personnel affected by work .
- ___ Assign workers (or contractor) with appropriate level of training. Verify currency of training, fit tests, and medical surveillance.
- ___ Assign air monitoring person/Independent Project Monitor and determine air monitoring to be performed (if needed). Record and archive air monitoring results.
- ___ General Procedure(s) Reviewed
- ___ Schedule of work
- ___ Review work practices during work for compliance with requirements.
- ___ Complete Evaluation of Work Affecting ACM.
- ___ Retain and archive all required records in proper location..

Signature: _____ **Date:** _____
Asbestos Program Manager

ANNUAL O&M PROGRAM REVIEW

It is the policy of the Management to review this Asbestos O&M Program on an annual basis (at a minimum) and ensure that the program is being adhered to. This O&M Program cannot be modified without prior approval from the Property Owner or their representative.

This O&M Program was last reviewed by:

Signed: _____ Date: _____

Printed Name: _____

Modifications were made to the following section(s):

This O&M Program was last reviewed by:

Signed: _____ Date: _____

Printed Name: _____

Modifications were made to the following section(s):

This O&M Program was last reviewed by:

Signed: _____ Date: _____

Printed Name: _____

Modifications were made to the following section(s):



EMERGENCY NOTIFICATION FORM

Building:

Material Location(s):

Material Type:

Describe Damage:

Response Priority: High Medium Low

Immediate Response Taken (if any):

Potential for Immediate Exposure to Occupants/Workers:

 High Medium Low

Print Name

Signature.....

Date

ASBESTOS NOTIFICATION

FACILITY: Arrington Manor
2225 College Street
Columbia, South Carolina

To: Building Occupants ***Include others as necessary***
From: Asbestos Program Manager
Date: ***Date***

A limited survey was performed on this property for asbestos-containing materials (ACM) on November 15, 2023. The materials that were identified as ACMs and/or presumed asbestos-containing materials (PACMs) are included in an Operations and Maintenance (O&M) Program. The O&M Program outlines safe practices and procedures for maintenance and custodial workers to follow when performing normal duties that may impact ACM. Also included in the Program are practices and procedures for the control of asbestos when damage occurs.

Adverse health effects related to asbestos exposures are known to occur as a result of exposure to excessive asbestos concentrations. However, exposures to low concentrations of asbestos fibers may also result in adverse health effects. Inhalation and ingestion of asbestos fibers have been implicated in a number of respiratory and digestive system diseases. The O&M Program is designed to prevent asbestos exposures and protect human health and the environment from the hazards associated with exposure to airborne asbestos fibers.

The O&M Program requires a re-inspection of ACMs to be performed every six months. Building occupants shall be informed of the results of the inspection by means of this notification. Included in the following is a list of ACMs and/or PACMs that are present in the facility.

- Textured ceiling materials
- Vinyl flooring and covebase materials and associated mastics
- Ceramic tile and grout
- Undersink coating materials
- Transite panels
- Mirror mastics
- Caulking materials
- Roofing materials

If there are any materials that you have identified from thRTU AND e information in this notification, that are not in good condition, please contact the Asbestos Program Manager immediately.

General procedures which should be followed to ensure the health and safety of all tenants, employees, and outside contractors from asbestos exposure include:

- Avoid damaging, disturbing and/or crushing the asbestos-containing materials within the facility.
- If damaged and/or dislodged asbestos-containing materials are observed, evacuate the general area and notify the asbestos program manager. Please do not attempt to clean or repair the materials. Avoid walking on or through the area(s) where damaged ACM is present.



OVERVIEW OF GENERAL OPERATION AND MAINTENANCE ACTIVITY

Activities which may impact or disturb any asbestos-containing materials or any suspect ACM are not permitted to be performed by any maintenance personnel or tenants of the building. Activities which may be performed under the O&M program using a work permit program include general maintenance. The maintenance staff should follow these procedures:

- (1) Refer to the ACM inspection report to determine if any ACM is present in the area where the work will occur. If ACM is present, but is not expected to be disturbed, the building owner/management should note the presence of the ACM on the permit form.
- (2) If ACM is both present and likely to be disturbed, the building owner/management should visit the area where the work is to be performed and determine what work practices should be instituted to minimize the release of asbestos fibers during the maintenance activities.
- (3) The determination should be recorded on a Maintenance Work Authorization Form, which is then forwarded to the in-house maintenance supervisor or to the maintenance contractor to authorize the work. The building owner/management should ensure a copy of both the request and authorization forms are placed in a permanent file.
- (4) Where the task is not covered by previously approved standard work practices, the two-hour trained and six-hour trained maintenance workers should contact the Asbestos Program Manager for the approval of work methods prior to the commencement of the work. The building owner/management should ensure the appropriate work practices and protective measures are used for the job.
- (5) For all jobs where contact with ACM or PACM is likely, the building owner/management should visit the work site prior to the commencement of the work to ensure the job is being performed properly.
- (6) The building owner/management's observations should be documented on an Evaluation of Work Form. Any deviation from standard and approved work practices should be recorded immediately on the Evaluation of Work Form and the practices should be immediately corrected.
- (7) Upon completion of the work, a copy of the Evaluation of Work Form should be placed in the permanent asbestos file.

GUIDANCE FOR THE CLEANING OF ASBESTOS DUSTS AND DEBRIS

In areas where the known asbestos-containing materials are noted to be damaged or deteriorating then asbestos dust and debris clean-up is warranted. In addition, areas containing damaged asbestos should be cleaned on a regular basis to minimize the collection of asbestos dusts. Cleaning of asbestos dusts is conducted through typical wet mopping methods and proper disposal of the wastes. If elevated levels of settled asbestos dusts are suspected, cleaning practices can be supported with the use of a HEPA vacuum. The following are asbestos dust cleaning protocols:

- (1) Prepare cleaning solution per amended water instructions (See Appendix C).
- (2) If settled dusts are present to the naked eye, initially vacuum the affected area with a HEPA style vacuum. DO NOT use a conventional vacuum.
- (3) Apply a coat of cleaning solution and allow to activate for 10-15 minutes.
- (4) Mop affected area with a clean mop. Replace mop head each 500 square feet of surface area to ensure that contaminated mop heads are not used.
- (5) Dispose of all mop heads in accordance with state and federal regulations.
- (6) Perform asbestos dust clearance testing if necessary (See Section 5.5.2.1).

In areas where the known or presumed asbestos-containing material is damaged, the maintenance staff may need to repair the building components as a maintenance activity (not an asbestos removal activity). Repair activities should employ the following steps:

- (1) Conduct work during off-hours and isolate the area to prevent unauthorized personnel access.
- (2) Turn off air handling units such as air conditioning and/or heating unit.
- (3) Prepare work area by sealing the area (i.e. heating vents, windows and doors) by covering with polyethylene sheeting.
- (4) Maintenance staff shall don approved respirators and protective personnel equipment/clothing.
- (5) Repair damaged surface area using an approved asbestos abatement methodology and seal with an encapsulant.
- (6) Clean-up enclosed area and clean-up potential asbestos dusts per dust cleaning methodologies.
- (7) Dispose of all used cleaning supplies, containment barriers, and asbestos debris/dust in accordance with state and federal regulations.

GUIDANCE FOR TEXTURED CEILING MATERIALS

The textured ceiling materials at the subject property are documented to contain asbestos. These materials are generally considered to be friable asbestos-containing materials if impacted. Prohibitions and limitations apply to the care of this category of materials:

- No sanding of these materials;
- No dry-scraping of these materials is allowed.

For removing materials which contain asbestos, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Ceilings shall not be sanded;
- (2) All scraping shall be performed using wet methods;
- (3) The use of conventional vacuums and dry sweeping is prohibited;

In emergency situations, whereas removal or repair of a limited amount of the textured ceiling material is required, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) The HVAC system must be shut down and locked out prior to any removal activities.
- (2) The material must be wetted prior to removal;
- (3) Polyethylene drop cloths shall be placed beneath the work area to prevent contamination of other areas
- (4) Vacuums equipped with HEPA filter, disposable dust bag, and metal scraper tool (no brush) shall be used to clean the material;
- (5) Dry sweeping is prohibited;

Gross removal of asbestos-containing textured ceiling materials is not allowed to be conducted by untrained and unlicensed staff. Routine and minor maintenance tasks involving isolated disturbance of the textured ceiling materials should be performed using controlled methods. Industry standard is to use methods involving an encapsulating foam (e.g. shaving cream), through which the disturbance is made; whereby resulting in no visible dust/emissions. As an alternative, minor repairs can be performed using localized HEPA vacuum exhaust to reduce any potential emissions, dusts and debris.

GUIDANCE FOR VINYL FLOORING AND COVEBASE MATERIALS AND MASTICS

Vinyl flooring materials, covebase materials, and associated mastics at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of materials:

- * No sanding of these materials;
- * Floor stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- * Dry buffing may be performed at any speed as long as the flooring has sufficient finish to prevent the pad from contacting the mastics.

For removing materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable vinyl flooring, covebase, its backing, or mastic shall not be sanded;
- (2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;
- (5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (6) Materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;
- (7) Non-friable resilient flooring and covebase materials including associated mastics and backings shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

Removal of asbestos-containing vinyl flooring and covebase materials and associated mastics is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR CERAMIC TILE AND GROUT

The ceramic tile and grout located at the subject property is presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of material:

- * No sanding of these materials;
- * Floor/wall stripping must use low abrasion pads at speeds below 300 rpm and wet methods;
- * Dry buffing may be performed at any speed as long as the materials have sufficient finish to prevent the pad from contacting the tile/grout material.

For removing non-friable ceramic tile and grout which contains ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable ceramic tile and grout shall not be sanded;
- (2) Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean these materials;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;
- (5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (6) Tiles shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing ceramic tile and grout is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR UNDERSINK COATING MATERIALS

The undersink coating materials at the subject property are identified and/or presumed to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of these materials;

For removing the sinks containing non-friable undersink coating materials, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable undersink coating materials shall not be sanded;
- (2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;
- (3) Dry sweeping is prohibited;
- (4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (5) Sinks shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing undersink coating materials is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR NON-FRIABLE TRANSITE PANELS

The transite panels at the subject property are presumed to contain asbestos. Prohibitions and limitations apply to the care of the non-friable material:

- No sanding of this material;

For removing materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable transite panels shall not be sanded;
- (2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;
- (3) Dry sweeping is prohibited;
- (4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (5) Transite panel materials shall be removed intact with the least amount of damage as possible, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing transite panel materials is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR MIRROR MASTIC

The mirror mastic in the beauty shop is presumed to contain asbestos. Prohibitions and limitations apply to the care of this category of materials:

- * No sanding or chipping of these materials;

For removing non-friable mirror mastics which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Non-friable mirror shall not be sanded;
- (2) Vacuums equipped with HEPA filter shall be used to clean any debris;
- (3) All scraping of residual adhesive and/or backing shall be performed using wet methods;
- (4) Dry sweeping is prohibited;
- (5) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (6) Mirror mastic shall be assumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

Removal of asbestos-containing mirror mastic is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR CAULKING MATERIALS

The subject property contains caulking materials that are presumed to contain asbestos. Prohibitions and limitations apply to the care of these categories of materials:

- * No sanding of these materials;

For removing the caulking materials which contain ACM or where the employer has not proven the absence of ACM, the employer shall ensure that employees comply with the following work practices and that employees are trained in these practices:

- (1) Caulking materials shall not be sanded;
- (2) Vacuums equipped with HEPA filter and disposable dust bag shall be used to clean the materials;
- (3) Dry sweeping is prohibited;
- (4) Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of section 29 CFR 1926.1101(g)(5) of the Construction standard;
- (5) Caulking materials shall be removed intact, unless the employer demonstrates that intact removal is not possible;

Removal of asbestos-containing caulking materials is not allowed to be conducted by untrained and unlicensed staff.

GUIDANCE FOR ROOFING MATERIALS

The roofing materials at the subject property are presumed to contain asbestos unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques. Prohibitions and limitations apply to the care of this category of material:

- * No sanding of these materials;
- * No dry-scraping of these materials is allowed.
- * No cutting of these materials is allowed.

Removal of the presumed asbestos-containing roofing materials is not allowed to be conducted by untrained and unaccredited staff. Sampling of these materials should be conducted prior to roof removal activities.

ROUTINE HOUSEKEEPING DUTIES

If employees of the Arrington Manor perform routine custodial duties that involve working near or cleaning ACM that is not enclosed, sealed or otherwise protected from release of asbestos fibers into the air certain housekeeping procedures must be strictly adhered to. This activity is covered by the General Industry standard as long as no construction activity is involved.

- (1) The building owner/management must provide the affected workers with asbestos awareness training each year. The course must be provided at no cost to the employee. The course must also cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, and who to tell and what to do if such materials are dislodged or become non-intact. This training must be provided regardless of the expected exposure levels to housekeepers.
- (2) In addition, if the building owner/management should reasonably expect that any of the housekeeping employees may be exposed in excess of a permissible exposure limit (PEL: 0.1 fibers per cubic centimeter as a time-weighted average over an 8 hour period or 1.0 fibers per cubic centimeter over a 30 minute period), then the following procedures must be adhered to:
 - (a) Monitor according to the OSHA standard's requirements to accurately determine the airborne concentrations.
 - (b) Provide employees with medical surveillance. A medical surveillance program requires the worker to complete a health questionnaire and may include a physical examination at no cost to the employee. The building owner/management must keep exposure and medical surveillance records for the duration of employment plus 30 years.
 - (c) Restrict access to areas of expected over-exposure
 - (d) Provide more extensive training: An annual asbestos awareness course is required. The course must be provided at no cost to the employee. The course must cover the health effects of asbestos exposure, the hazards of smoking and asbestos, use of respirators, locations of asbestos materials and signs of their damage, how to respond to asbestos exposure, and required housekeeping work practices.
 - (e) Provide appropriate respirators and protective clothing at no cost to employees to use while working in areas of potential over-exposure. Respirators must be equipped with HEPA filters.

Housekeeping activities conducted in the immediate area of friable or significantly damaged or loosely bonded ACM may indicate significant airborne exposure potential. Activities which release fibers from ACM such as grinding, cutting, or sanding, also have such potential. Please note that reference here is only to workers who are exposed to accessible asbestos when doing routine housekeeping activities. It does not include maintenance activities, repair, removal, or construction work that may involve disturbance or removal of asbestos-containing materials. Neither does it include clean-up and disposal of dust or debris resulting from construction, renovation, removal, repair, or maintenance activities. Performance of these tasks by the housekeeping employees may trigger additional obligations that are described elsewhere in this Operations and Maintenance Program.