Emerald, Inc.

CONSULTING AND ENGINEERING
SERVICES IN ENVIRONMENTAL AFFAIRS

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ASBESTOS PROJECT DESIGN
REGARDING
VACANT BUILDING
419 HAMPTON STREET
WALTERBORO, SOUTH CAROLINA

Prepared for:

Linda T. Strickland, Owner, and
City of Walterboro
242 Hampton Street
Walterboro, S.C. 29488

Prepared by:

Emerald, Inc.
P.O. Box 3050
Sumter, South Carolina 29151

Date of Design: October 08, 2019

FOREWORD

This Project Design was prepared by Emerald, Inc. of Sumter, South Carolina for Ms. Linda T. Strickland, building owner, and the City of Walterboro regarding the vacant building located at 419 Hampton Street in Walterboro, S.C. The contents of this report are confidential and intended for the use of the client only.

J. Dalton Reames, S.C. Licensed Project Designer, prepared this report. Any questions or comments concerning this report should be directed to J. Dalton Reames at either (803) 469-5454 or via email at dreames@emeraldinc-us.com.

J. Dalton Reames

SC Licensed Project Designer
License Number PD-00200
Expiration Date: 9/11/20

SC Licensed AHERA Supervisor
License Number SA-01252
Expiration Date: 12/06/19

SC Licensed Air Sampler
License Number AS-00287
Expiration Date: 12/06/19

SC Licensed Building Inspector
License Number BI-00945
Expiration Date: 12/07/19

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1.0 INTRODUCTION AND OBJECTIVE

Emerald, Inc. was requested to prepare an Asbestos Project Design on the vacant building located at 419 Hampton Street in Walterboro, SC, in order to outline work practices prior to the Abatement of Asbestos Containing Materials (ACMs) of the structure. The design was authorized by Ms. Gail Jeter with Cardno, Inc. The design includes general descriptions of *Abatement Contractor* requirements, abatement practices, personnel protection, safety considerations, air sampling protocols and regulatory requirements.

This design is an outline of the basic limitations of performance and criteria for measuring abatement completion.

2.0 SCOPE OF WORK

Based on the August 13, 2019, Asbestos Survey prepared by Emerald, Inc., asbestos abatement and disposal activity will involve the removal of friable, Regulated Asbestos Containing Materials (RACMs) including approximately 4705 square feet of sheetrock with joint compound systems and approximately 1030 square feet of sheetrock with furring strip systems. Separate from the abatement of RACMs, asbestos-containing parquet sheet flooring, tan floor tile, 12 x 12 brick-patterned flooring squares, sheet metal seam caulk, silver roof sealant material and roof parapet flashing may be removed by non-friable abatement methods. **Air monitoring will be required during the abatement of the RACMs**.

3.0 SUMMARY OF WORK

- The *Contractor* shall assume full responsibility and liability for the compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal, protection of workers, visitors to the site and

persons occupying areas adjacent to the site.

- The *Contractor* must insure that all workers involved in the removal of Asbestos Containing Materials (ACMs) are licensed by the South Carolina Department of Health and Environmental Control (SCDHEC) and have current training certificates, current fit test certification and medical surveillance documentation. A licensed asbestos abatement Supervisor must be on-site during all work activities and will be responsible for producing worker documentation and certifications upon request.
- The *Contractor* is responsible for the coordination with the ***Facility Owner (Linda T. Strickland)*** concerning matters of all necessary utility services (electrical, water, etc.) and availability of facilities.
- The *Contractor* must furnish all labor, supplies, insurance, tools and equipment, as well as all notifications and permits required by the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), SCDHEC and local Agencies.
- The *Contractor* shall keep the site free of waste accumulations generated by workers and must take all appropriate measures to ensure the continuous protection of the public from exposure to airborne asbestos fibers.

4.0 CONTRACTOR REQUIREMENTS

4.1 Submittals/Notifications/Licenses

- The *Contractor* shall, prior to start up, submit project documentation including SC DHEC Asbestos Abatement Contractor's License, insurance certificates and personnel accreditations to the *Building Owner's Representative*.
- Within thirty (30) days upon completion of the project, the *Contractor* shall

submit waste shipment records to the *Building Owner's Representative*.

- The *Contractor* will be responsible for filing proper SC DHEC notifications.
- The *Contractor* is responsible for obtaining any applicable city and/or county business licenses.

4.2 Insurance Responsibilities

- The *Contractor's* insurance coverage shall include **Worker's Compensation with Asbestos Coverage stated,** General Liability and Automobile Liability with, at minimum, One Million dollars ($1,000,000) for each category**.**
- The *Contractor* shall maintain appropriate insurance that will protect from claims which may arise, such as:
    - Workers' Compensation and disability benefits claims;
    - Occupational illness, workers' bodily injury or employee death claims;
    - Illness, bodily injury or death of persons not employed by the *Contractor;* and
    - Damage claims due to bodily injury or death of any individual or damage to property due to the use of equipment owned by the *Contractor*.

4.3 Project Site Documentation Requirements

- The *Contractor* shall ensure that all personnel performing asbestos work have a legible copy of a valid current initial or refresher training certificate issued by an appropriate training provider.
- The *Contractor* shall ensure that all personnel performing asbestos work have a clear, legible copy of a valid SC DHEC-issued license.

- For the duration of the abatement project, the *Contractor* shall ensure that:
    - Each worker and supervisor employed at the abatement project site meets the applicable training and licensing requirements;
    - At least one licensed supervisor remains inside of each contained work area supervising the work;
    - At all times, a means is available during abatement activities for SC DHEC inspectors or other authorized visitors to communicate with persons within the immediate contained work area.;
    - A daily log containing the name and signature of every individual entering the negative pressure enclosure/regulated area is maintained;
    - The contained work area is secured at all times to prevent access of unauthorized visitors or unprotected persons;
    - Legible copies of SC DHEC letters of approval for alternative work practices are available for inspection; and
    - Abatement work shall not proceed unless the Air Sampler fulfills all specified air monitoring requirements.

5.0 Safety Considerations

- All electrical equipment shall utilize ground fault circuit interrupters (GFCI).
- No flames or flammable materials are to be brought into the building.
- As determined by the *Contractor*, an adequate number of maintained and operational fire extinguishers shall be on-site.
- If hazardous materials, such as chemicals, are discovered during abatement activities, the *Contractor* shall cease work and assess the situation.

6.0 Regulated Area Abatement

6.1 Work Area Preparation

- Delineate the regulated area with barrier tape and post "Asbestos Danger" signs at the entrances to the regulated area. Signs must be at a minimum 20 by 14 inches, with the legend:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

- Only authorized personnel are allowed in the regulated work area. Authorized personnel include workers performing asbestos removal, the competent person (Supervisor) and others that the competent person has given permission to enter.
- Personal protective equipment (PPE), such as respirators and disposable coveralls, must be donned prior to entering the regulated area.
- No one shall eat, drink, smoke, chew tobacco, chew gum or apply cosmetics inside the regulated area.
- Seal each opening between the work area and uncontaminated areas including windows, doorways, elevator openings, corridor entrances, drains, ducts, electrical outlets, grills, grates, diffusers and skylights with a critical barrier consisting of at least two independent sheets of 6-mil or thicker polyethylene sheeting secured in place. These critical barriers must be maintained leak-tight for the duration of asbestos abatement.

- Thoroughly clean and remove all movable objects from the work area.
- Thoroughly clean, then cover and secure each non-movable object in the work area with at least one sheet of 4-mil or thicker polyethylene sheeting.
- Use polyethylene sheeting to isolate contaminated from uncontaminated areas, and ensure the sheeting is attached securely in place and properly maintained at all times. Prevent contamination of carpet with ACM, or dispose of the carpet as asbestos-contaminated waste.
- Cover floors not being abated with at least two layers of 6-mil or thicker polyethylene sheeting. Floor sheeting shall be installed first and shall extend at least 12 inches up the walls and be taped into place. No seams shall be located at wall/floor joints. Spray-applied polyethylene coating shall not be used.
- Cover walls not being abated with at least one sheet of 4-mil or thicker polyethylene sheeting. Wall sheeting shall be installed to minimize joints and shall extend at least six inches beyond wall and floor joint and be taped into place.
- Construct a decontamination enclosure system adjoining the contained work area. The decontamination enclosure shall be built in a manner that will prevent track-out of RACM, and shall consist of: a clean room equipped with appropriate storage containers and adequate space for changing clothing; an air lock; a shower room containing hot and cold or warm running water controllable at the tap; an air lock; and an equipment room suitable for storage of tools and equipment.
- Construct a clear viewing port measuring at least 24 inches by 24 inches in

an external wall of the contained work area to allow unobstructed observation of abatement activities in the work area.

- Operate negative pressure differential equipment with HEPA filtration continuously from the time that barrier construction is completed through the time that acceptable final clearance air monitoring results are obtained.
- Utilize a manometer to verify a minimum of 0.02 column inches of water-pressure differential and operate it to ensure that the appropriate number of negative air machines are used to exchange the air inside the containment 4 times per hour.

6.2 Personal Protective Equipment (PPE)

- Minimum respiratory equipment will be half-face air-purifying respirators that are NIOSH approved and equipped with HEPA cartridges.
- Protective clothing shall meet or exceed protective clothing requirements of Title 29 CFR 1926.1101 and include full body disposable coveralls, disposable hood (separate or integral to coverall) and foot coverings (reusable footwear or foot coverings integral to coverall).
- When not using a full-face respirator, eye protection must be furnished for personnel involved in asbestos removal activities.

6.3 Removal Practices

- Prior to removal, all RACM shall be thoroughly wet through to the substrate using amended water and shall remain wet until disposed of in accordance with 40 CFR 61.150, as amended, and any subsequent amendments and editions.
- At no time shall RACM be allowed to accumulate or become dry.

- Structural components shall be thoroughly wet prior to wrapping in polyethylene sheeting for disposal.
- When polyethylene bags of at least 6-mil thickness are used for waste, bags shall be leak-tight. Excess air shall be removed from bags prior to sealing using a vacuum equipped with a HEPA filtration system in accordance with OSHA regulation 29 CFR 1926.11, as amended, and any subsequent amendments and editions.
- ACM from within the work area is not permitted outside of the work area except in sealed leak-tight containers.
- If equipment cannot be decontaminated, it shall be sealed in leak-tight containers. No visible residue shall appear on the outside of the container.

6.4 Cleanup

- Following abatement, a visual inspection of the abated substrate shall be performed.
- A coating of a compatible encapsulating agent shall be applied to porous surfaces that have been stripped and cleaned of ACM. The encapsulant must be allowed to thoroughly dry prior to additional cleaning or final air clearance.
- If there is any evidence of contamination, the asbestos *Contractor* shall perform additional wet cleaning and HEPA vacuuming.
- All polyethylene sheeting, except for critical barriers and the decontamination enclosure system, shall be removed and disposed of as asbestos-contaminated waste.
- With only the critical barriers and decontamination enclosure system left in place, the entire work area, including any duct work, shall be wet-cleaned and

HEPA vacuumed until no visible residue remains.

- Areas exceeding clearance standards are re-cleaned by the *Contractor* using wet methods and HEPA vacuuming. Re-cleaning, drying, and retesting shall be repeated until the satisfactory clearance standard is achieved.
- Following satisfactory clearance of the work area, remaining polyethylene critical barriers and decontamination enclosure systems shall be removed and disposed of as asbestos-contaminated waste.

6.5 Disposal

- All asbestos waste bags and/or containers shall be properly labeled prior to being placed into the waste transport vehicle.
- Asbestos waste shall be disposed of at a landfill approved or permitted to accept asbestos waste.
- Stored asbestos waste shall be maintained in a secured, locked location.
- Asbestos waste shall be transported and disposed of in a manner that will not permit the release of asbestos fibers into the air.

6.6 Air Monitoring

- Area air sampling shall be performed by a licensed air sampler.
- Abatement air sampling data collected by a licensed air sampler under contract with or employed by the asbestos contractor performing the abatement will not be acceptable to the Department.
- Air sampling shall be conducted using collection media, procedures, and analytical methods in accordance with NIOSH Method 7400 when Phase Contrast Microscopy (PCM) is used, and with Electron Microscope Measurement of Airborne Asbestos Concentrations [EPA Report 600/2-77-

178 (1978) and EPA Contract No. 68-02-3266 (1984)] when Transmission Electron Microscopy (TEM) is used.

- Any alternative procedure for clearance sampling shall require prior written approval from the Department. The written request must provide a detailed description of the alternative procedure and an explanation of how it will provide an equivalent level of protection to facility occupants.
- The *Air Sampler* shall:
    - Ensure that all air sampling pumps are accurately calibrated prior to operation by utilizing a rotameter that has been calibrated within the past six months using a primary standard, such as a bubble burette or a dry calibrator. Calibration data shall be maintained at the project site for the duration of abatement.
    - Ensure that all air sampling pumps are operating properly and that the filtered sampling cassettes are securely attached to the pumps for the duration of sampling.
    - Maintain current background, daily, and clearance air monitoring data at the project site, and make the data available for review by Department personnel and other authorized visitors upon request.
    - Ensure that there are always at least four sampling pumps operating properly for the duration of any asbestos project requiring daily area air monitoring.
    - Collect area air samples for a minimum of two and one half hours for each four-hour work period during preparation, removal, and clean-up activities at NESHAP projects.

- Maintain a log for the duration of an asbestos project describing daily activities.
- Follow the procedures specified in NIOSH 7400 or an equivalent method acceptable to the Department when conducting clearance air monitoring.
- Submit a written copy of the sampling procedures and clearance air monitoring results to the facility owner within five working days following the completion of the project and to the Department upon request.

- The *Air Sampler* shall collect a minimum of five air samples at this NESHAP abatement project prior to the start of abatement activities in order to obtain an index of background airborne fiber concentrations.
- Samples shall be taken both inside and outside the work area to establish existing ambient air levels under normal activity conditions.
- The *Air Sampler* shall document any variations and justifications for the variations and shall maintain a written copy of the sampling variation(s) at the project site for the duration of the abatement and shall provide the information to the Department upon request.
- Background sampling may be analyzed using PCM methods.
- Once abatement activities begin at a NESHAP abatement project, the *Air Sampler* shall conduct representative daily area sampling in the following areas:
  - In the equipment room of the decontamination enclosure systems;

- At the entrance to the clean room of each decontamination enclosure system;
- Outside the work area in uncontaminated areas of the facility;
- Where the negative pressure differential equipment exhausts, at a distance no greater than five to eight feet from the air flow when feasible. When multiple machines are in operation, the air sampler may rotate the sampling; however, all exhausts must be monitored daily; and
- The total volume of air collected for daily area air sampling shall be in accordance with 40 CFR Part 763 and/or NIOSH 7400 and any subsequent revisions for analytical methodology.

- The *Air Sampler* shall document any variations and justifications for the variations and shall maintain a written copy of the sampling variation at the project site for the duration of the abatement and provide the information to the Department upon request.
- Daily air sampling may be analyzed using PCM methods.
- The clearance standard for this abatement project shall be by Transmission Electron Microscopy (TEM) less than or equal to 70 s/mm^2 using the Mandatory TEM Method described in 40 CFR 763, Appendix A of Subpart E, as amended, and any subsequent amendments and editions.
- The total volume of air collected for clearance air sampling shall be in accordance with 40 CFR Part 763 and/or NIOSH 7400 and any subsequent revisions for analytical methodology.

- Whereas this project exceeds the project design threshold (3,000 sf, 1,500 Lf and 656 cubic feet of RACM), TEM clearance air monitoring will be required.
- Sampling shall not begin until wet cleaning has been completed and no visible pools of water or condensation remain. Sufficient time shall be allowed for all surfaces to dry. The sampling zone shall be representative of the building occupants' breathing zone.
- Sampling shall not begin until the *Air Sampler* has performed a visual inspection and authorizes final clearance air monitoring.
- Sampling shall be conducted only after all interior wall, ceiling, and floor polyethylene sheeting has been removed. Critical barriers and the five-stage decontamination enclosure system shall remain in place until the abated area has passed final clearance.
- At least one licensed asbestos project supervisor shall remain at an asbestos project site for the duration of the final clearance visual inspection and clearance air sample collection process.

7.0 DEFINITIONS

- *"Abatement"* - Procedures to control fiber release from regulated asbestos-containing materials. This includes removal, enclosure, encapsulation, repair, and any associated preparation, clean up and disposal activities having the potential to disturb regulated asbestos-containing material.
- *"Adequately wet"* - To sufficiently mix or penetrate with liquid to prevent the potential release of particulates. The absence of visible emissions is not sufficient evidence of being adequately wet.
- *"Aggressive clearance sampling"* - A method of sampling which uses electric fan(s), electric leaf blower(s), and other devices to simulate vigorous activity in the abated area while air samples are being collected.
- *"AHERA"* - Regulations developed pursuant to the Asbestos Hazard Emergency Response Act, 40 CFR Part 763, Asbestos Containing Materials in Schools (December 20, 1987).
- *"Airlock"* - A chamber which permits entrance and exit with minimum air movement between a contaminated area and an uncontaminated area, consisting of two doorways protected by two overlapping polyethylene sheets and separated by a sufficient distance such that one passes through one doorway into the chamber, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway. The airlock maintains a pressure differential between the contaminated and uncontaminated areas, thereby minimizing flow-through contamination further.

- *"Air sampler"* - A person licensed by SC DHEC to implement air-monitoring plans and analysis schemes during abatement.
- *"Air sampling"* - A method such as NIOSH 7400 for PCM, the OSHA Reference Method, 40 CFR 763 Appendix A for TEM, or an equivalent method accepted by SC DHEC used to determine the fiber content of a known volume of air during a specified period of time.
- *"Amended water"* - Water to which a surfactant (for example, a non-sudsing detergent) has been added.
- *"Area air sampling"* - Any form of air sampling whereby the sampling device is placed at a stationary location either inside or outside the regulated work area.
- *"Asbestos"* - The asbestiform varieties of Serpentine (chrysotile), Riebeckite (crocidolite), Cummingtonite-Grunerite (amosite), Anthophyllite, and Actinolite-Tremolite.
- *"Asbestos Containing Material (ACM)"* - Material containing asbestos of any type, either alone or mixed with other materials, in an amount greater than one percent (1%) as determined by using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, as amended, or an accepted equivalent. (NOTE: "Appendix A to Subpart F" has been redesignated as, and shall hereinafter be referred to as, "Appendix E to Subpart E" – 60 FR 31917, June 19, 1995.)
- *"Asbestos containing waste materials"* - As applied to demolition and renovation operations, this term includes regulated asbestos-containing waste

materials and materials contaminated with asbestos, including disposable equipment and clothing.

- *"Asbestos project"* - Any activity associated with abatement including inspection, design, air monitoring, in-place management, encapsulation, enclosure, renovation, repair, removal, any disturbance of regulated asbestos containing materials (RACM), and demolition of a facility.
- *"Asbestos project design"* - A written or graphic plan prepared by an accredited project designer specifying how an asbestos abatement project will be performed that includes, but is not limited to, scope of work and technical specifications.
- *"ASHARA"* - Regulations developed pursuant to 40 CFR Part 763, Subpart E, Appendix C Model Accreditation Plan, Asbestos School Hazard Abatement Reauthorization Act (November 28, 1992).
- *"Background monitoring"* - Area sampling performed prior to abatement to obtain an index of existing airborne fiber levels under typical activity.
- *"Category I nonfriable asbestos containing material (ACM)"* - Nonfriable asbestos or nonfriable asbestos-containing packing, gaskets, and resilient floor covering; and asphalt roofing products containing greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.
- *"Category II nonfriable ACM"* - Any material that cannot, when dry, be crumbled, pulverized, or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations, excluding Category I nonfriable ACM and containing greater than one percent (1%)

asbestos as determined using the methods specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.

- *"Clean room"* - An uncontaminated area or room that is part of the decontamination enclosure system and that has provisions for storage of street clothing and protective equipment.
- *"Clearance monitoring"* - Area air sampling performed using SC DHEC accepted aggressive clearance sampling techniques to determine the airborne concentrations of residual fibers upon conclusion of asbestos abatement.
- *"Contractor"* – Any individual, partnership, corporation or other business concern that performs asbestos abatement but is not a permanent employee of the facility owner.
- *"Control measure"* - Use of amended water, negative pressure differential equipment, encapsulant, high efficiency particulate air filtration device, glove bag or other state-of-the art equipment designed to prevent fiber release into the air.
- *"Critical barrier"* - At minimum, two independent layers of 6-mil plastic sheeting applied to any opening into a work area in a manner that creates a leak-tight seal within the work area to isolate vents, windows, doors, switches, outlets, and any other cavity or opening to the contaminated work area.
- *"Cut"* - To penetrate with a sharp-edged instrument. This includes sawing, but may not include shearing, slicing, or punching.
- *"Decontamination enclosure system"* - An enclosed area adjacent and connected to the regulated work area consisting of an equipment room,

shower area, and clean room, each separated by airlocks, that is used for the decontamination of employees, materials, and equipment that are contaminated with asbestos.

- *"Demolition"* - Wrecking or taking out any load-supporting structural member of a facility together with any related handling operations, the burning of any facility, or moving of a structure.
- *"SC DHEC"* - The South Carolina Department of Health and Environmental Control.
- *"Encapsulation"* - A form of abatement involving the treatment of regulated asbestos-containing material (RACM) with a liquid that covers the surface with a protective coating (bridging) or embeds fibers in an adhesive matrix (penetrating) to prevent the release of asbestos fibers. material (RACM) with a liquid that covers the surface with a protective coating (bridging) or embeds fibers in an adhesive matrix (penetrating) to prevent the release of asbestos fibers.
- *"Enclosure"* - A form of abatement involving placement of a leak-tight, impermeable, permanent barrier to prevent access to regulated asbestos-containing material and to prevent the release of asbestos fibers.
- *"EPA"* - United States Environmental Protection Agency.
- *"Equipment room"* - A contaminated area or room that is part of the decontamination enclosure system and that has provisions for the storage of contaminated clothing and equipment.
- *"F/cc"* - Fibers per cubic centimeter.

- *"Friable"* - Refers to ACM, which may, when dry, be crumbled, pulverized, or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations. This also refers to previously non-friable ACM after such material becomes damaged to the extent that when dry, can be or has been crumbled, pulverized, or reduced to powder.
- *"Friable asbestos containing material"* - Any material that, when dry, can be or has been crumbled, pulverized, or reduced to powder and contains greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, as amended, or an accepted equivalent.
- *"Goose neck"* - Process for sealing the outer bag by twisting the opening of the bag, folding twisted portion of bag over, and creating a loop. Adequately secure the opening of the bag to the base of the twist, using duct tape.
- *"Glovebag"* - A sealed compartment with attached inner gloves used for the handling of asbestos containing materials. Information on glovebag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rules on occupational exposure to asbestos, 29 CFR 1926.1101 (August 10, 1994), as amended, and any subsequent amendments or editions.
- *"HEPA filter"* - A high efficiency particulate air filter that will capture particles with an aerodynamic diameter of 0.3 micrometers with a minimum efficiency of 99.97 percent.
- *"Homogeneous area"* - Area of surfacing material, thermal system insulation material, or a miscellaneous material that is uniform in color or texture.

- *"HVAC"* - Heating, ventilation, and air conditioning.
- *"In poor condition"* - Refers to any ACM where the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.
- *"Installation"* - Any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of a single owner or operator (or of owners or operators under common control).
- *"Leak-tight"* - Dust, solids, or liquids cannot escape or spill out.
- *"License"* - A document issued by SC DHEC that allows an asbestos abatement contractor, building inspector, project designer, management planner, air sampler, supervisor, worker, or other to engage in asbestos projects.
- *"Manometer"* - Instrument for the measurement of gas pressure whose units are represented in inches of water column.
- *"Minor project"* - A project where 25 or fewer square or linear feet of regulated asbestos-containing material (RACM) are removed, or where 10 or fewer cubic feet of RACM off a facility component are cleaned up.
- *"Movable object"* - A structure within the work area that can be moved (e.g., chair, desk, etc.).
- *"Negative pressure differential equipment"* - A portable exhaust system equipped with a HEPA filter.

- *"NESHAP"* - National Emission Standards for Hazardous Air Pollutants, 40 CFR 61, Subpart M, February 3, 1994, as amended, and any subsequent amendments or editions.
- *"NESHAP project"* - An asbestos project which involves at least 160 square feet or 260 linear feet of regulated asbestos containing material (RACM), or 35 or more cubic feet of RACM off a facility component such that the area or length could not be measured prior to abatement. If several contemporaneous projects in the same area within the same building being performed by the same contractor are smaller than 160 square or 260 linear feet individually but add up to that amount, then the combination of the smaller projects shall be considered one NESHAP project.
- *"NIOSH"* - National Institute for Occupational Safety and Health.
- *"OSHA"* - Occupational Safety and Health Administration.
- ***"Owner/operator" (Linda T. Strickland c/o City of Walterboro)*** - Any person or contractor who owns, leases, operates, controls, or supervises a facility being demolished or renovated, or any person who operates, controls, or supervises the demolition or renovation operation, or both.
- *"Owner's representative"* - A licensed supervisor, management planner, project designer, or air sampler designated by the facility owner to manage the asbestos project, and who serves to ensure that abatement work is completed according to specification and in compliance with all relevant statutes and regulations.

- *"Personal air sampling"* - A method used to obtain an index of an employee's exposure to airborne fibers. Samples are collected outside the respirator in the worker's breathing zone.
- *"Project designer"* - A person licensed by SC DHEC who is directly responsible for planning all phases of an asbestos abatement project design from project site preparation through complete disassembly of all abatement area barriers.
- *"Regulated area"* - An area established by the owner/operator of an asbestos project to demarcate areas where asbestos abatement activities are conducted; any adjoining area where debris and waste from such asbestos work is stored; and any work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.
- *"Regulated asbestos-containing material (RACM)"* - (a) Friable asbestos-containing 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, drilling, or abrading; or (d) Category II nonfriable ACM that is likely to become 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.
- *"Removal"* - Taking out RACM or facility components that contain or are covered with RACM from any facility.
- *"Renovation"* - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component.

Operations in which load-supporting structural members are wrecked or taken out are demolitions.

- *"Repair"* - Returning damaged asbestos-containing material to an undamaged condition or to an intact state so as to prevent fiber release.
- *"Shower room"* - A room located between the clean room and the equipment room in the decontamination enclosure system containing a shower with hot and cold or warm running water controllable at the tap.
- *"Start date"* - The date printed on SC DHEC-issued asbestos abatement project license, which indicates when asbestos renovation or demolition operations, including any abatement activity having the potential to disturb RACM, will begin.
- *"Strip"* - To remove RACM from any part of a facility or facility component.
- *"Structures per square millimeter"* - Reporting measure for Transmission Electron Microscopy (TEM) Analysis. TEM clearance requires fewer than 70 structures per square millimeter (70s/mm_2).
- *"Supervisor"* - A person licensed by SC DHEC and designated as the contractor's representative to provide direct on-site supervision and guidance to workers engaged in abatement of RACM.
- *"Surfactant"* - A chemical wetting agent added to water to improve penetration, such as a non-sudsing detergent.
- *"Variance"* - Written SC DHEC approval for the use of alternative work practices at an asbestos project.

- *"Visible emissions"* - Any emissions that are visually detectable without the aid of instruments that originate from RACM or asbestos-containing waste material or a regulated work area.
- *"Waste shipment record"* - The shipping document, required to be originated, prepared, and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
- *"Wet cleaning"* - The process of removing asbestos contamination from facility surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with amended water.
- *"Work area"* - Designated rooms, spaces, or areas in which asbestos abatement activities are to be undertaken, or that may be contaminated as a result of such abatement activities.
- *"Worker"* - A person licensed by SC DHEC to perform asbestos abatement under the direct guidance of an accredited and licensed supervisor.
- *"Working day"* – Monday through Friday, including holidays that fall on any of the days Monday through Friday.

8.0 APPENDICES

APPENDIX A. Project Designer License

APPENDIX B. Asbestos Survey

SCDHEC ISSUED

Asbestos ID Card

J Dalton Reames

		Expiration Date:
CONSULTPD	PD-00200	09/11/20
AIRSAMPLER	AS-00287	12/06/19
CONSULTBI	BI-00945	12/07/19
SUPERAHERA	SA-01252	12/06/19

Emerald, Inc.

CONSULTING AND ENGINEERING
SERVICES IN ENVIRONMENTAL AFFAIRS

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ASBESTOS SURVEY
REGARDING
VACANT BUILDING
419 HAMPTON STREET
WALTERBORO, SOUTH CAROLINA

Prepared for:

Cardno, Inc.
1812 Lincoln Street Suite 301
Columbia, S.C. 29502

Prepared by:

Emerald, Inc.
P.O. Box 3050
Sumter, South Carolina 29151

Date of Inspection: August 13, 2019
Date of Report: August 20, 2019

FOREWORD

This report was prepared by Emerald, Inc. of Sumter, South Carolina for Cardno, Inc. regarding the vacant building located at 419 Hampton Street in Walterboro, S.C. The contents of this report are confidential and intended for the use of the client only.

J. Dalton Reames, S.C. Licensed Building Inspector, conducted the survey, and Ronny L. Lowder, S.C. Licensed Building Inspector and Management Planner prepared this report. Any questions or comments concerning this report should be directed to Ronny L. Lowder at either (803) 469-5454 or via email at rlowder@emeraldinc-us.com.

J. Dalton Reames

SC Licensed Building Inspector
License Number BI-00945
Expiration Date: 12/07/19

SC Licensed AHERA Supervisor
License Number SA-01252
Expiration Date: 12/06/19

SC Licensed Air Sampler
License Number AS-00287
Expiration Date: 12/06/19

SC Licensed Project Designer
License Number PD-00200
Expiration Date: 10/25/19

Ronny L. Lowder, CHMM

SC Licensed Building Inspector
License Number BI-01497
Expiration Date: 01/09/20

SC Licensed AHERA Supervisor
License Number SA-00715
Expiration Date: 01/08/20

SC Licensed Mgmt Planner
License Number ASB-32201
Expiration Date: 01/09/20

TABLE OF CONTENTS

1.0 INTRODUCTION AND OBJECTIVE

Emerald, Inc. was requested to conduct an Asbestos Survey on the vacant building located at 419 Hampton Street in Walterboro, SC, in order to identify the presence of any asbestos containing materials prior to possible sale of the building. The inspection was authorized by Ms. Gail Jeter with Cardno, Inc. The inspection included identification and assessment of the condition of suspect asbestos containing material, either friable or non-friable, on the interior and exterior of the building.

This report is a compilation of the inspection and its results.

2.0 SURVEY METHODOLOGY

On August 13, 2019, Emerald, Inc. conducted an inspection of the vacant building located at the address stated. J. Dalton Reames, South Carolina Licensed Building Inspector, conducted the inspection.

The single-story building, formerly a retail drycleaner establishment, contains approximately 6080 square feet of total space with an original construction date circa 1940. Subsequent additions to the original construction occurred over time; however, the building materials are consistent. The basic construction has concrete masonry unit (CMU) exterior walls built on a concrete slab. No vermiculite was observed in the CMU walls. The concrete floors have coverings of resilient sheeting and floor tiles with mastic. The interior walls include bare CMU, sheetrock with joint compound systems and cementitious wall board over sheetrock systems. The ceilings include sheetrock with joint compound systems, sheetrock with furring strips and the wood-slat roof substrate. Wall-mounted fans and ceiling-mounted heating units were observed. Pipe runs in Area 2 and the Storage Shed area have fiberglass insulation with foil wrap. No HVAC system was present. Two roofing systems cover the building and are as follows:

1) Area 1 and Area 2 Roofing

Slightly pitched wood beams are covered by sheet metal panels. CMU parapets and walls have flashing sealant materials.

2) Area 3 Roofing

A wooden, A-framed structure is covered by roofing shingles and felt. A CMU parapet at the south side of the structure has flashing sealant materials. This structure is dilapidated and not safe to walk on.

Future activities after the sale of the vacant building may include demolition, landscaping and new construction.

The survey included a visual inspection to identify the presence of material suspected of containing asbestos. This identification was based on the experience and training of the inspector. Seventy-nine (79) samples were collected during the survey for laboratory analysis based upon the required EPA and SCDHEC sampling matrix. Samples were placed in individual containers, labeled and numbered according to the sampling scheme (419-01 thru 419-79). Per SCDHEC Asbestos Regulations, the independent laboratory is required to sample all layers of each sample. As a result, eighty (80) samples were analyzed by the lab, utilizing Positive Stop, via Polarized Light Microscopy (PLM), and ten (10) samples were analyzed via Transmission Electron Microscopy (TEM). Appendix B contains the Asbestos Survey Log kept during the inspection which identifies the samples collected by sample number, sample type, location and condition assessment, along with any comments. The samples were shipped to EMSL Analytical, Inc. in Kernersville, North Carolina for analysis. Analysis and results are discussed in Section 4.0.

3.0 HAZARD ASSESSMENT FACTORS (ASBESTOS)

3.1 Homogeneous Areas

The sample collection was typically conducted by homogeneous materials, i.e., any materials of the same type regarding uniformity throughout in structure or make-up and appearance (color, texture, and/or date of construction/application). Homogeneous materials can be further classified as surfacing materials, thermal system insulation and miscellaneous materials. Miscellaneous materials include ceiling tiles, floor tiles, roofing, caulking, and glazing, etc.

3.2 Hazard Factors

The samples of suspect material collected were classified as either friable (F) or non-friable (NF). Friable means the material can be crumbled, pulverized, or reduced to powder by ordinary hand pressure. Materials initially determined to be non-friable can receive a reclassification of friable if the material is damaged, thereby providing an avenue for release of asbestos fibers. Friable asbestos containing material (ACM) has been determined by EPA and OSHA to be a greater hazard (health risk) than non-friable ACM. In assessing the fiber release potential, the current condition of the suspect materials sampled was noted in the Asbestos Survey Log (Appendix B). The condition was denoted as good, damaged, or significantly damaged. Current condition is a factor used to assess the potential for fiber release. Other factors used to determine potential fiber release include air movement, surface type, and area activity as related to human occupancy.

4.0 ANALYSIS AND RESULTS

4.1 Laboratory Analysis

Bulk samples were analyzed by EMSL Analytical, Inc. using Polarized Light Microscopy (PLM) with Dispersion Staining Techniques (EPA Bulk Analysis Method 600/R-93/116). This method utilizes part of the bulk sample which is mounted on a slide and exposed to an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of asbestos content are then determined through visual estimating. Although this is an estimate, any material containing greater than one percent of any type of asbestos is classified as ACM by the EPA. Any material classified as ACM must be handled accordingly.

Under the revised South Carolina Asbestos Regulation 61-86.1 effective June 27, 2008, any analysis of non-friable organically bound (NOB) material that is found to be negative via PLM testing, must have confirmation testing via Transmission Electron Microscopy (TEM) on one sample from each media.

4.2 Survey Results

Samples were collected and tested from various suspect materials as referenced in Appendix B, Asbestos Sample Log. Table 1 contains a listing of the samples that tested positive for asbestos above the 1% limit. Samples of gray resilient sheet flooring, black and white checkerboard sheet flooring, cove base, Area 1 window frame caulk, Area 3 window frame caulk, roofing shingles and roofing felt were verified as negative via TEM analysis. Appendix C contains a copy of the analytical results from the laboratory.

TABLE 1
VACANT BUILDING
419 HAMPTON STREET
WALTERBORO, SC
ASBESTOS CONTAINING MATERIALS

Description	Location	Category (F/NF)	Approx. SF/LF
Resilient Sheet Flooring – Parquet Design	Second Layer of Sheeting at Counter Area of Area 1 & Bathroom 2	NF – Cat. I – Good Condition	200 SF
Tan Floor Tile(1)	Under Parquet Sheeting at Counter Area of Area 1	NF – Cat. I – Good Condition	150 SF
12 x 12 Flooring Squares – Red Brick Pattern	Room 1	NF – Cat. I – Good Condition	100 SF
Sheetrock w/ Joint Compound Systems	Ceilings & Walls of Area 3	F	4705 SF
Sheetrock w/ Furring Strip Systems	Ceilings of Area 1 & Room 1	F	1030 SF
Seam Caulk of Sheet Metal Roofing	Sheet Metal Roofing over Areas 1 & 2	NF – Cat. I – Good Condition	1780 SF of Metal Sheeting
Silver Roof Sealant Material	Chimney Sealant, Parapet Bases & Sheet Metal of Areas 1 & 2	NF – Cat. I – Good Condition	1900 SF(2)
Roof Parapet Flashing Sealants	Parapet Bases of Areas 1 & 2	NF – Cat. I – Good Condition	140 SF
Roof Parapet Flashing Materials	Parapet Flashing & Vent Pipes of Area 3	NF – Cat. I – Good Condition	180 SF

Note: F - Friable
NF - Non-Friable
(1) - Possible contamination from floor tile resulted in mastic with <1% ACM
(2) - Includes the same 1780 SF of metal sheeting with seam caulk

APPROXIMATE MEASUREMENTS ARE FOR REPORT PURPOSES ONLY.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the inspection of August 13, 2019 and the analytical results from the samples collected and tested by an independent laboratory, the vacant building located at 419 Hampton Street in Walterboro, S.C., does contain friable and non-friable ACM as per Table 1. Such materials will have to be removed and properly disposed by a S.C. licensed abatement contractor per SCDHEC Bureau of Air Quality Asbestos Regulation 61-86.1 effective May 27, 2011 prior to any demolition activities or renovations that involve the ACM.

6.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspection of August 13, 2019. Emerald, Inc., their representative and this report make no representation and/or assumptions as to past conditions or future occurrences. The information, conclusions and recommendations provided herein do not constitute as legal or medical advice. It is further understood that Emerald, Inc. makes no representations or warranties of any kind. Nor are such representations or warranties to be implied with respect to the data furnished. Emerald, Inc. assumes no responsibility with respect to the customers and its employees use thereof.

The information provided herein applies only to the subject property as it existed during Emerald, Inc.'s site visit. If this site's use and/or conditions change, information, observations and recommendations found herein would no longer apply. This report is intended to be used in its entirety. No excerpts may be taken to typify the findings of this survey. Emerald, Inc. shall not be liable for any special, consequential and/or exemplary damages resulting, in whole or in part, from the customer's use of the data provided. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that like materials in the same are homogeneous.

Emerald, Inc. conducted the survey to the best of its ability using the standards of the industry. In the event additional materials are found to contain asbestos, Emerald, Inc. shall not be liable for any failure of such findings during its initial survey.

7.0 APPENDICES

APPENDIX A. Site Plan

APPENDIX B. Asbestos Sample Log

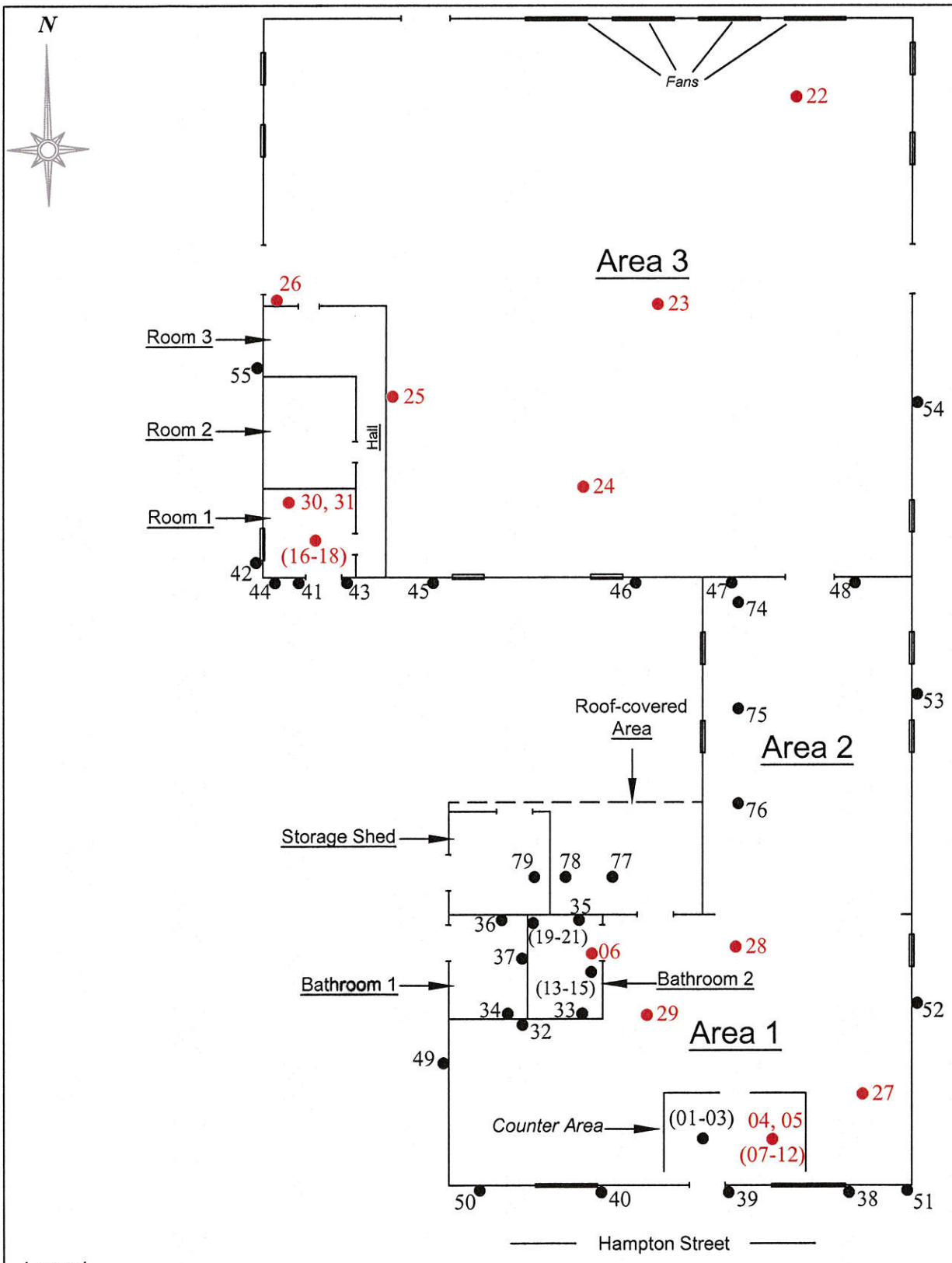
APPENDIX C. Chain of Custody & Analytical Results

APPENDIX D. Building Inspector Licenses

APPENDIX E. Site Photographs

APPENDIX A

SITE PLAN

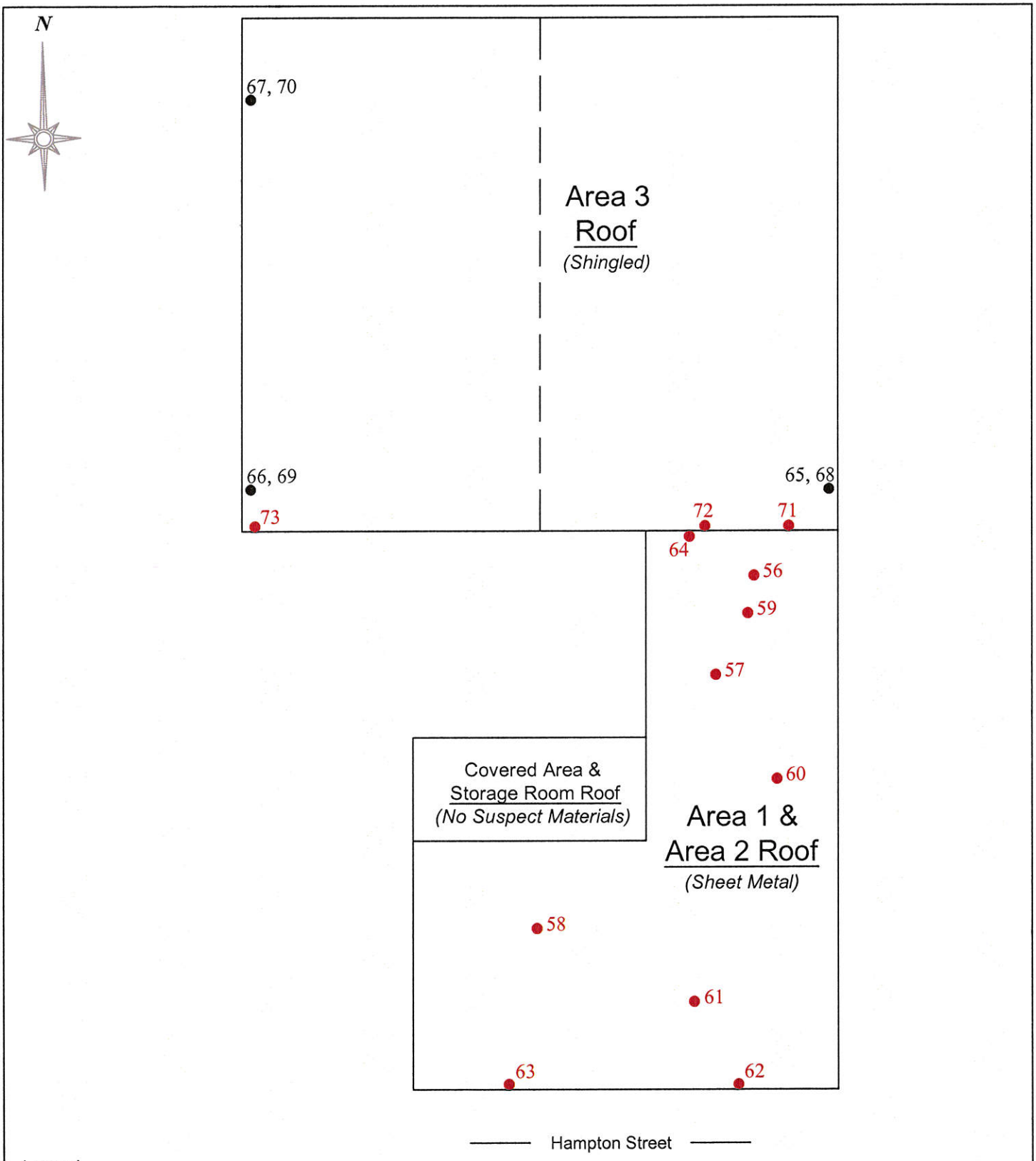


Legend

- = Sample Location with No Asbestos Detected
- = Sample Location with Asbestos Detected at >1%

Not to Scale

PROJECT:	SHEET TITLE:	DATE:	
Vacant Building 419 Hampton St. Walterboro, S.C.	Floor Plan Sample Locations	8/13/2019	EMERALD, INC. Sumter, SC



Legend

- = Sample Location with No Asbestos Detected
- = Sample Location with Asbestos Detected at >1%

Not to Scale

PROJECT:	SHEET TITLE:	DATE:	
Vacant Building 419 Hampton St. Walterboro, S.C.	Roof Sample Locations	8/13/2019	EMERALD, INC. Sumter, SC

APPENDIX B

ASBESTOS SAMPLE LOG

EMERALD, INC.

ASBESTOS SAMPLE LOG

PROJECT NAME: Cardno: 419 Hampton St. - Walterboro
ADDRESS: 419 Hampton St., Walterboro, S.C.

DATE: 8/13/2019
INSPECTOR: Dalton Reames

SAMPLE #	LOCATION			DESCRIPTION	CONDITION	TYPE	F/NF	APPROX. SF/LF	POTENTIAL FOR FUTURE DISTURBANCE								
									CONTACT			VIBRATION			AIR EROSION		
	FLOOR	ROOM	EXACT						H	M	L	H	M	L	H	M	L
419-01	First	Area 1	Front Counter	Resilient Sheet Flooring - Mottled Gray	G	M	NF	175 SF	X			X			X		
419-02																	
419-03																	
419-04	First	Area 1 Front Counter		Resilient Sheet Flooring - Wood Parquet Design	G	M	NF	200 SF	X			X			X		
419-05		Area 1 Front Counter															
419-06		Area 1 - Bathroom 2															
419-07	First	Area 1	Front Counter	Tan Floor Tile	G	M	NF	150 SF	X			X			X		
419-08				Black Floor Tile Mastic*													
419-09				Tan Floor Tile													
419-10				Black Floor Tile Mastic*													
419-11				Tan Floor Tile													
419-12				Black Floor Tile Mastic*													
419-13	First	Bathroom 2	Top Layer	Resilient Sheet Flooring - Black & White Checkerboard Pattern	G	M	NF	25 SF	X			X			X		
419-14																	
419-15																	
419-16	First	Room 1	Floor	12x12 Flooring Squares - Red Brick Pattern	G	M	NF	100 SF	X			X			X		
419-17																	
419-18																	
419-19	First	Bathroom 2	Wall Base	Cove Base - Black	G	M	NF	20 LF	X			X			X		
419-20																	
419-21																	

Note: ***Possible contamination from floor tiles resulted in asbestos being detected at <1% via PLM analysis.**

Condition
G= Good
D= Damaged
SD= Significantly Damaged

Type
S= Surface
TSI= Thermal Systems Insulation
M= Miscellaneous

F/NF
F= Friable
NF= Non Friable

Potential for Future Disturbance
H= High
M= Moderate
L= Low

EMERALD, INC.

ASBESTOS SAMPLE LOG

PROJECT NAME: Cardno: 419 Hampton St. - Walterboro
ADDRESS: 419 Hampton St., Walterboro, S.C.

DATE: 8/13/2019
INSPECTOR: Dalton Reames

SAMPLE #	LOCATION			DESCRIPTION	CONDITION	TYPE	F/NF	APPROX. SF/LF	POTENTIAL FOR FUTURE DISTURBANCE								
									CONTACT			VIBRATION			AIR EROSION		
	FLOOR	ROOM	EXACT						H	M	L	H	M	L	H	M	L
419-22	First	Area 3	Ceiling	Sheetrock with Joint Compound Systems	SD	S	F	4705 SF	X			X			X		
419-23			Ceiling														
419-24			Ceiling														
419-25			Wall														
419-26			Wall														
419-27	First	Area 1 Ceiling		Sheetrock with Furring Strip Systems (Asbestos in Joint Compound)	SD	S	F	1030 SF	X			X			X		
419-28		Area 1 Ceiling															
419-29		Area 1 Ceiling															
419-30		Room 1 Ceiling															
419-31		Room 1 Ceiling															
419-32	First	Area 1	Wall	Cementitious Wallboard and Sheetrock Wall Surfacing System	G	S	F	500 SF	X			X			X		
419-33		Bathroom 2															
419-34		Bathroom 1															
419-35	First	Bathroom 2	Lower Wall Half	Bathroom Wall Surfacing - Simulated Tile	G	S	F	125 SF	X			X			X		
419-36		Bathroom 1															
419-37		Bathroom 1															
419-38	Exterior	Area 1	Front Windows & Door Frame	Area 1 Exterior Window & Door Frame Caulk	G	M	NF	100 LF	X			X			X		
419-39																	
419-40																	

Condition
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F/NF
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EMERALD, INC.

ASBESTOS SAMPLE LOG

PROJECT NAME: Cardno: 419 Hampton St. - Walterboro
ADDRESS: 419 Hampton St., Walterboro, S.C.

DATE: 8/13/2019
INSPECTOR: Dalton Reames

SAMPLE #	LOCATION			DESCRIPTION	CONDITION	TYPE	F/NF	APPROX. SF/LF	POTENTIAL FOR FUTURE DISTURBANCE								
									CONTACT			VIBRATION			AIR EROSION		
	FLOOR	ROOM	EXACT						H	M	L	H	M	L	H	M	L
419-41	Exterior	Area 3	South Window & Door Frames	Area 3 Window & Door Frame Caulk	G	M	NF	100 LF	X			X			X		
419-42																	
419-43																	
419-44	Exterior	Area 3	South-facing CMU Blocks	Area 3 Cementitious Block Surfacing	G	S	F	1050 SF	X			X			X		
419-45																	
419-46																	
419-47																	
419-48																	
419-49	Exterior	CMU Blocks		Exterior CMU Block Paint with Block Fill Material	G	D	F	6500 SF	X			X			X		
419-50																	
419-51																	
419-52																	
419-53																	
419-54																	
419-55																	
419-56	Metal Roofing	Area 1 & Area 2	Sheet Metal Seams	Metal Roof Sheet Metal Seam Caulk	G	M	NF	1780 SF of Metal Sheeting	X			X			X		
419-57																	
419-58																	
419-59	Metal Roofing	Area 1 & Area 2	Sheet Metal, Parapets & Chimney	Metal Roof Silver Sealant Material	G	M	NF	1900 SF of Sheeting, Parapet & Chimney	X			X			X		
419-60																	
419-61																	

Condition
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Type
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TSI= Thermal Systems Insulation
M= Miscellaneous

F/NF
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Potential for Future Disturbance
H= High
M= Moderate
L= Low

EMERALD, INC.

ASBESTOS SAMPLE LOG

PROJECT NAME: Cardno: 419 Hampton St. - Walterboro
ADDRESS: 419 Hampton St., Walterboro, S.C.

DATE: 8/13/2019
INSPECTOR: Dalton Reames

SAMPLE #	LOCATION			DESCRIPTION	CONDITION	TYPE	F/NF	APPROX. SF/LF	POTENTIAL FOR FUTURE DISTURBANCE								
									CONTACT			VIBRATION			AIR EROSION		
	FLOOR	ROOM	EXACT						H	M	L	H	M	L	H	M	L
419-62	Roof Parapets of Areas 1 & 2	Parapet Flashing		Areas 1 & 2 Roof Flashing Materials	G	M	NF	140 SF	X			X			X		
419-63																	
419-64																	
419-65	Area 3 Roof	A-framed Shingled Roof		Area 3 Roofing Shingles - Gray	G	M	NF	5400 SF	X			X			X		
419-66																	
419-67																	
419-68	Area 3 Roof	A-framed Shingled Roof		Area 3 Roofing Felt	G	M	NF	5400 SF	X			X			X		
419-69																	
419-70																	
419-71	Area 3 Roof	Roof Parapet Flashing		Area 3 Roof Parapet Flashing Materials	G	M	NF	180 SF	X			X			X		
419-72																	
419-73																	
419-74	First	Area 2	Hanging Pipe Runs	Brown Pipe Insulation Wrap	G	M	NF	70 LF	X			X			X		
419-75																	
419-76																	
419-77	Storage Shed and Covered Area			Silver Pipe Insulation Wrap and Duct Tape	G	M	NF	40 LF	X			X			X		
419-78																	
419-79																	

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Potential for Future Disturbance
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APPENDIX C

CHAIN OF CUSTODY
&
ANALYTICAL RESULTS

EMSL Analytical, Inc.
706 Gralin Street Kernersville, NC 27284
Tel/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com / greensborolab@emsl.com

EMSL Order: 021905599
Customer ID: EMER51
Customer PO:
Project ID:

Attention: Ronny Lowder
Emerald, Inc.
2520 Tahoe Drive
PO Box 3050
Sumter, SC 29151
Project: Cardno: 419 Hampton St.- Walterboro

Phone: (803) 469-5454
Fax: (803) 775-1970
Received Date: 08/15/2019 9:00 AM
Analysis Date: 08/20/2019
Collected Date: 08/13/2019

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
419-03 *021905599-0065*	Resilient Sheet Flooring-Mottled Gray	Gray/White/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-15-Flooring *021905599-0066*	Resilient Sheet Flooring-Black and White Checkerboard	White/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
419-15-Mastic *021905599-0067*	Resilient Sheet Flooring-Black and White Checkerboard	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-21-Cove Base *021905599-0068*	Cove Base- Black	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-21-Mastic *021905599-0069*	Cove Base- Black	Gray/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-31-Caulk *021905599-0070*	Sheetrock with Furring Strip Caulk	White/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-40 *021905599-0071*	Area 1 Exterior Window & Door Frame Caulk	Gray/White/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-43 *021905599-0072*	Area 3 Exterior Window & Door Frame Caulk	Gray/White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
419-67 *021905599-0073*	Roofing Shingles	Gray/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
419-70 *021905599-0074*	Roofing Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 08/20/2019 11:34:17

EMSL Analytical, Inc.
706 Gralin Street Kernersville, NC 27284
Tel/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com / greensborolab@emsl.com

EMSL Order: 021905599
Customer ID: EMER51
Customer PO:
Project ID:

Attention: Ronny Lowder
Emerald, Inc.
2520 Tahoe Drive
PO Box 3050
Sumter, SC 29151
Project: Cardno: 419 Hampton St.- Walterboro

Phone: (803) 469-5454
Fax: (803) 775-1970
Received Date: 08/15/2019 9:00 AM
Analysis Date: 08/20/2019
Collected Date: 08/13/2019

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types

Analyst(s)

Stephen Bennett (10)

Stephen Bennett, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 08/20/2019 11:34:17

EMSL Analytical, Inc.
706 Gralin Street Kernersville, NC 27284
Tel/Fax: (336) 992-1025 / (336) 992-4175
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EMSL Order: 021905599
Customer ID: EMER51
Customer PO:
Project ID:

Attention: Ronny Lowder
Emerald, Inc.
2520 Tahoe Drive
PO Box 3050
Sumter, SC 29151
Project: Cardno: 419 Hampton St.- Walterboro

Phone: (803) 469-5454
Fax: (803) 775-1970
Received Date: 08/15/2019 9:00 AM
Analysis Date: 08/16/2019 - 08/17/2019
Collected Date: 08/13/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
419-01 *021905599-0001*	Resilient Sheet Flooring- Mottled Gray	Gray/White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
419-02 *021905599-0002*	Resilient Sheet Flooring- Mottled Gray	Gray/White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
419-04 *021905599-0003*	Resilient Sheet Flooring- Brown Parquet Design	Brown Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
419-05 *021905599-0004*	Resilient Sheet Flooring- Brown Parquet Design				Positive Stop (Not Analyzed)
419-07 *021905599-0005*	Tan Floor Tile	Tan Fibrous Homogeneous		25% Quartz 67% Non-fibrous (Other)	8% Chrysotile
419-08 *021905599-0006* *Possible contamination from floor tile*	Black Floor Tile Mastic	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	<1% Chrysotile
419-09 *021905599-0007*	Tan Floor Tile				Positive Stop (Not Analyzed)
419-10 *021905599-0008* *Possible contamination from floor tile*	Black Floor Tile Mastic	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	<1% Chrysotile
419-13-Flooring *021905599-0009*	Resilient Sheet Flooring- Black and White Checkerboard	White/Black Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
419-13-Mastic *021905599-0009A*	Resilient Sheet Flooring- Black and White Checkerboard	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
419-14-Flooring *021905599-0010*	Resilient Sheet Flooring- Black and White Checkerboard	White/Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
419-14-Mastic *021905599-0010A*	Resilient Sheet Flooring- Black and White Checkerboard	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
419-16 *021905599-0011*	12x12 Flooring Squares- Red Brick	Red Non-Fibrous Homogeneous		25% Quartz 70% Non-fibrous (Other)	5% Chrysotile
419-17 *021905599-0012*	12x12 Flooring Squares- Red Brick				Positive Stop (Not Analyzed)
419-19-Cove Base *021905599-0013*	Cove Base- Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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http://www.EMSL.com / greensborolab@emsl.com

EMSL Order: 021905599
Customer ID: EMER51
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
419-19-Mastic *021905599-0013A*	Cove Base- Black	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
419-20-Cove Base *021905599-0014*	Cove Base- Black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
419-20-Mastic *021905599-0014A*	Cove Base- Black	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
419-22-Sheetrock *021905599-0015*	Sheetrock with Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-22-Joint Compound *021905599-0015A*	Sheetrock with Joint Compound	Beige Non-Fibrous Homogeneous		30% Ca Carbonate 67% Non-fibrous (Other)	3% Chrysotile
419-22-Tape *021905599-0015B*	Sheetrock with Joint Compound	Beige Fibrous Homogeneous	100% Cellulose		None Detected
419-23-Sheetrock *021905599-0016*	Sheetrock with Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-23-Joint Compound *021905599-0016A*	Sheetrock with Joint Compound				Positive Stop (Not Analyzed)
419-24-Sheetrock *021905599-0017*	Sheetrock with Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-24-Joint Compound *021905599-0017A*	Sheetrock with Joint Compound				Positive Stop (Not Analyzed)
419-24-Tape *021905599-0017B*	Sheetrock with Joint Compound	Beige Fibrous Homogeneous	100% Cellulose		None Detected
419-25-Sheetrock *021905599-0018*	Sheetrock with Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-25-Joint Compound *021905599-0018A*	Sheetrock with Joint Compound				Positive Stop (Not Analyzed)
419-25-Tape *021905599-0018B*	Sheetrock with Joint Compound	Beige Fibrous Homogeneous	100% Cellulose		None Detected
419-26-Sheetrock *021905599-0019*	Sheetrock with Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-26-Joint Compound *021905599-0019A*	Sheetrock with Joint Compound				Positive Stop (Not Analyzed)
419-26-Tape *021905599-0019B*	Sheetrock with Joint Compound	Beige Fibrous Homogeneous	100% Cellulose		None Detected
419-27-Sheetrock *021905599-0020*	Sheetrock with Furring Strip Caulk	Gray/White Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-27-Joint Compound *021905599-0020A*	Sheetrock with Furring Strip Caulk	Tan Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
419-27-Caulk *021905599-0020B*	Sheetrock with Furring Strip Caulk	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-28-Sheetrock *021905599-0021*	Sheetrock with Furring Strip Caulk	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-28-Joint Compound *021905599-0021A*	Sheetrock with Furring Strip Caulk				Positive Stop (Not Analyzed)
419-28-Caulk *021905599-0021B*	Sheetrock with Furring Strip Caulk	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-29-Sheetrock *021905599-0022*	Sheetrock with Furring Strip Caulk	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-29-Joint Compound *021905599-0022A*	Sheetrock with Furring Strip Caulk				Positive Stop (Not Analyzed)
419-29-Caulk *021905599-0022B*	Sheetrock with Furring Strip Caulk	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-30-Sheetrock *021905599-0023*	Sheetrock with Furring Strip Caulk	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-30-Joint Compound *021905599-0023A*	Sheetrock with Furring Strip Caulk				Positive Stop (Not Analyzed)
419-30-Caulk *021905599-0023B*	Sheetrock with Furring Strip Caulk	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
419-31-Sheetrock *021905599-0024*	Sheetrock with Furring Strip Caulk	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-31-Joint Compound *021905599-0024A*	Sheetrock with Furring Strip Caulk				Positive Stop (Not Analyzed)
419-32-Cementitous Wallboard *021905599-0025*	Cementitious Wallboard and Sheetrock Combination	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
419-32-Sheetrock *021905599-0025A*	Cementitious Wallboard and Sheetrock Combination	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-33-Cementitous Wallboard *021905599-0026*	Cementitious Wallboard and Sheetrock Combination	Brown/Gray Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
419-33-Sheetrock *021905599-0026A*	Cementitious Wallboard and Sheetrock Combination	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-34-Cementitious Wallboard *021905599-0027*	Cementitious Wallboard and Sheetrock Combination	Brown/Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
419-34-Sheetrock *021905599-0027A*	Cementitious Wallboard and Sheetrock Combination	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
419-35 *021905599-0028*	Bathroom Wall Surfacing- Simulated Tile	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
419-36 *021905599-0029*	Bathroom Wall Surfacing- Simulated Tile	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
419-37 *021905599-0030*	Bathroom Wall Surfacing- Simulated Tile	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
419-38 *021905599-0031*	Area 1 Exterior Window & Door Frame Caulk	Gray/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-39 *021905599-0032*	Area 1 Exterior Window & Door Frame Caulk	Gray/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-41 *021905599-0033*	Area 3 Exterior Window & Door Frame Caulk	Brown/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-42 *021905599-0034*	Area 3 Exterior Window & Door Frame Caulk	Brown/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-44 *021905599-0035*	Area CMU Block Surfacing	Gray/Tan Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
419-45 *021905599-0036*	Area CMU Block Surfacing	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
419-46 *021905599-0037*	Area CMU Block Surfacing	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
419-47-Textured Paint *021905599-0038*	Area CMU Block Surfacing	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-47-Concrete *021905599-0038A*	Area CMU Block Surfacing	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
419-48 *021905599-0039*	Area CMU Block Surfacing	Gray/Tan Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
419-49 *021905599-0040*	Exterior CMU Paint with Block Fill Material	Beige Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-50 *021905599-0041*	Exterior CMU Paint with Block Fill Material	Gray/Tan Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-51 *021905599-0042*	Exterior CMU Paint with Block Fill Material	White/Beige Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-52 *021905599-0043*	Exterior CMU Paint with Block Fill Material	White Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-53 *021905599-0044*	Exterior CMU Paint with Block Fill Material	Tan/White Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
419-54 *021905599-0045*	Exterior CMU Paint with Block Fill Material	White Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-55 *021905599-0046*	Exterior CMU Paint with Block Fill Material	White/Beige Non-Fibrous Homogeneous		5% Quartz 5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
419-56 *021905599-0047*	Metal Roof Sheeting Seam Caulk	Brown/Gray/Black Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
419-57 *021905599-0048*	Metal Roof Sheeting Seam Caulk				Positive Stop (Not Analyzed)
419-59 *021905599-0049*	Silver Roof Sealant Material	Black/Silver Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
419-60 *021905599-0050*	Silver Roof Sealant Material				Positive Stop (Not Analyzed)
419-62-Thin Tar Layer *021905599-0051*	Area 1 & 2 Roof Parapet Flashing Sealant	Black/Silver Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
419-62-Thick Tar Layer *021905599-0051A*	Area 1 & 2 Roof Parapet Flashing Sealant	Black Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
419-63 *021905599-0052*	Area 1 & 2 Roof Parapet Flashing Sealant				Positive Stop (Not Analyzed)
419-65 *021905599-0053*	Roofing Shingles	Gray/Black Fibrous Homogeneous	8% Glass	92% Non-fibrous (Other)	None Detected
419-66 *021905599-0054*	Roofing Shingles	Gray/Black Fibrous Heterogeneous	8% Glass	92% Non-fibrous (Other)	None Detected
419-68 *021905599-0055*	Roofing Felt	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
419-69 *021905599-0056*	Roofing Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
419-71 *021905599-0057*	Area 3 Roof Parapet Flashing Materials	Brown/Black Fibrous Homogeneous	2% Glass	90% Non-fibrous (Other)	8% Chrysotile
419-72 *021905599-0058*	Area 3 Roof Parapet Flashing Materials	Brown/Black/Silver Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
419-74 *021905599-0059*	Brown Pipe Insulation Wrap	Brown/Black/Silver Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
419-75 *021905599-0060*	Brown Pipe Insulation Wrap	Brown/Black/Silver Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
419-76 *021905599-0061*	Brown Pipe Insulation Wrap	Brown/Black/Silver Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
419-77-Wrap *021905599-0062*	Silver Pipe Insulation Wrap with Duct Tape	Tan/Black/Silver Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
419-77-Duct Tape *021905599-0062A*	Silver Pipe Insulation Wrap with Duct Tape	Silver Fibrous Homogeneous	20% Synthetic	80% Non-fibrous (Other)	None Detected
419-78-Wrap *021905599-0063*	Silver Pipe Insulation Wrap with Duct Tape	Tan/Black/Silver Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
419-78-Duct Tape *021905599-0063A*	Silver Pipe Insulation Wrap with Duct Tape	Silver Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
419-79-Wrap *021905599-0064*	Silver Pipe Insulation Wrap with Duct Tape	Gray/Silver/Beige Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
419-79-Duct Tape *021905599-0064A*	Silver Pipe Insulation Wrap with Duct Tape	Silver Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected

Analyst(s)
Kristie Elliott (59)
Nicole Shutts (21)

Stephen Bennett, Laboratory Manager
or Other Approved Signatory

Initial report from: 08/19/2019 08:18:12

OrderID: 021905599

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 5599

PHONE
FAX

Company Name : Emerald, Inc.		**EMSL Customer ID:**	
Street: P.O. Box 3050		**City:** Sumter	**State/Province:** SC
Zip/Postal Code: 29151	**Country:** US	**Telephone #:** 803-469-5454	**Fax #:**
Report To (Name): Ronny Lowder		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: rlowder@emeraldinc-us.com		**Purchase Order:**	
Project Name/Number: Cardno: 419 Hampton St. - Walterboro		**EMSL Project ID** *(Internal Use Only)*:	
U.S. State Samples Taken: SC		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ■ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☑ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☑ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM EPA 600/R-93/116 with milling prep (<1%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Samplers Name: Dalton Reames **Samplers Signature:** Dalton Reames

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	*Descriptions on Following Pages		8/13/2019

Client Sample # (s): 419-01 thru 419-79 **Total # of Samples:** 79 | 64

Relinquished (Client): Dalton Reames **Date:** 8/14/2019 **Time:** 1500

Received (Lab): [illegible] **Date:** 8/15/19 **Time:** 9am

Comments/Special Instructions:

① EFX 795710251657

OrderID: 021905599

CHAIN OF CUSTODY

5599

ASBESTOS LAB SERVICES

EMSL Analytical, Inc.
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Kernersville, NC 27284

Phone: (336) 992-1025
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http://www.emsl.com

Client Sample # (s) 419-01 thru 419-79 Total Samples #: 79
Relinquished: Date: Time:
Received: Date: Time:
Relinquished: Date: Time:
Received: Date: Time:

SAMPLE NUMBER	SAMPLE DESCRIPTION	VOLUME (if applicable)
419-01	Resilient Sheet Flooring - Mottled Gray	
419-02	Resilient Sheet Flooring - Mottled Gray	
419-03	Resilient Sheet Flooring - Mottled Gray	
419-04	Resilient Sheet Flooring - Brown Parquet Design	
419-05	Resilient Sheet Flooring - Brown Parquet Design	
419-06	Resilient Sheet Flooring - Brown Parquet Design	
419-07	Tan Floor Tile	
419-08	Black Floor Tile Mastic	
419-09	Tan Floor Tile	
419-10	Black Floor Tile Mastic	
419-11	Tan Floor Tile	
419-12	Black Floor Tile Mastic	
419-13	Resilient Sheet Flooring - Black and White Checkerboard	
419-14	Resilient Sheet Flooring - Black and White Checkerboard	
419-15	Resilient Sheet Flooring - Black and White Checkerboard	
419-16	12x12 Flooring Squares - Red Brick	
419-17	12x12 Flooring Squares - Red Brick	
419-18	12x12 Flooring Squares - Red Brick	
419-19	Cove Base - Black	
419-20	Cove Base - Black	
419-21	Cove Base - Black	
419-22	Sheetrock with Joint Compound	
419-23	Sheetrock with Joint Compound	
419-24	Sheetrock with Joint Compound	Sample All Layers
419-25	Sheetrock with Joint Compound	
419-26	Sheetrock with Joint Compound	
419-27	Sheetrock with Furring Strip Caulk	
419-28	Sheetrock with Furring Strip Caulk	
419-29	Sheetrock with Furring Strip Caulk	Sample All Layers
419-30	Sheetrock with Furring Strip Caulk	
419-31	Sheetrock with Furring Strip Caulk	
419-32	Cementitious Wallboard and Sheetrock Combination	
419-33	Cementitious Wallboard and Sheetrock Combination	Sample All Layers
419-34	Cementitious Wallboard and Sheetrock Combination	
419-35	Bathroom Wall Surfacing - Simulated Tile	
419-36	Bathroom Wall Surfacing - Simulated Tile	
419-37	Bathroom Wall Surfacing - Simulated Tile	
419-38	Area 1 Exterior Window & Door Frame Caulk	
419-39	Area 1 Exterior Window & Door Frame Caulk	
419-40	Area 1 Exterior Window & Door Frame Caulk	
419-41	Area 3 Exterior Window & Door Frame Caulk	
419-42	Area 3 Exterior Window & Door Frame Caulk	
419-43	Area 3 Exterior Window & Door Frame Caulk	

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5599

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SAMPLE NUMBER	SAMPLE DESCRIPTION	VOLUME (if applicable)
419-44	Area 3 CMU Block Surfacing	
419-45	Area 3 CMU Block Surfacing	
419-46	Area 3 CMU Block Surfacing	
419-47	Area 3 CMU Block Surfacing	
419-48	Area 3 CMU Block Surfacing	
419-49	Exterior CMU Paint with Block Fill Material	
419-50	Exterior CMU Paint with Block Fill Material	
419-51	Exterior CMU Paint with Block Fill Material	
419-52	Exterior CMU Paint with Block Fill Material	
419-53	Exterior CMU Paint with Block Fill Material	
419-54	Exterior CMU Paint with Block Fill Material	
419-55	Exterior CMU Paint with Block Fill Material	
419-56	Metal Roof Sheeting Seam Caulk	
419-57	Metal Roof Sheeting Seam Caulk	
419-58	Metal Roof Sheeting Seam Caulk	
419-59	Silver Roof Sealant Material	
419-60	Silver Roof Sealant Material	
419-61	Silver Roof Sealant Material	
419-62	Area 1 & 2 Roof Parapet Flashing Sealant	
419-63	Area 1 & 2 Roof Parapet Flashing Sealant } Sample All Layers	
419-64	Area 1 & 2 Roof Parapet Flashing Sealant	
419-65	Roofing Shingles	
419-66	Roofing Shingles	
419-67	Roofing Shingles	
419-68	Roofing Felt	
419-69	Roofing Felt	
419-70	Roofing Felt	
419-71	Area 3 Roof Parapet Flashing Materials	
419-72	Area 3 Roof Parapet Flashing Materials } Sample All Layers	
419-73	Area 3 Roof Parapet Flashing Materials	
419-74	Brown Pipe Insulation Wrap	
419-75	Brown Pipe Insulation Wrap	
419-76	Brown Pipe Insulation Wrap	
419-77	Silver Pipe Insulation Wrap with Duct Tape	
419-78	Silver Pipe Insulation Wrap with Duct Tape } Sample All Layers	
419-79	Silver Pipe Insulation Wrap with Duct Tape	

3 of 3

APPENDIX D

BUILDING INSPECTOR LICENSES

SCDHEC ISSUED

Asbestos ID Card

Ronny L Lowder

		Expiration Date:
CONSULTMP	ASB-32201	01/09/20
CONSULTBI	BI-01497	01/09/20
SUPERAHERA	SA-00715	01/08/20

SCDHEC ISSUED

Asbestos ID Card

J Dalton Reames

		Expiration Date:
AIRSAMPLER	AS-00287	12/06/19
CONSULTBI	BI-00945	12/07/19
SUPERAHERA	SA-01252	12/06/19
CONSULTPD	PD-00200	10/25/19

APPENDIX E

SITE PHOTOGRAPHS

Photo #1
Northeast-facing View of Building

Photo #2
Asbestos Detected at >1% in Parquet Flooring;
No Asbestos Detected in Mottled Gray Flooring

Photo #3
Asbestos Detected at >1% in Tan Floor Tiles
under Parquet Sheet Flooring at Counter Area

Photo #4
Parquet Sheet Flooring under non-asbestos
containing Checkerboard Sheeting in BR 2

Photo #5
Asbestos Detected at >1% in Brick-patterned Flooring Squares in Room 1

Photo #6
Asbestos Detected at >1% in Sheetrock with Joint Compound Systems

Photo #7
View of Sheetrock Wall System with Joint Compound in Area 3

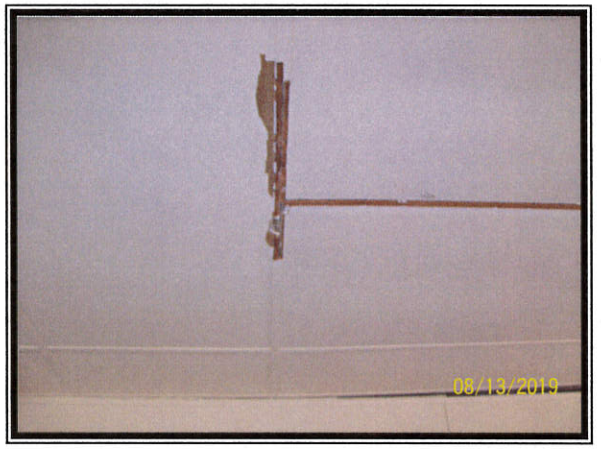

Photo #8
Asbestos Detected at >1% in Joint Compound of Sheetrock with Furring Strips Systems

Photo #9
Northeast-facing view of Sheet Metal Roofing System over Areas 1 & 2 (Rusted)

Photo #10
Asbestos Detected at >1% in Metal Roof Seam Caulk of Areas 1 & 2

Photo #11
Asbestos Detected at >1% in Silver Roof Sealant Material as Seen on Chimney

Photo #12
View of Sliver Roof Sealant Material on Sheet Metal Panel

Photo #13
Asbestos Detected at >1% in Area 1 & 2 Roof Parapet Flashing Sealant Materials

Photo #14
View of Flashing Sealant Materials at North End of Area 2 Roof

Photo #15
Asbestos Detected at >1% in Area 3 Parapet Flashing Materials; No Asbestos in Shingles/Felt

Photo #16
View of Area 3 Roof Vent Pipe with Asbestos-containing Sealant Material

Photo #17
No Asbestos Detected in Cementitious Board and Sheetrock Combination Wall System

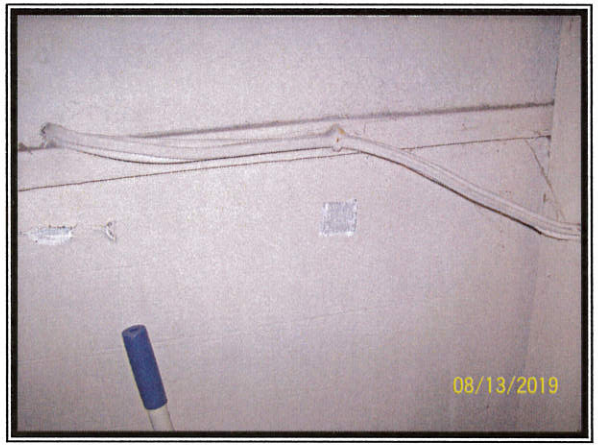

Photo #18
No Asbestos Detected in Simulated Tile Wall Surfacing in Bathrooms

Photo #19
No Vermiculite in CMU; No Asbestos Detected in Exterior Paint or Block Fill Materials

Photo #20
No Asbestos Detected in Any Pipe Wrap Materials