



ASBESTOS ABATEMENT PROJECT DESIGN

City of Spartanburg
213 Windigo Road
Spartanburg, South Carolina

Conducted By:

Apex Environmental Management, Inc.
7 Winchester Court
Mauldin, South Carolina

Prepared for:
The City of Spartanburg
440 South Church St., Suite B
Spartanburg, South Carolina 29306

Apex Project Number: 0124-01

June 24, 2024



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June 24, 2024

7 Winchester Court
Mauldin, SC 29662
864.404.3210 office
864.404.3213 fax
www.apex-ehs.com

Mr. Martin Livingston
City of Spartanburg
440 South Church Street, Suite B
Spartanburg, SC 29306

Reference: Asbestos Project Design
213 Windigo Road
Spartanburg, South Carolina

Dear Mr. Livingston:

SERVICES

Indoor Air Quality
Mold Remediation
Asbestos & Lead
Industrial Hygiene
Worker Health & Safety
Mold Consulting
Moisture Management Plans
Safety Assessment
Environmental Site Assessments
Hazard Communication

Apex Environmental Management, Inc. (Apex) is pleased to provide the City of Spartanburg with an Asbestos Abatement Project Design for the referenced property. Our services were in general compliance with the EPA published guidance document, dated July, 1990, entitled, "Managing Asbestos in Place: A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials."

Apex appreciates the opportunity to be of service during to your project. If you have any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

Apex Environmental Management, Inc.;

A handwritten signature in blue ink, appearing to read 'RS', is written over a horizontal line.

Rebecca W. Shultz, CIH, CSP
SC Project Designer # PD-00060
Expiration Date: July 5, 2024

Attachments: Asbestos Project Design
Photographs

SECTION 1 SUMMARY OF THE WORK

1.1 DESCRIPTION OF THE WORK

The subject site is a partially collapsed residence located at 213 Windigo Road in Spartanburg, South Carolina. The structure is severely damaged due to fire and is no longer structurally sound. Due to the unsafe conditions at the site, Apex was unable to complete a full asbestos inspection. Therefore, Apex has assumed the materials in the main structure to be asbestos containing materials. The residence is scheduled for demolition and subsequently requires abatement of asbestos containing materials per South Carolina Department of Health and Environmental Control (SCDHEC) Regulations. This design has been implemented by your request and/or in accordance with 40 CFR 763.90 (g) if the abatement renovation project involves the removal of greater than either 3,000 square, 1,500 linear or 656 cubic feet of ACM.

Below is a brief description of the estimated quantities of asbestos containing materials to be abated.

ACM Description	Location	*Estimated Quantity
Main Structure, Contaminated Debris, & Concrete Slab	Residence	6,000 CF

The quantities and locations of ACM as indicated and the extent of the work included in this section are **estimates**. **The Asbestos Abatement Contractor will be responsible for verifying quantities.** The contractor must make pre-bid field measurement to verify actual quantities. Based on site evaluation, the residence is not stable enough to perform abatement of the structure, therefore, the building will be demolished with the asbestos in place and the debris transported as asbestos containing waste.

RESIDENCE REMOVAL

- A. Structure will be demolished with asbestos in place and debris piles removed by mechanical means as friable asbestos material. Debris will be placed into lined containers that will be fully covered during transport. Containers will be lined with two layers on 6-mil polyethylene sheeting.
- B. The asbestos material shall be sprayed with water prior to disturbance. A fine spray/mist of the water shall be applied to reduce fiber release before and during removal of the asbestos material. The material shall be sufficiently saturated to meet the NESHAP requirements referenced in these specifications and to prevent emission of airborne asbestos fibers in excess of the exposure limits prescribed in the OSHA 29 CFR 1926.1101 Standard referenced in the specifications.
- C. Excess water (except shower water) shall be either combined with removed material or other absorptive material and properly disposed of as per EPA regulations, or filtered, using a 5-micron final filter, and disposed in the sanitary sewage system. Contractors

shall not place water in storm drains, onto lawns, or into ditches, creeks, streams, rivers or other areas.

- D. Asbestos air monitoring shall be conducted around the perimeter of the site during removal of debris piles.

The Contractor shall assume full responsibility and liability for compliance with applicable regulations. The Contractor shall hold the Owner and the owner's representatives harmless for failure to comply with any regulation on the part of the contractor, or their subcontractors.

This plan is provided as guidance to comply with the South Carolina Department of Health and Environmental Control (SCDHEC), Regulation 61-86.1, Environmental Protection Agency (EPA) regulations 40 CFR 61, and Occupational Safety and Health Administration standards (OSHA) 29 CFR 1926.1101. This document does not state all of the requirements of these regulations and is to be used only as a supplement to these regulations.

All labor, materials, services, insurance, permits, certifications, notifications, fees, and equipment necessary for the safe containment, removal, transportation, and disposal of the ACM listed above will be the responsibility of the asbestos abatement contractor.

The work covered by this section includes the removal, handling and control of asbestos containing material (ACM) and describes some of the resultant procedures and equipment required to protect workers, the environment, and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of asbestos containing materials generated by the work. The asbestos work includes the removal of asbestos material located in the above mentioned area. These materials may release airborne asbestos fibers during removal and, therefore, must be handled in accordance with the removal and disposal procedures as specified herein and most stringent applicable laws, regulations, codes, and statutes.

1.2 ASSOCIATED WORK

Related or associated work is summarized briefly as follows:

- A. Daily perimeter air monitoring shall be provided by an independent third party hired by the Owner.
- B. The third party air monitoring company shall display results for air sampling data collected during the course of the abatement. This information shall not release the Contractor from any responsibility for OSHA compliance.
- C. Personnel air monitoring as required by OSHA, will be provided by the contractor at no expense to the client.
- D. The contractor shall apply for and have all required permits and licenses (and associated fees) to perform asbestos abatement work as required by State and Local regulations.

- E. The contractor shall maintain a copy of applicable federal, state and local regulations near the regulated area where workers will have daily access to the regulations.
- F. The contractor shall be responsible for providing water for project purposes.

1.3 QUALITY ASSURANCE

- A. Proof of Contractor licensing.
- B. A full-time licensed Supervisor will be provided by the contractor during all phases of the project. Said Supervisor(s) shall be licensed and trained in accordance with AHERA and ASHARA (EPA 40 CFR Part 763). Proof the Competent Person is trained and accredited and approved for working in this State. Verification of the experience of the Competent Person shall also be presented.
- C. A list of all workers who will participate in the project, including experience and verification of training and accreditation.
- D. Current medical written opinions for all personnel working on-site meeting the requirements of 29 CFR 1926.1101 (m).
- E. Current fit-tests for all personnel wearing respirators on-site meeting the requirements of 29 CFR 1926.1101 (h).
- F. All work shall be done in strict accordance with all applicable Federal, State, and Local Regulations, Standards, Statutes, Laws, and Codes where any two of the above conflict, the most stringent shall be enforced

1.4 CLOSE-OUT CONTRACTOR SUBMITTALS

The following submittals will be submitted to the Owner's Representative within five (5) days of project completion:

- A. A copy of daily log along with daily reports signed by the site supervisor.
- B. Waste disposal documents including transport manifests and landfill receipts.

1.5 OTHER DOCUMENTATION

- A. General – Except as otherwise indicated, submit special reports directly to the Owner's Representative within one day of occurrence.
- B. Unusual – When an event of unusual and significant nature occurs or inspection by an outside party, etc. prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner's Representative at earliest opportunity and report at earliest opportunity.

- C. Accidents – Prepare and submit reports of significant accidents at site and anywhere else work is in progress. Record and document data and action and comply with industry standards.
- D. Contingency Plan – The asbestos abatement contractor shall prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, supplied air system failure, or other events that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedure for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. The Contingency Plan should be included in the Asbestos Action Plan.
- E. Daily Logs – Contractor to maintain a daily log that documents the dates and time as well as the following if applicable; security, visitations, personnel names entering and leaving work area, and air monitoring results, and manometer readings.

SECTION 2 – MATERIALS & EQUIPMENT

2.1 MATERIALS

Prior to the start of the work, the abatement contractor shall provide and maintain sufficient quantity of materials and equipment to assure continuous and efficient work throughout the duration of the project.

- A. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.
- B. DANGER signs, as many as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other posters and notices required by Federal and State regulations shall be posted as appropriate.

2.2 EQUIPMENT

- A. An adequate number of infrared heating units, scrapers, nylon brushes, brooms, disposable mops, rags, sponges, staple guns, and shovels shall be provided. All electrically operated hand tools, equipment, and electric cords shall be equipped with ground-fault circuit protection.
- B. Adequate respirators, disposable protective clothing, hard hats, goggles, gloves, and footwear for the project/number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a hazard assessment conducted under 29 CFR 1910.132(d).
- C. Appropriate respiratory protection shall be used by all workers involved in asbestos abatement activities.

- D. Full body disposable protective clothing, including head, body, and foot coverings, consisting of material impregnable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.
- E. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination. Provide plastic/rubber disposable gloves for hand protection. Cloth type gloves may be worn under plastic/rubber gloves, but cannot be used alone. Duct tape shall be used to secure all suits sleeves to wrists and to secure foot coverings at the ankle.

SECTION 3 – WORK PRACTICES

All work shall be done in strict accordance with all applicable Federal, State, and Local Regulations, Standards, Statutes, Laws, and Codes where any two of the above conflict, the most stringent shall be enforced

3.1 REGULATED AREA PREPARATIONS

- A. Provide demarcation (barrier tape/signage) of the areas to be abated by exterior removal. Provide barrier demarcation and signage as specified in the document.
- B. Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure.
- C. The contractor shall provide temporary toilet facilities to be used by contractor's employees.
- D. Access to the regulated area shall be permitted only by the Competent Person.

3.2 ASBESTOS REMOVAL

- A. ACM shall be thoroughly wetted using an amended water solution before removal begins and kept wet as it is removed, loaded, transported, and disposed of.
- B. ACM should be kept intact as far as possible to reduce excessive friable conditions.
- C. Dry removal shall not be conducted without State or EPA regulatory approval.
- D. All removed ACM components shall be containerized immediately (while still wet). At no time shall materials be allowed to accumulate or become dry.
- E. All personnel in the regulated area shall not be allowed to eat, drink, smoke, chew tobacco or gum, apply cosmetics, or in any way interfere with the fit of their respirator.

3.3 CLEAN UP

- A. The Owner's representative will attest that the area is safe before the signs can be removed.

3.4 VISUAL INSPECTION

Final visual inspection will include the entire regulated area. If any debris, residue, dust or any other suspect material is detected, additional removal shall be performed at no cost to the Owner. Dust/material samples may be collected and analyzed at no cost to the Owner at the discretion of the Owner's AM to confirm visual findings.

3.5 DISPOSAL OF ACM WASTE

Dispose of waste ACM/ACE and debris, in accordance with these specifications, OSHA, EPA and DOT. The landfill requirements for packaging must also be met. Disposal shall be done at the approved landfill. Disposal of non-friable ACM/ACE shall be done in accordance with applicable regulations.

- A. Asbestos waste shall be packaged and moved into a covered transport container in accordance with NESHAP's packaging requirements. Waste shall be placed in double lined waste containers and fully covered prior to transport.
- B. Ensure that unauthorized persons do not have access to the waste material once it is outside the regulated area.
- C. Transport containers must be covered at all times when not in use. Transport and disposal of asbestos waste shall occur in a manner that will not permit the release of asbestos fibers into the air. Material shall not be transported in open vehicles.
- D. NESHAP's signs must be on containers during loading and unloading.
- E. Large components or structural members shall be removed intact and wrapped in two layers of 6 mil. Poly sheeting and secured with duct tape for disposal.
- F. All waste shipments shall be manifested by EPA requirements and the contractor shall obtain trip tickets at the landfill to document disposal of all the ACM.
- G. A recordkeeping form utilizing a chain-of-custody format shall include the names of the owner, the asbestos abatement contractor, disposal site, the estimated quantity of the ACM waste, and the type and number of containers used.
- H. The recordkeeping form shall be signed by the owner or his representative, the asbestos abatement contractor, and the disposal site operator as the material changes custody.
- I. Copies of trip tickets to account for all asbestos waste shall be submitted to the State and to the Owner's representative upon completion of the project.

SECTION 4 – AIR SAMPLING AND MONITORING

4.1 AIR SAMPLING

- A. Sampling of airborne concentrations of asbestos fibers shall be performed in accordance with 40 CFR 763, Subpart E (AHERA), EPA 560/5-85-024 and 29 CFR 1926.1101 (OSHA) and according to local State regulations.
- B. Air monitoring shall be conducted by the Owner’s representative or a designated third party.
- C. Unless otherwise specified, PCM sampling by NIOSH Method 7400 will be used for analysis of daily air monitoring.
- D. Air monitoring expenses incurred due to the contractor’s inability to complete the work within the specified time or due to re-cleaning will be paid by the contractor.

4.2 AIR MONITORING RECORDS

Air monitoring records will include:

- 1. Pump identification;
- 2. Rotameter used for calibration;
- 3. Sample number;
- 4. Air monitors name and certificate number;
- 5. Detailed description of nature and location of abatement work;
- 6. Pump start and stop times;
- 7. Sample volumes;
- 8. Description of engineering controls being employed;
- 9. Description of PPE and equipment employed;
- 10. Chain of Custody documents (if applicable).

Records will be maintained and made available to the Owner upon request.

4.3 AIR MONITORING FREQUENCY

- A. Sampling during asbestos work – The owner’s representative will provide area (daily) air monitoring during abatement activities. Unless stated otherwise, PCM method NIOSH 7400 is to be used.

SECTION 5 – RESPIRATORY PROTECTION

5.1 RESPIRATORY PROTECTION PROGRAM

The Abatement Contractor shall develop and implement a Respiratory Protection Program (RPP) which is in compliance with the January 8, 1998 OSHA requirements found at 29 CFR 1926.1101 and 29 CFR 1910.132;134. ANSI Standard Z88.2-1992 provides excellent guidance for developing a respiratory protection program. All respirators used must be NIOSH approved

for asbestos abatement activities. The written respiratory protection shall, at minimum, contain the basic requirements found at 29 CFR 1910.134 (c)(1)(i-ix) – Respiratory Protection Program.

5.2 SELECTION AND USE OF RESPIRATORS

- A. The procedure for the selection and use of respirators must be submitted to the Owner as part of the Abatement Contractor's qualification. The procedure must be written clearly enough for workers to understand.
- B. Minimum respiratory protection shall be a half face air purifying respirator when fiber levels are maintained consistently at or below 0.1 f/cc. A higher level of respiratory protection may be provided or required depending on fiber levels. Respirator selection shall meet the requirements of 29 CFR 1926.1101 (h); Table 1, except as indicated in this paragraph. Abatement personnel must have a respirator for their exclusive use.
- C. No employee shall be allowed to wear a respirator unless a physician has determined they are capable of doing so and has issued a written opinion for that person.
- D. All personnel wearing respirators shall have a current qualitative/quantitative fit test which was conducted in accordance with 29 CFR 1910.134 (f) and Appendix A

SECTION 6 – CONTINGENCY PLANS

6.1 SPILLS

- A. Accidental spills of asbestos will be cleaned up immediately by qualified and properly protected personnel.
- B. Spills on soils will include the removal of all suspect contaminated soils.
- C. All debris generated from spills shall be treated as asbestos waste and disposed of accordingly.
- D. Where friable asbestos has been spilled, the on-site air monitor and the Owner's Representative will be notified immediately.

6.2 MEDICAL EMERGENCIES

- A. For non-life-threatening situations – employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the regulated area to obtain proper medical treatment.
- B. For life-threatening injury or illness worker decontamination shall take least priority. After measures to stabilize the injured worker remove them from the regulated area and secure proper medical treatment.
- C. The contractor will be responsible for observing workers for signs and symptoms of heat stress. Heat stress may lead to potentially fatal heat stroke if not treated promptly.

6.3 SITE SECURITY

- A. Regulated area access is to be restricted only to authorized, trained/accredited and protected personnel. These may include the Abatement Contractor's employees, employees of Subcontractors, Owner employees and representatives, State and Local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to commencing the project and be posted in the clean room of the decontamination unit.
- B. Entry into the regulated area by unauthorized individuals shall be reported immediately to the Competent Person by anyone observing the entry.
- C. Access to the regulated area shall be through barrier tape demarcating the exterior abatement area.
- D. The Abatement Contractor's Competent Person shall control site security during abatement operations in order to isolate work in progress and protect adjacent personnel.

SECTION 7 ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE

7.1 COMPLETION OF ABATEMENT WORK

After thorough decontamination, complete asbestos abatement work upon meeting the regulated area clearance criteria and fulfilling the following:

- A. Remove all equipment, materials and debris from project area.
- B. Package and dispose of all asbestos waste as required.
- C. Provide documentation to Owner as stipulated within this design.



Photo 1 – Typical view of 213 Windigo Road in Spartanburg, South Carolina 29306



Photo 2 – Typical view of the burned remains of the house collapsed into a debris pile



Photo 3 – Typical view of the burned remains of the house collapsed into a debris pile



Photo 4 – Typical view of the burned remains of the house collapsed into a debris pile



Photo 5 – Typical view of the burned remains of the house collapsed into a debris pile