

COMPLIANCE ENVIRONMENTAL, INC.

SECTION 01013 - SUMMARY OF THE WORK - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. **The Project** consists of interior and exterior asbestos abatement at the Hodgson Vo-Tech High School building as follows:

1. **Project Name:** 2026 Asbestos Abatement of the Hodgson Vo-Tech School.
2. **Project Location:** Hodgson Vocational Technical High School, 2575 Glasgow Avenue, Newark, Delaware, 19702.
3. **Owner:** New Castle County Vocational Technical School District, 1417 Newport Road, Wilmington, Delaware 19804.
4. **Work Period:** All of the work must be performed starting on July 13, 2026 and must be completed by November 30, 2026. The work must be completed in phases. Once the work is started, it must be completed as soon as possible. The performance of this work by the Contractor must not disrupt school operations.
5. **Desired Work Schedule:** The Owner desires that all work be completed as soon as possible without the addition of overtime hours. All of the work must be completed in the following phases. The Contractor shall complete each phase in consecutive order prior to moving to the next phase. Each phase includes the first floor, the second floor and exterior of the building:
 - a. **Phase I work area abatement** starting on July 13, 2026 with completion by August 10, 2026. The removal and disposal of the Mercury containing flexible floor in the Gymnasium is included in the Phase I work. Sealed wooden isolation barriers at all doors and all openings must be installed prior to starting Phase II work.
 - b. **Phase II work area abatement** starting on August 10, 2026 with completion by September 7, 2026.
 - c. **Phase III work area abatement** starting on September 7, 2026 with completion by November 30, 2026.

The location of each the work phase is shown on drawings PS-1 and PS-2. The Contractor shall begin and complete each phase in order prior to starting the next phase. After completion of the Phase I work, the Owner will begin demolition operations of this building section. The work in Phase II shall begin at the wooden isolation barrier and move north away from Phase I until all of the work is completed.

6. **Prevailing Wage Rates:** State of Delaware Prevailing Wage Rates are in effect. The project is located in New Castle County. See attached letter.
7. **Liquidated Damages:** The Contractor shall pay liquidated damages at the rate of \$ 2,000.00 per calendar day if substantial completion is not achieved by the dates indicated in this specification.
8. **Owner's Representative:** Compliance Environmental, Inc. (CEI) will represent the Owner on this project. CEI will be performing routine inspections during the

COMPLIANCE ENVIRONMENTAL, INC.

Contractor's work and will act as a liaison between the Contractor and Owner. The Contractor shall provide adequate notice to CEI to provide site meetings and inspections. Adequate notice is the period of time agreed to by the Contractor and Professional Service Firm.

- B. Contract Documents**, dated December 23, 2025 were prepared for the Project by Compliance Environmental, Inc., 110 Lafferty Lane, Suite A, Dover, Delaware 19901, CEI Project Number CEI-122325. Conditions and requirements are indicated on the Contract Documents including, but not limited to, this specification, drawings, and any addenda to the specifications.
- C. The Work** consists of the removal of all interior and exterior asbestos-containing materials to prepare the building for demolition. All layers must be removed by the Contractor to expose and abate the asbestos-containing materials. All asbestos-containing materials must be abated by the Contractor. Abate means to perform asbestos-abatement according to these specifications including, but not limited to, liquid and solid waste handling and proper disposal.

The Contractor shall provide at it's cost, all labor, subcontractors, vendors, materials and equipment to complete the work.

The Base Bid item includes all of the work required. The estimated (approximate) quantity of exposed asbestos-containing materials to be removed and disposed for this work is included in Table 1. and Table 2. in this specification.

The Contractor shall include in its lump sum price the cost of removing all asbestos-containing materials in listed in Table 1. and Table 2 in his specification and include this cost in the Base Bid item on the bid form.

The Contractor shall directly coordinate its daily work schedule for the most efficient abatement of asbestos materials required. Once work is started at a work section as identified on the drawings, the Contractor shall continue work in that section until completed prior to starting a new work section.

This project requires the Contractor to perform the work in phases as shown on Drawings PS-1 and PS-2. The work in each phase includes the first floor, second floor and exterior of the building. All work within a phase must be completed prior to starting the next phase. After completion of the Phase I work area and installation of the sealed wooden isolation barriers, the Owner will begin demolition operations of this building section. Sealed wooden isolation barriers shall be installed at all doors and all openings between Phase I and Phase II work areas and must be installed prior to starting Phase II work. The work in Phase II shall begin at the wooden isolation barrier and move North away from the Phase I work area until all of the work is completed.

The Contractor shall include in its bid the removal of ceilings and non-bearing walls necessary to access asbestos materials and to perform asbestos abatement work. Non-asbestos containing and non-asbestos contaminated ceiling material removed by the Contractor can be stored inside of the building for disposal by others.

All non-asbestos containing and non-asbestos contaminated materials removed by the

COMPLIANCE ENVIRONMENTAL, INC.

Contractor to access asbestos for abatement can be stored inside of the building for disposal by others. This includes, but not limited to, lockers, built-in and free standing cabinets, furniture, smart boards and dry erase boards. No material shall be stored at the exterior of the building. This excludes any waste generated by the Contractor during the work including, but not limited to, trash, debris, and unused materials.

This project requires that asbestos abatement work must be completed in a particular sequence at building section to allow for demolition activities to be performed contemporaneously with the abatement. Exterior and roofing work must be completed with that work in each phase. The following is the required sectional work sequence for the asbestos abatement work. The Contractor shall complete each section in the following consecutive order prior to moving on the next section.

1. Start the project with the Phase I work area.
2. Complete Phase I work area then start Phase II work area.
3. Complete Phase II work area then start Phase III work area.

ADDITIONAL WORK: GYMNASIUM MERCURY FLEXIBLE FLOOR REMOVAL AND DISPOSAL:

As part of this project, the Contractor shall properly remove down to the concrete or metal sub floor, handle and dispose of all flexible flooring in the Gymnasium. The Owner will remove all bleacher seating to access and remove flooring. The thickness of the flexible floor varies from approximately 0.75-inch to 2.5-inches. The approximate area of the floor is 10,500-square feet. According to laboratory testing, the flooring contains 320 mg/kg of total Mercury in the collected sample. Further testing of the material using the TCLP method determined that the flooring is considered a hazardous waste. The TCLP sample analysis reported a level of 0.91 to 1.3 mg/L. No asbestos-containing materials we found at the Gymnasium floor. Sample test results are attached. The Contractor shall perform the work itself or use the subcontractor listed in the bid form to perform the work. The Contractor is responsible for proper characterization, profiling and disposal of the waste. The Contractor shall use the waste disposal facility and transporter written on the bid form without substitution. List the waste disposal method on the bid form. See removal procedures in this specification for more information. The removal and disposal of the Mercury containing flexible floor in the Gymnasium is included in the Phase I work.

D. Work Activities required by the Contractor to complete this project shall include the following.

1. **Work to be Performed Under This Contact:** includes complete removal and proper disposal of all asbestos-containing materials. Asbestos locations are shown on the contract documents prepared by Compliance Environmental, Inc. The bulk sampling report is provided for reference.

The total estimated quantity of positive and assumed asbestos-containing materials to be abated and their location is shown on the attached Table 1, Table 2 and drawings.

2. **Work to be Performed Prior to Work Under This Contact:** The Owner shall

COMPLIANCE ENVIRONMENTAL, INC.

remove desired non-fixed articles from work area(s) that are not contaminated. All non-fixed articles remaining in work areas shall be moved to non-work areas prior to the start of any asbestos abatement work by the Contractor at no additional cost to the Owner.

3. **Project Site Notices:** The Contractor shall provide, as a minimum and at all times, at a visible location at the project site, the following:
 - (i). Equal Employment Opportunity and Minimum Wage Information
 - (ii). State of Delaware DNREC 10-Day Notification (provided by Contractor)
 - (iii). State of Delaware Prevailing Wage Determination
 - (iv). Site Supervisor and Worker Badges
 - (v). Air Sampling Results (if any)
 - (vi). Emergency Planning Procedures
 - (vii). Subcontractor List
 - (viii). Safety Data Sheets
4. **Submittals Prior to Site Work:** The Contractor shall provide the following items to the Owner's Representative prior to asbestos abatement:
 - (i). Signed Contracts.
 - (ii). Signed Payment and Performance Bonds (as required).
 - (iii). Certificate of Liability Insurance.
 - (iv). Copy of the State of Delaware DNREC 10-Day Notification.
 - (v). Project Schedule (with updates and needed).
 - (vi). Completed Initial Exposure Assessment Form (Appendix C, Section 01562)
 - (vii). Completed Certificates of Site Worker's Acknowledgment Forms (Appendix C, Section 01560).
 - (viii). Complete list of Project Supervisors and Workers including names and addresses.
 - (ix). Fit test results, medical results, and certifications for all project personnel including Project Supervisors and Workers.
5. **Assumed Asbestos Materials (if applicable):** The project contains assumed asbestos-containing materials located in Table 2. The Contractor shall include in its lump sum price the cost of removing all assumed asbestos materials.
6. **Unit Prices:** The unit prices listed on the bid form could be used to adjust the Contractor's base bid and alternates, add or deduct, for changes in quantities on the project. However, the Owner reserves the right to accept or reject these listed unit prices and to ask the Contractor to provide other pricing based upon project conditions.
7. **Measurements and Dimensions:** It is the Contractor's responsibility to verify all measurements prior to the openings of the bids. Any discrepancies in the measurements or work site conditions must be made prior to the opening of the bids.
8. **Work Area Security & Protection:** In performing the work, the Contractor is responsible for the security of the work area and protection of any and all equipment, materials, and surfaces not scheduled for work activities. The Contractor shall not

be provided with a key to building(s) where work is to be performed. **Since the school campus will be in operation during the project work period, the Contractor shall, at all times, take every measure to secure all work areas from intentional or accidental entry by non-authorized people.** It is the Contractor's responsibility to adequately barricade, sign and control access to work areas in such a way to prevent accidental access to Work Areas. Drop cloths shall be installed and used from all exterior access points to work areas. Plastic sheeting shall be installed by the Contractor to cover all articles and equipment remaining in work areas and other areas prior asbestos removal activities. All drop cloths and plastic sheeting shall be properly disposed by Contractor after use.

9. **Damage Repair & Missing Item Replacement:** The Contractor shall repair or replace, at his own expense, any damage occurring during his activities to any building component not scheduled for asbestos abatement or movement. Any damaged or missing items will be replaced or paid for by the Contractor prior to receipt of final contract payment.
10. **Payment Requests:** The Owner's Representative shall review and recommend payment of all invoices from the Contractor. Invoices shall be submitted by the Contractor in a form acceptable to both the Owner's Representative and Owner.
11. **Critical Barriers:** Critical barriers consisting of two (2) single layers of 6-mil polyethylene sheeting applied separately by the Contractor with varying tape lines shall be installed, as a minimum, at ventilation systems, doors, windows, electrical wall switches and receptacle, and other openings in the work area. See Section 01526 for more information.
12. **Ventilation Systems:** The Contractor shall completely immobilize any ventilation systems in work areas by, as a minimum, by sealing supply and return ducts with critical barriers, locking and tagging the system "off," notifying building operators, and providing proper labeling. See Section 01513 for more information.
13. **Toilet Facilities:** The Contractor shall provide and maintain toilet facilities for its use during the project.
14. **Waste Handling, Labeling and Transport:** All asbestos materials shall be thoroughly and adequately wetted and double-bagged in 6-mil poly bags with both bags goose-necked or in double-layers of 6-mil poly for waste which will not fit into bags. All waste shall be sealed in a manner to prevent the contents of the bag from escaping. Double bagging within the work area inside of the containment is prohibited. Waste shall be wetted and placed into a single bagged (or poly wrap) inside of the containment work area and then moved out of the work area to the waste bag out area where the waste will be double bagged. The double bag shall also be goose-necked. All waste shall be properly handled and labeled for disposal by the Contractor. All asbestos-containing and contaminated materials shall be properly handled, labeled stored, transported and disposed by the Contractor in accordance with all federal, state, and local laws, regulations, ordinances, guidelines and the requirements of this specification and the waste disposal facility requirements. Prior authorization is required prior to the Contractor using any open-top dumpsters on the project for asbestos-containing or assumed asbestos-containing wastes.

COMPLIANCE ENVIRONMENTAL, INC.

All Mercury containing wastes shall be handled and disposed according to all OSHA, DOT, EPA and Delaware requirements.

The Owner reserves the right to accept or reject the use of any waste facility by the Contractor.

15. **Waste Disposal:** All asbestos-containing materials and contaminated asbestos-containing materials including all liquids and debris generated during the work shall be properly handled, stored and disposed by the Contractor the licensed and permitted landfill the Contractor provided on the bid form for the project. Any waste disposal facility proposal by the Contractor is subjected to approval by the Owner. **No abatement is to occur or continue until the arrival and preparation of a suitable closed top dumpster or a Delaware Solid Waste Approved Transport Vehicle. The dumpster and/or transport vehicle must be transported directly to the approved landfill facility. If the waste from this project is to be mixed with other projects, this must be done at a properly licensed Delaware transfer facility.** All non-asbestos-containing or non-asbestos-contaminated wastes removed by the Contractor shall be properly disposed. Waste shall be stored in a manner which does not block ingress or egress of the building, rooms, closets, doors or windows and does not pose a fire or safety concern as determined by the Owner or the Owner's Representative. The Contractor shall provide all waste disposal documentation to the Owner's Representative. See Sections 01013 and 02084 of the specification for more information.

All Mercury containing wastes shall be handled and disposed according to all OSHA, DOT, EPA and Delaware requirements.

The Owner reserves the right to accept or reject the use of any waste facility by the Contractor.

16. **Non-Asbestos-Containing or Asbestos Contaminated Materials:** All non-asbestos-containing or asbestos contaminated materials can remain on-site within the building at locations approved by the Owner's Representative. This excludes any waste generated by the Contractor during the work including, but not limited to, trash, debris, and unused materials.
17. **Used of Amended Water:** The Contractor shall use amended water during all asbestos abatement activities. **Dry removal is prohibited on this project.** Care shall be taken by the Contractor considering the right amount of water required not to create leaking conditions or hazards to the work area or surrounding area, including the ceiling of the first floor.
18. **Shower Waste Water:** Shower wastewater shall be either filtered or jelled by the Contractor. All filters and/or jelled water shall be properly handled and disposed by the Contractor as contaminated waste.
19. **Back-Flow Prevention:** The Contractor shall ensure that proper back-flow protection at all sources of water are installed and maintained at all water source hook-ups throughout the project. The Contractor shall use a back-flow preventer device installed in plumbing system closest to the water source to ensure that water flows in

COMPLIANCE ENVIRONMENTAL, INC.

only one direction, preventing contaminated water from flowing back into the clean water supply. The device must be OEM designed specifically for back-flow prevention.

20. **Personal Protective Equipment:** Don personal protective equipment prior to entering the work area. Personal Protective Equipment (PPE) shall include as a minimum, full-body coveralls, head and foot covers, and full-faced PAPRs. Contractor employees shall not remove any PPE while in the work area.
21. **Mini-Containments (if applicable):** Mini-containments shall only be used where specified. The mini-containment shall be a free-standing structure constructed of a single layer of 6-mil plastic sheeting on the floor, ceiling and walls of the structure. The containment shall have a three-stage decontamination unit, with a shower, at the entrance to the containment and have negative air controls to establish and maintain at all times a minimum pressure differential of minus 0.02 inches of water. The containment shall have “asbestos danger signs” near all entrances and exits. All decontamination procedures shall be strictly implemented by the Contractor.
22. **Sealed Wooden Barriers:** Install sealed wooden barriers at locations shown on the drawings at all doors and all openings between Phase I and Phase II work prior to the start of any work in Phase II. Removal of the barriers is not required. The barrier shall be constructed in a manner to prevent accidental entry into work areas. The Contractor shall place “Danger–Construction Area” signs at each barrier location mounted outside of protected areas in clear view. Also, exit signs shall be placed by the Contractor according to OSHA and code requirements. The barrier shall consist of, at a minimum, 5/8-inch thick OSB with wooden support studs at 16-inches on center for the floor to the bottom of the drop ceiling and completely cover the space from side to side of the opening. A single layer plastic 6-mil polyethylene sheeting shall be installed on both side of the barrier. Each layer of plastic sheeting will extend above the drop ceiling to the roof decking. Seal the space between the top of the wooden wall to the bottom of the roof decking. The barrier shall completely cover all openings and be installed in a manner to prevent damage to the building components, including but not limited to, paint, ceilings, floor coverings and building components.
23. **Filler:** The term “filler” means cementitious materials used at concrete floors. This includes, but not limited to, leveling materials, mortars and patching materials that are in contact with concrete. Filler varies in hardness and thickness from location to location and may be random or completely under larger areas of building materials. The material may contain various admixtures that contribute to its physical properties. If a filler was found to contain asbestos-containing materials, it will be identified in the list of materials to be abated by removing all layers to access the filler for the complete removal. The finished floor must smooth and be free of asbestos filler.

24. **Floor Tile Machines (if applicable):** The use of floor tile machines are allowed on this project at the discretion of the Contractor and if the Contractor can demonstrate after bidding and prior to the start of the work, that proper usage and effective decontamination procedures will be used by the Contractor. If the Contractor elects to use a floor tile machine for any portion of the work herein, prior to its usage, the Contractor shall submit a written Work Plan for review and have the Work Plan approved. The Work Plan shall contain, at a minimum, the following elements:
- (i). The floor tile machine(s) will be visually inspected by the Owner's Representative prior to use on this Project to verify that the machine is clean and containing no viable debris or contamination. If not acceptable, the floor tile machine(s) cannot be used on this Project.
 - (ii). The Contractor shall be responsible for any damage caused by the machine(s).
 - (iii). Detailed description of the method(s) which will be used by the Contractor to decontaminate the equipment and verify using AHERA visual and air testing clearance protocols, that the equipment was effectively decontaminated. All visual and air testing required will be at no additional cost to the Owner. The Contractor shall provide documentation to the Owner's Representative that it has passed all AHERA visual and air testing clearance protocols prior removal of any floor tile machines from its decontamination area.
 - (iv). Decontamination shall be performed prior to moving of the machine(s) out of any Work Area to effectively remove any asbestos residue. Decontamination shall be performed in a dedicated containment (the equipment decontamination/bag-out area can be used provided it can accommodate all of the required activities). After decontamination, the Contractor shall provide documentation to the Owner's Representative that the machine was properly decontaminated prior to removal of the machine out of any Work Area including all air testing results.

The Contractor acknowledges by submission of it's bid, that there are no guarantees made by the Owner that approval of floor tile machines will be granted and the Contractor reaffirms that if floor tile machines are not approved for use on this project, that manual scrapping methods will be used to complete the project in accordance with the Specifications at no additional cost to the Owner.

25. **Removal Procedures:**

The Contractor shall remove all layers to expose all asbestos-containing materials and abate. The Contractor shall remove ceilings and non-bearing walls necessary to access asbestos materials and to perform asbestos abatement work. All waste shall be thoroughly wetted and double-bagged in 6-mil poly bags and goose-necked or thoroughly wetted and wrapped in double-layers of 6-mil poly for proper disposal. All asbestos-containing, contaminated materials, trash and debris shall be properly

COMPLIANCE ENVIRONMENTAL, INC.

handled, stored, transported and disposed by the Contractor in accordance with all Federal, State, and local laws, regulations, ordinances, guidelines, and the requirements of this Specification. Fiber and/or metal drums may be used. The Contractor shall provide at it's cost, all labor, subcontractors, vendors, materials and equipment to complete the work.

- (i). **Floor Coverings, Mastics and Glues:** Asbestos-containing floor coverings of varying sizes including mastics, glues, floor tiles and sheet flooring and may extend under lockers, built-out wood sheeting, drywall, wooden panels, concrete floor or concrete pads must be abated. Remove all non-asbestos materials and articles to access the asbestos for abatement. Remove all asbestos-containing materials down to the lowest non-asbestos substrate. Floor coverings are single and multiple layers at various locations. Some locations contain asbestos-containing carpet glue. Remove carpet to access asbestos materials to abate. Remove and dispose of vinyl cove base to access mastic. Remove all built-in shelving, furniture, non-load bearing walls, lockers and any other article to access break-in locations. Remove locker pads and equipment pads to access floor coverings, mastics and glues. Remove concrete floors and concrete pads to access floor coverings, mastics and glues. Non-asbestos contaminated articles removed can remain in the building for disposal by others. Remove all layers to expose asbestos materials and abate. Remove all floor coverings, mastic and glues down to the concrete floor within the limits of disturbance shown on the drawings within the work areas using the method as specified. Remove all identified and assumed asbestos-containing materials. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on walls and ceilings. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes. **The use of floor tile machines are allowed on this project**

at the discretion of the Contractor and if the Contractor can demonstrate after bidding and prior to the start of the work, that proper usage and effective decontamination procedures will be used by the Contractor in accordance with this Section. Prior approval before floor tile machine usage must be obtained from OMB/DFM and the Owner's representative. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.

- (ii). **Ceramic Tile and Cove Base Mastic:** Asbestos-containing ceramic tile mastic and ceramic cove base mastic is present at various locations. Remove all non-asbestos materials and articles to access the asbestos for abatement. Remove and dispose of all asbestos-containing ceramic tile mastic and cove base mastic down to the lowest non-asbestos-containing substrate including, but not limited to, concrete and block. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on walls and ceilings. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.
- (iii). **Ductwork Caulk and Mastic:** Asbestos-containing caulk and mastic is located at some ductwork locations. Some materials extend above ceilings. Remove ceilings and all layers to expose asbestos and abate. Remove all non-asbestos materials and articles to access the asbestos for abatement. The finished surface shall be smooth, and asbestos free clean surface. Install a

three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on walls and ceilings. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.

- (iv). **Pipe Insulation Coverings:** Asbestos-containing pipe coverings including insulation and fittings. Pipe coverings are vertical and horizontal. Some locations are elevated above the floor elevation. Locations may exist throughout the building including at inaccessible locations including, but not limited to, behind cabinets, under the stage and within walls, floors, and ceilings. Remove all non-asbestos materials and articles to access the asbestos for abatement. Remove all identified and assumed asbestos-containing materials. Remove all layers to expose asbestos-containing materials and abate. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on walls, ceilings and floors as applicable. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The

Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. **Manually scrape pipe coverings. Wrap and cutting of pipework for disposal is not allowed.** The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes. All waste shall be thoroughly wetted and double-bagged in 6-mil poly bags and goose-necked or thoroughly wetted and wrapped in double-layers of 6-mil poly for proper disposal. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.

- (v). **Drywall:** The Contractor shall expose and abate all asbestos-containing drywall. Remove all non-asbestos materials and articles to access the asbestos for abatement. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on ceilings and floors. For ceiling abatements, install plastic sheeting on walls and floors. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.

- (vi). **Cement Panels:** Asbestos-containing cement panels are located at welding tables. Remove all non-asbestos materials and articles to access the asbestos for abatement. Remove all identified and assumed asbestos-containing materials. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on ceilings, walls and floors. Establish and maintain at all times a pressure differential of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.
- (vii). **Wall Adhesives and Glue Dots:** Wall adhesives and glue dots are located behind walls and some dry erase and chalkboards in classrooms. Remove all non-asbestos materials and articles to access the asbestos for abatement. The Contractor shall remove drywall, dry erase chalkboards and all other material layers required to gain access to materials for complete abatement. Remove all identified and assumed asbestos-containing materials. Remove all layers to expose asbestos-containing materials and abate. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials for each work area. The finished surface shall be smooth, and asbestos free clean surface. Install a three-stage decontamination unit, with a shower, at the entrance to the work area containments. The decontamination units shall be installed in such a manner as to allow for separate equipment room/bag-out off to the side. **In No Instance Will the Personal Decontamination Unit Be Used for Bag-out or Equipment Passage.** Install and operate HEPA filtered air filtration devices. Pre-clean any areas needing critical barriers, and install critical barriers. All work areas shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and two (2) layers of 6-mil plastic sheeting on ceilings and floors. Establish and maintain at all times a pressure differential

of minus 0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recorder shall be checked several times daily by the Contractor. The Contractor shall supply a calibrated differential pressure manometer capable of monitoring and recording on a strip chart and measuring differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system which will sound a warning if the pressure rises above the minimum value. All strips charts will be submitted to the Owner's Representative at the completion of the project. **Work will not begin or continue until an adequate differential pressure is achieved and maintained.** Once negative air is established, the Contractor may start the removal work. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and this specification for more information.

- (viii). **Fume Hood:** The Contractor shall remove and dispose of all asbestos-containing fume hoods. Remove all non-asbestos materials and articles to access the asbestos for abatement. The Contractor shall dismantle the fume hood wrapping and disposal. Wrap the fume hood with two separate layers of 6-mil plastic sheeting and seal. Perform the work using amended water and place water inside the wrap. Wrap in a manner to retain liquid inside the wrapping. Affix all required labels and properly handle and dispose as asbestos-containing waste.
- (ix). **Break-Ins:** Break-ins are required to located pipe coverings, heat shields and flooring materials at inaccessible locations within walls, floors, ceilings which include all locations at water sources. Remove all non-asbestos materials and articles to access the asbestos for abatement. Remove all built-in shelving, furniture, non-load bearing walls, lockers and any other article to access break-in locations. Non-asbestos contaminated articles removed can remain in the building for disposal by others. Each location may require several break-ins. Break-in points require opening up floors, walls, and ceilings at each location. Plumbing pipe insulation, fittings, asbestos heat shields, flooring materials and other asbestos-containing materials may be located inside floors and walls. Wall, ceiling and floor substrates vary throughout building. Each location shown on the drawings may require multiple break in points and may contain multiple asbestos-containing materials. Remove all layers to expose asbestos-containing materials and abate. Prior to any break-in, the Contractor shall construct a mini-containment and be prepared to abatement any asbestos-containing materials found at each location. If asbestos-containing materials are found, the Contractor shall immediately abate the material. See other sections of this specification for specific abatement requirements for the asbestos-containing material found within the break-in. The Contractor shall include in its bid the cost of this work for the number of break-in locations and assumed asbestos-containing material quantities located on the tables within this specification.

- (x). **Sink Undercoatings:** The sinks shall be removed, bagged, and properly disposed as asbestos-containing waste. **Prior to removal, the Contractor shall verify that water to the sink has been shut-off and purged.** Remove all non-asbestos materials and articles to access the asbestos for abatement. If not performing the work in an existing containment, install containments, negative air controls and decontamination units as specified. Build a containment consisting of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on ceilings, walls and floor. Layers shall be applied separately by the Contractor with varying tape lines. Install negative air controls and decontamination units as specified. Once negative air is established, the Contractor may start removing the sink undercoatings if gross removal will be used. The Contractor may use wrap and take procedures in lieu of gross removal. All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and other specification sections for more information.
- (xi). **Interior and Exterior Materials Including Roofing Materials, Caulks, Glazings, Mastics, Tar Coatings Roof Coating, Asphalt Rolled Roofing, and Flashing Tar:** Perform exterior tasks including roofing materials abatement as last task when completing the work in each section. Materials may be horizontal or vertical. Remove all non-asbestos materials and articles to access the asbestos for abatement. Some locations are covered with wood or concrete. Some locations contain remnants of past removal and need to be completely abated. Remove all layers to expose asbestos-containing materials and abate. All interior work shall follow the requirements for signage, preparation, critical barriers, full containments, negative air controls, decontamination, proper waste handling and disposal and all other requirements. Interior work procedures shall use critical barriers, full containment, amended water and decontamination. Exterior work shall follow procedures including signage, drop cloth, barrier tape, decontamination, proper waste handling and disposal and all other requirements. All roof sections are elevated and the Contractor shall follow OSHA regulations for working at these locations. The Contractor shall directly coordinate its daily work schedule with the roofing contractor and modify its work practices when necessary to ensure no stormwater or moisture damage to the building during the work period. The Contractor shall follow the general and specific requirements for removal of asbestos-containing materials removal provided in this specification. The Contractor shall completely remove all layers of materials to access and abate asbestos-containing materials. Any non-asbestos-containing or Non-asbestos contaminated materials needed to be removed by the Contractor to expose asbestos materials shall be properly disposed by the Contractor. The finished surface shall be smooth and allow the installation of new roofing materials. Roof areas and mechanical equipment contain multiple layers and varying types of roof materials, mastics, coatings, caulks, and flashing tar. The Contractor shall use proper means, methods and work practices to

prevent asbestos fragments and contaminated dusts from falling below work areas. Asbestos-containing materials shall be removed from building materials to the best extent possible. The Contractor is responsible for proper handling, labeling, storage, transporting and disposal of all wastes in accordance with all Federal, State, and local laws, regulations, ordinances, guidelines, and the requirements of the specification and this document. Safety of project workers, building occupants, and property users must be given priority for all activities. The Contractor shall ensure at all times that the condition of work areas and access to work areas do not contain hazards. The Contractor shall comply with all Federal, State and local laws, regulations, ordinances, and guidelines including, but not limited to, EPA, OSHA, and the State of Delaware. It is the Contractor's responsibility to ensure that all appropriate laws, regulations, ordinances, and guidelines are implemented at all times during the work. Prior and during removal of exterior roof materials, the Contractor shall deploy and maintain a suitable drop cloth at ground elevation next to all work areas extending at least 15 linear feet outward to collect any fallen materials during removal. Additionally, the Contractor shall deploy and maintain barrier tape and signage at the perimeter of all work areas. Barrier tape shall extend at least 15 linear feet outward and be deployed and maintained in a condition sufficient to restrict access. Signs shall state "Caution, Overhead Work" and shall extend at least 15 linear feet outward. The Contractor shall remove all asbestos-containing roofing materials to a condition whereby the final substrate is smooth and free of any roofing material. The Contractor is responsible for any or all damages caused by him. During the abatement, the Contractor shall protect the building from stormwater and moisture damage and all building features in and around the work area. Materials shall be adequately wetted with amended water by the Contractor during all removal work to prevent visible emissions. Dry removal of asbestos-containing materials is not allowed. Care shall be taken by the Contractor considering the right amount of water required not to create leaking conditions or hazards to the work area or surrounding area. The Building Owner shall provide limited water service for the Contractor's use during the work. The Contractor shall ensure that proper back-flow protection at all sources of water are installed and maintained. The Contractor shall place a fire extinguisher and have a first aid kit at each work area. The minimum respiratory protection shall be full-face PAPR's for all workers. Additionally, as a minimum, all workers shall don double personal protective suits. Respiratory protection and personal protective equipment shall be worn by all workers during all steps of the work including, but not limited to, setup, removal, placing of waste into dumpsters or containers, final cleaning and tear down. A remote three-stage decontamination unit with a shower shall be provided and used by the Contractor during the work. As a minimum, all workers shall shower at the end of each shift. The Contractor shall ensure the integrity of all decontamination facilities. All decontamination procedures shall be strictly implemented by the Contractor. All roofing materials shall be thoroughly wetted. Final inspection shall consist of a visual inspection. No final air clearance samples will be required in work areas. See Section 01013, 02081 and other sections of this specification for more information.

COMPLIANCE ENVIRONMENTAL, INC.

- (xii). **Valves and Gaskets:** The Contractor shall dismantle pipework to abate all valve and flange gaskets in the boiler room, in walls and above ceilings. Remove all non-asbestos materials and articles to access the asbestos for abatement. Asbestos-containing piping valve, fitting and equipment gaskets shall be removed, bagged, and properly dispose. **Prior to removal, the Contractor shall verify that all utilities have been shut-off and purged.** Prior to disturbing asbestos-containing materials, the Contractor shall install containments, negative air controls and decontamination units as specified. The work area shall consist of two (2) layers of 6-mil plastic sheeting as critical barriers and one (1) layer of 6-mil plastic sheeting on ceilings, walls and floors. Layers shall be applied separately by the Contractor with varying tape lines. Once negative air is established, the Contractor may start removal. **Manually scrape valve gaskets. Wrap and cutting of pipework and valves with gaskets for disposal is not allowed.** All waste shall be handled, labeled and disposed as specified. Final inspection shall consist of a visual inspection and air sampling. All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by PCM. See Sections 01529, 02081, 02087 and other specification sections for more information.
- (xiii). **Boilers:** The Contractor shall dismantle the (2) Weil McLain rib type boilers and the (2) Kewanee fire tube type boilers located in the boiler rooms to the extent for complete removal and disposal of the rope gaskets and dismantlement for possible internal asbestos-containing materials. Remove all non-asbestos materials and articles to access the asbestos for abatement. The boilers shall be opened for an internal inspection to locate asbestos-containing materials. If asbestos is found, the Contractor shall abate. The Contractor shall remove and dispose of all asbestos-containing materials from the boilers. After completely disassembling the boilers, the Contractor shall leave all non-asbestos-containing materials within the work area for safe disposal as non-contaminated debris by Others. During the boiler disassembly process, the Contractor shall remove, as a minimum, all packing, gaskets, rope, insulating boards, asbestos-containing cements and fillers, asbestos baffle tiles, brick and asbestos-containing castable refractory. The Contractor shall also remove all asbestos-contaminated debris from the boiler room. The Contractor shall determine the proper sequence of asbestos abatement activities at the boiler. The following items shall be considered by the Contractor and are not provided in sequential order:
- a. Install a three-stage decontamination unit, with a shower, at the entrance to the boiler room containment area. The decontamination unit will be installed in such a manner as to allow for a separate equipment room/bag-out off to the side. In no instance will the personal decontamination be used as a bag-out/equipment passage. Install and run HEPA filtered negative air machines throughout containment preparation. Pre-clean any areas needing critical barriers. Install critical barriers and seal all penetrations with two (2) layers of 6-mil polyethylene.

COMPLIANCE ENVIRONMENTAL, INC.

- b. The work area containment shall consist of two layers of critical barriers and two layers of fire retardant 6-mil poly on the walls and floors, and one layer of poly on the ceiling. The contractor will ensure that all floor drains are sealed.
- c. Establish and maintain a pressure differential of -0.02 inches of water measured on a strip chart recorder or other approved method. The pressure differential recording device will be checked several times daily by the Owner's Representative. The Contractor shall supply a differential pressure manometer that is capable of monitoring and recording on a strip chart, differential pressure of 0.005 inches of water. The manometer shall be equipped with an automatically activated alarm system, which will sound a warning if the pressure drops below the preset value. All strip charts will be turned into the Owner's Representative at the completion of the project. Work will not begin or continue until an adequate differential pressure is achieved and maintained. Windows used to exhaust the negative air will be protected with plywood if the windows are located at ground level or below. The pressure differential recorder shall be checked several times daily by the Contractor. HEPA filtered local exhaust systems will be used to establish air flow through the contained work areas and maintained until final analytical clearance has been determined. The systems will be vented to the exterior of the buildings through the use of non-collapsible venting attachments.
- d. All electric power shall be shut down in the work area that is possible. Provide temporary power to the work area in accordance with section 01503. Temporary electrical utilities will be supplied by the Owner.
- e. The Contractor shall ensure that for all water sources proper back-flow protection at hook-ups from sources of water. Hot water heater will be supplied by the Contractor (see Section 01513).
- f. The Contractor must ensure at all times the integrity of the enclosures and decontamination facilities. Inspection windows are required for each enclosure (see Section 01526).
- g. All asbestos-containing material shall be wetted with amended water during abatement. Dry removal of asbestos will not be allowed.
- h. All workers must have their current State of Delaware Asbestos Worker Badge as well as a copy of their current medical information in order to work at the project site (this includes set up and tear down, no exceptions).
- i. The Contractor shall place a fire extinguisher and have a first aid kit at each containment. An additional fire extinguisher shall be provided by the Contractor where containments exceed 1,000 square

feet.

- j. The Contractor will provide extra, new respirators, disposable overalls, head covers, and footwear covers for use by authorized visitors. All decontamination procedures are to be strictly adhered to. A signed copy of the Workers Acknowledgment must be obtained from each worker (see Section 01560).
 - k. Three stage decontamination units are required for each work area except for those areas approved for "glove-bag" work. An equipment decontamination unit consisting of the following arrangement of rooms, Clean Room, Holding Room, Wash Room for the removal of equipment and material from the Work Area, is required. Personnel are not to enter or exit the Work Area through the Equipment Decontamination Unit (see Section 01563).
 - l. Remove all interior and exterior insulations, if applicable. Follow proper gross removal procedures. Once all removal is complete, fine clean the area prior to encapsulation and final clearances.
 - m. PAPRs will be used for set up, removal, final cleaning and tear down. If any friable materials are discovered during boiler demolition, the Contractor may be required upgrade to Type C, Grade D respirators operated in pressure demand mode at no additional charge to the Owner if the fiber counts reach the Permissible Exposure Limit (PEL) at any time.
 - n. Final inspection shall consist of a visual inspection and air sampling. Daily air samples will be by Phase Contrast Microscopy (PCM). Final air clearance samples will be by PCM.
 - o. The Contractor shall be responsible for the proper disposal of all asbestos and non-asbestos boiler materials associated with the abatement project. All asbestos-containing materials shall be properly disposed by the Contractor as contaminated waste in accordance with all Federal, State, and local laws, regulations, ordinances, guidelines, and the requirements of this Specification. All non-asbestos-containing materials and non-asbestos contaminated material can remain on site at a location approved by the Owner's Representative.
- (xiv). **Mercury Containing Flexible Floor in the Gymnasium:** The Contractor shall complete the removal down to the concrete or metal subfloor, handle and disposal of all flexible flooring in the Gymnasium following all OSHA, DOT, EPA and Delaware requirements. This work shall be performed in Phase I. The condition of the floor after removal shall be smooth and free of all visible flooring materials including all adhesives and flex floor materials. Remove all non-asbestos materials and articles to access the asbestos for abatement. Laboratory testing of the floor indicates that the material is a hazardous waste. No asbestos-containing materials were found at the

Gymnasium floor. The Contractor shall not subcontract this work unless written on the subcontractor list within the bid form without written permission of the Owner. The Owner will remove all bleacher seating and supports to access and remove flooring. Based upon sample test cores, the thickness of the flexible floor varies from approximately 0.75-inch to 2.5-inches. The approximate area of the floor is 10,500-square feet. The Contractor is responsible for proper characterization, profiling of the waste and proper transport and waste disposal. The Contractor shall use the waste disposal facility and transporter written on the bid form without substitution. All workers shall have current 40-hour hazmat training with supervisors having all required additional current training. The work shall be performed using negative air containments, critical barriers, decontamination facilities and all other regulatory requirements. All materials to construct containments, decontamination facilities and critical barriers and do the work shall be handled and disposed by the Contractor as Mercury contaminated waste. All liquid and solid wastes generated during the work shall be handled and disposed off site by the Contractor as Mercury contaminated waste using the facility and transporter listed on the bid form. Prior to any waste removed from containments, the waste must be sealed using double layer 6-mil polyethylene plastic sheeting. The Contractor can use, double lined drums, double lined gaylord boxes or double lined bags. **Prior to the start of the work, the Contractor shall submit for review, details of the work including, but not limited to, work flow, negative air containments, the amount of air changes per hour, negative air machine filter details, personal protective equipment, dust suppression and decontamination procedures for workers and equipment. Additionally, a work plan with the exclusion zone, contamination reduction zone and support zone details, work procedures and schedule must be submitted for review prior to starting the work.** The waste disposal facility used by the Contractor shall be licenced and approved to dispose of Mercury hazardous waste. Prior to the removal of any material, negative air containments and critical barriers shall be constructed by the Contractor and all other requirements included in the work plan. After Mercury material removal is complete and prior to removal of negative air containments, critical barriers and all other protective measures, the Owner's Representative will perform air testing at no cost to the Contractor to determine if residual Mercury is found in the air. If Mercury is found in any air sample at or over the laboratory reporting limit, the Contractor shall perform the necessary work to mitigate the condition. Re-testing of the space will be performed after the Contractor says they have completed the mitigation.

26. **Abatement Activities:** All abatement of asbestos containing materials shall be performed in a proper wetted condition using amended water. Dry removal of asbestos containing materials is not permitted. See Section 01527 and 02081 for more information. Remove all non-asbestos materials and articles to access the asbestos for abatement. The Contractor shall take the necessary precautions to protect all computer, fiber optic and electronic equipment including building sensors from damage during the Contractor's activities and also including, but not limited to, walls, ceilings, floors outside work areas, doors, thresholds, and fixed objects within work area(s). Any damaged painted surfaces shall be repaired at the Contractor's

COMPLIANCE ENVIRONMENTAL, INC.

expense. The Owner has a zero tolerance for drugs, alcohol, tobacco products and weapons. The use or possession of drugs, tobacco products, weapons, firearms, dangerous devices, or destructive devices are prohibited and will not be tolerated at buildings or properties. Additionally, the use of vulgar language will not be tolerated on school grounds.

27. Three (3) stage decontamination stations (units) will be erected, operated, maintained, and removed by the Contractor. The decontamination stations will be erected in such a manner to allow for a secured entrance during non-working hours. At no time will workers move around outside of the work area without clothing. At no time will equipment be moved out of containment decontamination. The equipment/bag-out room must be used for equipment movements. **Only new single use pop-up decontamination units will be allowed on site and must be disposed with the waste from this project. A pop-up can be used more-than once on a single project at the discretion of the Project Monitor.** See Section 01563 for more information.
28. **Bag-Out:** Bag-out activities shall be performed by the Contractor prior to the end of the work day. All waste must be removed from work areas prior to the end of the work day. At no time will the workers be allowed to move around outside of the building in abatement coveralls with exception to bag-out activities, which will occur during approved hours each day. All bags shall be leak-proof and have a “goose-neck” seal and labeling. See Section 01527 for more information.
29. **Air Sampling (if applicable):** All daily air sampling will be laboratory analyzed by Phase Contrast Microscopy (PCM) methods unless the Owner or State Agency requires other methods. Final air clearance samples will be by visual inspection and PCM. See Section 02081 and this specification for more information.
30. **Aggressive Air Sampling (if applicable):** The Contractor shall provide, at no additional cost to the Owner, the leaf blower(s) and fan(s) required by the Owner’s Representative to perform proper aggressive air sampling.
31. **Lock-Down (if applicable):** All non-visible asbestos residue shall be encapsulated with a coating of penetrating encapsulant applied in strict accordance with the manufacturer’s directions. The Contractor shall schedule the application of lock-down with the Owner’s Representative prior to application. See Section 01527 for more information.
32. **Use of Drawings:** All drawings provided in the Specification are diagrammatic, not to proportion and are not to scale. Drawings are provided to the Contractor for reference purposes. The Contractor shall develop and verify the actual quantities and locations required for all of the work and consider these actual quantities when preparing its bid.
33. **Work Areas adjacent to Occupied Areas (if applicable):** When asbestos abatement work areas are adjacent to occupied areas, the Contractor shall install and maintain sealed wooden barriers which extend from floor to ceiling with signage and lockable access doors to prevent occupants from entering into work areas.

COMPLIANCE ENVIRONMENTAL, INC.

34. **Scaffolding, Lifts and Ladders:** If scaffolding is used, the Contractor must erect, use, and disassemble the scaffolding in accordance with OSHA Standards. Additionally, all lifts and ladders shall meet and be used in accordance with OSHA Standards. The Contractor shall insure that floors and all other building components are protected during the use of scaffolding, lifts and ladders. The Contractor shall use only trained personnel when using scaffolding, lifts and ladders.
35. **Exhaust from Negative Air Machines:** Windows, doors or other building openings used to exhaust negative air shall be protected by the Contractor by installing plywood and bracing if the opening is located on the first floor or below. The plywood and bracing shall be installed in a manner by the Contractor that prevents damage to the building components and prevents unauthorized access into the building.
36. **Objects in the Work Area:** Objects in the work area not removed by the Owner shall be moved by the Contractor to a location outside of the work area. Objects can stay in the building for disposal by others.
37. **Electric Power:** The Owner will provide an electrical hookup for the project except if the electrical system is modified by the Contractor or turned off by the Contractor.
38. **Water Service:** The Owner will provide a standard hose bib for the project's water needs except if the water system is modified by the Contractor or turned off by the Contractor.
39. **Visitor Personal Protective Equipment:** The Contractor shall provide, at no additional cost to the Owner and their representatives, respirators, disposable coveralls, head covers, and foot covers all at new condition.
40. **Contractor Project Staffing:** A minimum of three (3) asbestos personnel are required to be present at the project site at all times. The Contractor's on-site supervisor must be able to make timely decisions for this company and must be on-site at all times. **Prior to any site activity, the Contractor shall submit the name and address of each supervisor, worker and any other person he intends to use at the project site for informational screening (e.g. registered sex offenders list and other lists) by the Owner. The Contractor shall be notified by the Owner if their personnel will be allowed to work at the project site based upon the results of the screening. The School District reserves the right to reject any proposed Contractor personnel for this project.** (Section 01043)
41. **Personnel Clothing Requirement:** At no time will the Contractor's employees expose bare skin or remove any articles of clothing in clear sight of building occupants or users inside or outside of the building and on the property except at work area designated hygiene shower out locations.
42. **Project Supervisor:** During all asbestos abatement work, a State of Delaware licensed Supervisor, employed by the Contractor, shall be on site at all times. The licensed Supervisor shall maintain all daily records as required.
43. **Project Monitor Must Be On-Site:** The Contractor shall not begin or continue

COMPLIANCE ENVIRONMENTAL, INC.

work for any asbestos abatement related activities until a certified Project Monitor is resident on site. The Project Monitor must be on site at all times during asbestos abatement related activities. The Contractor shall provide adequate notice to the Professional Service Firm providing the Project Monitor. Adequate notice is the period of time agreed to by the Contractor and Professional Service Firm.

- 44. **Damage Repair:** The Contractor shall repair or replace, at his own expense, any damage occurring from his activities for items the Owner desires to save prior to demolition or any building component. Any damaged items will be replaced or paid for by the Contractor prior to receipt of final contract payment.
 - 45. **Stop Work:** If the Owner, or the Owner's Representative presents a written stop work order to the Contractor, the Contractor shall immediately stop all work in a fashion not to create an asbestos exposure hazard to workers, building occupants, or others. See this Section for more information.
 - 46. **Building and Property Usage:** The contractor shall not unreasonably encumber the site with materials or equipment and may be required to share the project site with others. Stockpile of materials at locations after approved by the Owner's Representative. If additional off-site storage is needed by the Contractor, the off-site storage will be provided by the Contractor at no additional cost to the Owner. Smoking or open fires will not be permitted within the building. Alcoholic beverages and non-prescription drugs use is prohibited within buildings or on the property. No permanent modifications shall be made to any building component, sidewalk, parking area, signage, or any other appurtenances without expressed written permission from the Owner. See this Section for more information.
 - 47. **Break-Ins:** The location of break-ins are assumed. Break-in points require opening up floors, walls, and ceilings at each location. Pipe coverings and heat shields may be located inside of equipment, inside floors, above ceilings and inside walls. Wall substrate varies throughout building. Each location shown on the drawings may require multiple break points. Asbestos-containing materials may or may not be present within spaces. Symbols on the drawings represent several locations in area which require break-ins.
- E. **Single Prime Contract:** The Work will be constructed under a single prime contract. The Contractor shall not sublet this contract without expressed written permission from the Owner.
 - F. **Pre-abatement assessment:** A comprehensive pre-abatement assessment will be completed by the Contractor, Owner's Representative, and any other individual authorized by the Owner. An agreed list of damage to structures, surfaces, equipment shall be developed and agreed upon prior to the commencement of work by the Contractor.
 - G. **Contaminated Areas:** Any areas found to be contaminated in the opinion of the Owner's Representative or Owner after the removal of asbestos containing material shall be decontaminated using a combination of HEPA vacuum and wet cleaning techniques by the Contractor at no additional expense to the Owner.

COMPLIANCE ENVIRONMENTAL, INC.

- H. Plan of Action:** The Contractor shall submit a detailed plan of action which details proposed procedures used for complying with all of the requirements of this specification. Included in the plan shall be the location and layout of decontamination areas, the sequence of asbestos work, the interface of all trades, methods used to ensure safety of the workers, building occupants, and visitors to the site, and a detailed description of methods that will be used to control pollution.
- I. Potential Asbestos Hazard:** The disturbance of asbestos-containing materials may cause asbestos fibers to be released into the building and/or exterior atmosphere thereby creating a potential health hazard to workers, building occupants, and others. The Contractor shall inform all workers, supervisors, subcontractors, and Owner's Representatives who will be at the project site of the seriousness of the hazard and of proper work procedures which must be followed. The Contractor shall, continuously and at all times, take the measures necessary including, but not limited to, procedures, work practices, and methods, to ensure complete compliance with federal, state, and local regulations and eliminate the potential for asbestos exposure.
- J. Site Safety:** The Contractor shall at all times comply with all applicable federal, state and local, laws and regulations, including environmental, health and safety laws and regulations, pertaining to its services. The Contractor represents it is familiar with all aspects of the job site (including but not limited to site conditions and site access limitations) and hazards associated with asbestos removal and abatement. The Contractor shall be solely responsible for the safety of its personnel, subcontractors or any third party in its work areas or common areas and Contractor hereby releases and indemnifies Client and Owner's Representative from any and all claims brought by, or on behalf of itself, its employees or its subcontractors arising out of or in connection with its Contractor's services or presence at the job site. Prior to the start of daily work, and at the conclusion of each day, the Contractor shall visually inspect his work areas and all areas required to access his work areas. Any unsafe conditions found during any inspection shall be reported to the Owner's Representative immediately in writing subsequent to each inspection. The report provided by the Contractor to the Owner's Representative shall adequately describe the unsafe condition and the procedures the Contractor has immediately taken to correct the unsafe condition. The Contractor shall promptly report any and all accidents to the Owner's Representative in writing, and shall include sufficient details regarding the accident and procedures implemented by the Contractor to prevent similar accidents. The Contractor shall be responsible for reporting accidents to the appropriate regulating agency as may be required by applicable law or regulation.
- K. Specification Sections:** The work includes the removal of asbestos-containing materials according to the requirements provided in this specification and included in the specification sections listed on the Table of Contents.

1.3 WORK SEQUENCE

- A. The Work** will be conducted in distinct phases at each abatement location.

 - 1. Each work phase shall consist of pre-cleaning, establishing of work areas, installation of engineering controls, abatement, post abatement inspection and sampling.

COMPLIANCE ENVIRONMENTAL, INC.

2. The following inspections will be performed by the Contractor and Owner's Representative simultaneously for project activities:
 - a. Pre-Cleaning: A visual inspection of all pre-cleaned surface areas. This inspection will occur prior to the installation of polyethylene sheeting on walls, floors, and other surfaces. Decontamination units must be operable and critical barriers installed prior to pre-cleaning activities.
 - b. Work Area: Work areas will be visually inspected each day prior to the start of work activities and upon work completion each day to insure that the integrity of the containment is in compliance with these specifications. This inspection does not relieve the Contractor of their responsibilities of performing the work in accordance with these specifications.
 - c. Post Abatement: A visual inspection of each work area will be performed following successful clearance air sampling and prior to commencing containment tear-down.
 - d. Substantial Completion: After completion of all applicable demolition, reinstallation, cleaning, and all other asbestos abatement activities, a final inspection will be performed after final cleaning of all work areas prior to re-occupancy of said areas by the Owner.

1.4 ASBESTOS-CONTAINING MATERIALS:

- A. **The Work** of this contract involves activities that will disturb asbestos-containing materials (ACM). The location and type of ACM known to be present at the worksite is set forth in the "Schedule of Asbestos-Containing Materials" at the end of this section. If any other ACM is found, notify the Owner's Representative, other employers and employees about the location and quantity of the ACM immediately upon discovery.
- B. Asbestos containing building materials are known to be present at the project site. If the Contractor finds any other material which are suspected of containing asbestos, the Contractor shall immediately notify the Owner's Representative. See the attached Table 1. for a summary of confirmed asbestos-containing materials at the site.

1.5 ASBESTOS HEALTH RISK:

- A. The disturbance or dislocation of ACM may cause asbestos fibers to be released into the buildings atmosphere, thereby creating a potential health risk to workers and building occupants. The Contractor shall inform all workers, supervisory personnel, subcontractors and Owner's Representatives who will be at the job site of the seriousness of the risk and of proper work procedures which must and will be followed.
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or Owner's Representatives may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect all building occupants from the risk of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

COMPLIANCE ENVIRONMENTAL, INC.

1.6 CONTRACTOR USE OF PREMISES

- A. Use of the Site:** Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
- 1. Owner Occupancy:** Allow for Owner occupancy and use by the public.
 - 2. Driveways and Entrances:** Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Use of the Existing Building:** Maintain the existing building in a weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
- 1. Use of Existing Elevators (if applicable):** Except for the Freight Elevator, use of elevators by the Contractor will not be permitted. The Contractor will be permitted to use the freight elevator for temporary freight service and the transportation of construction personnel during the construction period. This elevator must also be available to the Owner at all times; coordinate freight elevator usage with the Owner or Owner's Representative. Provide protective pads for the elevator car and other appropriate protective measures for the car and entrance doors and frames. During asbestos abatement activities the car is to be protected as set forth in the Division 1 Section on Temporary Enclosures.
 - 2. Smoking:** Smoking or open fires will not be permitted within the building enclosure or on the premises.
 - 3. Toilet Rooms (if applicable):** Except for toilet rooms designated for use by the Contractor's personnel, use of existing toilets within the building, by the Contractor's personnel, will not be permitted.

1.7 OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy:** The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
- 1.** The Owner or Owner's Representative will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.

COMPLIANCE ENVIRONMENTAL, INC.

1.8 AIR MONITORING BY THE OWNER

- A. The Owner has contracted for air monitoring.** Air monitoring may be conducted both outside and inside of the work area during the work, and for clearance sampling at the end of the project
- 1. Outside of the Work Area:** The Owner's air monitoring firm may sample air outside of the work area to detect faults in the work area isolation such as:
 - a. Contamination of the building outside of the work area with airborne asbestos fibers,
 - b. Failure of filtration or rupture in the differential pressure system,
 - c. Contamination of air outside the building envelop with airborne asbestos fibers.
 - 2. Inside the Work Area:** The Owner's air monitoring firm may monitor airborne fiber counts in the Work Area. The purpose of this air monitoring is to detect airborne asbestos concentrations which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.
- B. Work area clearance:** Clearance air sampling by the Owner's air monitor at the completion of asbestos abatement work is described in Section 01711 Project Decontamination.
- C. Air monitoring** required by OSHA is work of the Contractor and is not covered in this section

1.9 SCHEDULE OF AIR SAMPLES BY OWNER

- A. Sample cassettes:** Samples will be collected on 25 mm. cassettes as follows:
- 1. PCM:** 0.8 micrometer mixed cellulose ester.
 - 2. TEM (if required):** 0.45 micrometer mixed cellulose ester or 0.40 micrometer polycarbonate, with 5.0 micron mixed cellulose ester backing filter.
- B. Number and Volume of Samples:** The number and volume of air samples given in the schedules is approximate. The exact number and volume of samples collected by the Owner may vary depending upon job conditions and the analytical method used.

COMPLIANCE ENVIRONMENTAL, INC.

C. Sample Volume and Sensitivity:

1. **PCM:** The sample volumes collected by the Owner's air monitor will be determined by the following formula:

$$\text{Volume} = \frac{\left(\frac{\text{Number of Fibers}}{\text{Area of 100 fields}} \right) \times \text{Total Filter Area}}{\left(\frac{\text{Limit Value}}{4} \right)}$$

Where:

Number of fibers	=	5 fibers/100 fields, based on a limit of detection (LOD) of 7 fibers/mm ² on the filter
Area of 100 fields	=	0.785mm ²
Total Filter Area	=	385mm ²
Limit Value	=	as specified in the schedules of samples below.

- a. For purposes of this specification, the sample volume calculated above will be considered to be of sufficient size so that there is a 95% level of confidence that the value measured by each individual sample at the limit of detection (LOD) is less than or equal to the limit values specified below.
 - b. For purposes of this specification, the Limit of Detection (LOD) is defined as 7 fibers/mm² on the filter or 5 fibers/100 fields.
 - c. For purposes of this specification overloaded samples will be considered as exceeding the applicable limit value.
2. **TEM:** Analytical Sensitivity of 0.05 structures/cc as set forth in the AHERA regulation.

D. Baseline:

1. **Before Start of Work:** The Owner will secure air samples to establish a baseline.

COMPLIANCE ENVIRONMENTAL, INC.

2. PCM Samples

Location Sampled	Number of Samples	Limit Value (Fibers/cc)	Approx. Rate Volume (Liters/ Minute)
Each Work Area	5	0.01	1,000
Outside Each Work Area	5	0.01	1,000
Outside Building	5	0.01	1,000

3. TEM Samples:

Location Sampled	Number of Samples	Analytical Sensitivity (Struct./cc.)	Approx. Rate Volume (Liters/ Minute)
Each Work Area	1	0.005	1,300
Outside Each Work Area	1	0.005	1,300
Outside Building	1	0.005	1,300

4. **Baseline:** a level expressed in fibers per cubic centimeter which is twenty-five percent greater than the largest of the following:

- Average of the PCM samples collected outside each Work Area.
- Average of the PCM samples collected outside the building.
- 0.01 fibers per cubic centimeter.

5. **Samples collected for TEM analysis** will be held without analysis. These samples will be analyzed under the conditions and terms set forth in "Fibers Counted" and "Affect On Contract Sum".

COMPLIANCE ENVIRONMENTAL, INC.

E. Daily:

1. **From start of work** of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Owner may take samples.
2. **Sample volume and sensitivity:** inside the work area may vary depending upon conditions in the work area. If samples are overloaded at the sample volume required for a limit value equal to the “Stop Action Levels” or “Immediate Stop Action Levels” given later in this section, the level is considered to have been exceeded.
3. **PCM Samples:**

Location Sampled		Number of Samples	Limit Value (Fibers/cc)	Approx. Rate Volume (LPM)
Each Work Area	2	0.01	1,000	1-10
Outside Each Work Area at Critical Barrier	1	0.01	1,000	1-10
Clean Room	1	0.01	1,000	1-10
Equipment Decon	1	0.01	1,000	1-10
Outside Building	1	0.01	1,000	1-10
Output of Pressure Differential System	1	0.01	1,000	1-10

- F. **Additional samples** may be taken at Owner or Owner’s Representative’s discretion. If airborne fiber counts exceed allowed limits additional samples may be taken as necessary to monitor fiber levels.

1.10 ANALYTICAL METHODS USED BY THE OWNER

- A. The following methods will be used by The Owner in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.
1. Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 method.
 2. Transmission Electron Microscopy (TEM) will be performed using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.

COMPLIANCE ENVIRONMENTAL, INC.

1.11 LABORATORY TESTING BY OWNER

- A. **The services of a testing laboratory** may be employed by the Owner or Owner's Representative to perform laboratory analyses of the air samples. Samples available for analysis will be sent daily by 5:00 pm from Dover via a carrier for next day delivery to the laboratory, so that verbal reports on air samples can be obtained within 24 hours after receipt by the laboratory.
- B. **A complete record** of all air monitoring and results will be furnished to the Owner's Representative, the Owner, and the Contractor.
- C. **The Contractor will have access** to all air monitoring tests and results upon request.
- D. **Written Reports** of all air monitoring tests will be posted at the job site on a daily basis.
- E. **Additional laboratory samples and professional services time required for re-sampling** of areas for clearance due to failed samples because of the Contractor's activities will be paid for by the Contractor.

1.12 FIBERS AND STRUCTURES

- A. **Fibers Counted:** The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.
 - 1. **Large Fibers:** "Airborne Fibers" referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission or scanning electron microscopy demonstrates to the satisfaction of the Owner or Owner's Representative that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by transmission electron microscopy shall be asbestos fibers, greater than 5 microns in length. For purposes of stop action levels, subsequent to analysis by electron microscopy, the number of "Airborne Fibers" shall be determined by multiplying the number of fibers, regardless of composition, counted by PCM by the proportion of fibers that are asbestos as determined by TEM (a number equal to, asbestos fibers counted, divided by all fibers counted in the electron microscopy analysis).
 - 2. **Small Structures:** "Airborne Fibers" referred to above include asbestos structures (fibers, bundles, clusters or matrices) of any diameter and any length greater than 0.5 microns.

1.13 ADDITIONAL TESTING

- A. **The Contractor may conduct** air monitoring and laboratory testing. If he elects to do this the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner. A NIOSH-582 certified microscopist will be on-site during the afternoon hours to provide analysis of available PCM samples by NIOSH Method 7400. Verbal report on air samples will be provided that day.

1.14 PERSONAL MONITORING

- A. **Owner will not perform** air monitoring for the Contractor to meet Contractor's OSHA requirements for personal sampling or any other purpose.

COMPLIANCE ENVIRONMENTAL, INC.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SITE WORKERS

- A. All workers and supervisors shall be currently certified by the State of Delaware and have their State of Delaware issue badge with them at all times while at the project site.
- B. All workers and supervisors shall have a copy of their current medical and respirator fit test documentation at all times while at the project site.
- C. The Contractor shall provide, at all times during any site activities, at least three (3) site workers which includes at least one (1) certified Supervisor and two (2) certified workers. The certified Supervisor shall remain on the outside of the work area as required.
- D. Prior to the start of work, the Contractor shall submit the level of respiratory protection intended for each operation of the project on the Initial Exposure Assessment form (See Section 01562).
- E. A signed copy of the Certificate of Workers Acknowledgement must be obtained from each site worker including supervisors prior to the start of work. (See Section 01530).

3.2 MINIMUM PERSONAL PROTECTION EQUIPMENT

- A. **All site workers engaged in asbestos abatement activities shall use, at all times and as a minimum, full face Powered Air Purifying Respirators (PAPR) respiratory protection equipment.** The Contractor shall perform the required OSHA worker and supervisor personal monitoring and personal air sampling. The Owner's Representative will not be performing personal monitoring and personal air sampling for this project.

3.3 STOP ACTION LEVELS

- A. **Inside Work Area:** Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify the Owner or Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Owner or Owner's Representative.

Table 1. Action Level and Stop Action Fiber Concentrations.

ACTION LEVEL (Max Exposure) (f/cc)	STOP LEVEL (f/cc)	RESPIRATOR	RESPIRATOR ASSIGNED PROTECTION FACTOR
1	0.5	Half Face	10
100	50	PAPR	1000
100	50	Supplied Air, Pressure Demand	1000

1. If airborne fiber counts inside contained work areas exceed the stop level for any period of time cease all work except corrective action until fiber counts fall below the stop level and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Owner or Owner's Representative.
2. The Contractor shall stop work immediately if any visual emissions are observed.

B. Outside Work Area: If any air sample taken outside of the Work Area exceeds the baseline established in Part 1 of this section, immediately and automatically stop all work except corrective action. The Owner or Owner's Representative will determine the source of the high reading and so notify the Contractor in writing.

1. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:
 - a. Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).
 - b. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.
 - c. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 01711 Project Decontamination.
 - d. Leave Critical Barriers in place until completion of work and insure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area.
 - e. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units at entry point to affected area.
 - f. After Certification of Visual Inspection in the Work Area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 01711 Project Decontamination.

COMPLIANCE ENVIRONMENTAL, INC.

2. If the high reading was the result of other causes initiate corrective action as determined by the Owner or Owner's Representative.
 3. The Contractor shall stop work immediately if any visual emissions are observed.
- C. **Effect on Contract Sum:** Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

3.4 STOP WORK

- A. **If the Owner, Owner or Owner's Representative, or Project Administrator** presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure differential. Do not recommence abatement work until authorized in writing by Owner, Owner, or Owner's Representative or Project Administrator.
- B. **Immediately initiate the following actions:** After being presented with a stop work order immediately:
1. Cease all asbestos removal activities, or any other activities that disturbs ACM.
 2. Repair any fallen, ripped or otherwise failed work area isolation measures.
 3. Maintain in operation all work area isolation measures including those required by Sections 01526 "Temporary Enclosures," 01513 "Temporary Pressure Differential & Air Circulation System," 01563 "Decontamination Units."
 4. Maintain all worker protections including those required by Sections 01560 "Worker Protection - Asbestos Abatement," and 01562 "Respiratory Protection."
 5. Fog the air in the work area with a mist of amended water to reduce airborne fiber levels.
- C. **Do not recommence work** until authorized in writing by the Owner or Owner's Representative.

3.5 SCHEDULE OF ASBESTOS-CONTAINING MATERIALS

See Table 1. and Table 2. for approximate quantities and locations for positive and assumed asbestos-containing materials on the project. All quantities were estimated. The Contractor shall field verify said quantities without delay and immediately inform the Owner's Representative of any discrepancies.

3.6 CLEARANCE TESTING CRITERIA

After asbestos activities have been completed in each work area in the opinion of the Contractor and when the Contractor desires clearance testing, the Contractor shall inform the Owner's Representative to proceed with clearance testing of the work area. The Contractor shall not remove any critical barriers, enclosures, drop cloths, negative air controls, or any other specified controls or materials until the Contractor has pass all clearance testing.

The first step in the clearance testing shall include a complete visual inspection of every work area. The second step in the clearance testing will include air sampling (if required). Air sampling will not be performed in work areas which fail the visual inspection.

The visual inspection will include the following:

COMPLIANCE ENVIRONMENTAL, INC.

1. Ensure that **all** surfaces that were in contact with asbestos-containing materials are visually inspected.
2. Start from upper surfaces and work down.
3. Touch as surfaces to assist in determining if there is residual contamination.
4. For horizontal surfaces like floors, use a flash light placed on the surface to see rises in the floor elevation. Check all wall and floor junctures and corners. Check that no debris is under moldings, HVAC units and other wall and floor penetrations. For mastic removal, use a putty knife to scrap the floor surface. If residue remains, further cleaning is required.
5. For vertical surfaces, use a ladder when necessary to view all of the surface. Check for debris on floor and fallen debris within wall cavities.
6. For pipe insulation, inspect the full length of pipe runs and check all pipe hangers by physically moving them to determine if they contain debris. Examine all penetrations through ceilings, floors and walls. Check for debris at the bottom of all pipe runs. Bank on pipes to see if dust is released.

Air sampling (when applicable) will be performed in the work area after the area passes the visual inspection. In negative air enclosed areas, for each 1,000 square-feet of space, the air within the enclosed area must be agitated with a one horsepower electric leaf blower for at least five minutes. Agitate the air on all horizontal and vertical surfaces. During use of the leaf blower, a one stationary fan for each 10,000 cubic-feet of enclosure volume must be used. Place the fan on the floor and angle the fan toward the ceiling.

Air sampling pumps shall be calibrated with a DryCal primary flow meter prior to use. A secondary calibration source (manometer) shall be used to check the calibration of the sampling pumps at the beginning and ending of each sampling run. TEM or PCM cassettes as indicated in this specification shall be used at each sampling point.

ATTACHMENTS:

Table 1. Summary of Positive Asbestos-Containing Materials.

Table 2. Summary of Assumed Asbestos-Containing Materials.

Gymnasium Flexible Floor Total Mercury Metal Test Results.

Gymnasium Flexible Floor TCLP Mercury Metal Test Results.

END OF SECTION - 01013

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
MAIN BUILDING - SECTION 1 - INTERIOR					
HEATING (C)					
Rope Gasket	194 Mechanical: Asbestos Rope Gasket located on Burner Inner Doors of Boiler #1 (Weil McLain DE24796) and Boiler #2 (Weil McLain, DE24797)	RG-512, RG-513	Black/ White	40 to 50 % Chrysotile	6 Locations
MAIN BUILDING - SECTION 2 - INTERIOR					
FLOORING (A)					
Carpet Glue and Vinyl Cove Base Mastic	Hallway between Rooms 101G and 104: Carpet with Asbestos Carpet Glue over Concrete. Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.	CG-433, CG-434	Brown/ Black	3 % Chrysotile	180 SF
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	Stairs S6, Corridors C1, C2, C3, and C4, and Rooms (102, 103A, 104A, 104B, 106, 106A, 106B, 106C (Lockers Area), 109A, 156E, 156H, 156J, 156M, 156N): Asbestos 12" x 12" Floor Tile and Mastic over Concrete. Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.	FTM-684, FTM-697, FTM-701, FT-707, FTM-708, FT-751	Black, Tan	2 to 8 % Chrysotile	7,800 SF Total
	Rooms (103, 104, 105, 105A) : Carpet over Asbestos 12" x 12" Floor Tile and Mastic over Concrete. Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.				4,200 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Rooms (101BT, 101GT, 101MT, 101WT, 106GT, 106BT, 106C (Toilet Area), 156F, 156T, 165BT, 164GT,):</u> Ceramic Tile with Asbestos Ceramic Tile Mastic over Concrete. <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-411	Gray	2 % Chrysotile	1,300 SF Total
HEATING (C)					
Duct Mastic	<u>Room 103 - Above Ceiling:</u> Asbestos Duct Mastic located on HVAC Ductwork.	DM-712	Red	2 % Chrysotile	200 SF
MISCELLANEOUS (D)					
Glue Dots	<u>Rooms (101, 101G, 103, 104, 105, 106, 106E):</u> Asbestos Glue Dots located behind Chalkboards.	GD-87, GD-119	Brown	2 % Chrysotile	700 SF Total
Window Glazing	<u>Room 106 - (2) Window Locations:</u> Windows with Asbestos Window Glazing .	WG-716, WG-717	Gray	4 to 5 % Chrysotile	180 SF Total
Sink Undercoating	<u>Rooms (101C, 104, 104A, 103, 105, 109, and 156M):</u> Metal sink with Asbestos Sink Undercoating .	SU-698	Black	2 % Chrysotile	7 EA
MAIN BUILDING - SECTION 3 - INTERIOR					
FLOORING (A)					
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	<u>Classroom 155, Corridor C5 and C6, Corridor C5 Bathroom Entrance, 159J, Stairs S1, 161 Vestibule, Elevator, Nurse's Suite and Guidance Suite (Rooms 160F, 160H, 160M, 160N):</u> Asbestos 12" x 12" Floor Tile and Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-380, CBM-409, FT-671, FTM-672	Tan, Black	2 to 10 % Chrysotile 2% Anthophyllite	4,500 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	<u>Guidance Suite - Room 160G: 12" x 12" Floor Tile (Mastic Not Asbestos) over Asbestos 12" x 12" Floor Tile and Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-671, FTM-672	Tan, Black	2 to 5 % Chrysotile	180 SF
Floor Tile Mastic and Vinyl Cove Base Mastic	<u>Storage Room 131A and Classroom 154 (Beneath Built-In Cabinets): 12" x 12" Floor Tile over Asbestos Floor Tile Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-391, FTM-394, CBM-409	Black	3 to 5 % Chrysotile 2% Anthophyllite	480 SF
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Rooms (163BT, 162GT, 121BT, 157BT, 158GT, 160 BT, 160GT): Ceramic Tile with Asbestos Ceramic Tile Mastic over Concrete.</u> <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-411	Gray	2 % Chrysotile	1,200 SF Total
MAIN BUILDING - SECTION 4 - INTERIOR					
FLOORING (A)					
Tar Coating and Vinyl Cove Base Mastic	<u>Rooms (115, 115B, 115C, 115D, 115E, and 119): Wood over Asbestos Tar Coating over Concrete. Asbestos Tar Coating also under concrete pad. Remove concrete pad to fully abate asbestos materials.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	TC-40, TC-41, TC-53 TC-56, TC-57	Black	2 to 10 % Chrysotile	4,300 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Tar Coating and Vinyl Cove Base Mastic	Rooms 115B, 115C, 115D, and 115E: 12" x 12" Floor Tile (Mastic not Asbestos) over Concrete over Asbestos Tar Coating over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	TC-40, TC-41, TC-53 TC-56, TC-57,	Black	2 to 10 % Chrysotile	1,900 SF Total
Tar Coating (Remnants) and Vinyl Cove Base Mastic	Room 115: Remnants of Asbestos Tar Coating over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	TC-40, TC-41, TC-53, TC-56, TC-57	Black	2 to 10 % Chrysotile	4,100 SF Total Floor Area
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	Rooms 119T (Locker Area) and 119 (Hallway): Asbestos 12" x 12" Floor Tile and Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-38, FTM-39	Tan, Black	2 to 3 % Chrysotile	400 SF Total
Floor Tile Mastic and Vinyl Cove Base Mastic	Corridor C13 and C14, Stairs S5, 115 (Hallway), 173GT (Entrance), 1748T (Entrance), 175J, 115T (Locker Area), Cafeteria, 113B, 113A, 171A: 12" x 12" Floor Tile or 2' x 2' Floor Tile over Asbestos Floor Tile Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-39, FTM-49, FTM-50	Black	2 to 17 % Chrysotile	8,500 SF Total
	115T (Locker Area): Asbestos Floor Tile Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>				200 SF

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Rooms (113GT, 115T, 119T, 173GT, 174BT): Ceramic Tile with Asbestos Ceramic Tile Mastic over Concrete.</u> <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-411	Gray	2 % Chrysotile	1,000 SF Total
HEATING (C)					
Pipe Insulation Covering	<u>172 Boiler Room: Asbestos Pipe Insulation Covering</u> located above generator.	PIC-496, PIC-497	Gray/ White	50 to 65 % Chrysotile	200 LF
MAIN BUILDING - SECTION 5 - INTERIOR					
FLOORING (A)					
Tar Coating and Vinyl Cove Base Mastic	<u>Rooms 120 and 120B: Wood over Asbestos Tar Coating over Concrete. Asbestos Tar Coating also under concrete pad. Remove concrete pad to fully abate asbestos materials.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	TC-311, TC-312	Black	2 % Chrysotile	4,400 SF Total
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	<u>Stairs S3, Rooms (112C, 110A, 114A, 114, 116, 120T (Locker Area), 120D, 120E, and 120 (Hallway and Storage Room): Asbestos 12" x 12" Floor Tile and Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-307, FTM-308, FTM-310, CBM-332, FT-335, FTM-336, CBM-338	Tan, Black, Brown	2 to 8 % Chrysotile 2 % Anthophyllite	4,400 SF Total
Ceramic Tile Mastic	<u>112GT and 112MT: Vinyl Plank Flooring over Floor Filler over Ceramic Tile with Asbestos Ceramic Tile Mastic over Concrete.</u>	TM-345, TM-346	Gray/ White, White	2 % Chrysotile	500 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Ceramic Tile Cove Base Mastic	<u>112GT and 112MT: Vinyl Covebase (Mastic not Asbestos) over Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic over Block.</u>				
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Room 120T: Ceramic Tile with Asbestos Ceramic Tile Mastic on Block or Concrete.</u> <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms</u>	TM-345, TM-346	Gray/ White, White	2 % Chrysotile	200 SF
Carpet Glue	<u>Room 111: Carpet with Asbestos Carpet Glue over Ceramic Tile and Concrete.</u>	CG-353	Yellow	2 % Chrysotile	900 SF
Floor Tile Mastic and Vinyl Cove Base Mastic	<u>Rooms 116A, 118, 118A, 118B, and 120A : 12" x 12" Floor Tile over Asbestos Floor Tile Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-308, FTM-310, CBM-332, FTM-336	Black, Brown	2 to 8 % Chrysotile 2 % Anthophyllite	3,400 SF Total
MAIN BUILDING - SECTION 6 - INTERIOR					
FLOORING (A)					
Tar Coating and Vinyl Cove Base Mastic	<u>Room 125: Wood over Asbestos Tar Coating over Concrete. Asbestos Tar Coating also under concrete pad. Remove concrete pad to fully abate asbestos materials.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u> <u>Note: Demolition of classroom construction projects performed by Owner. Wooden floor and concrete pad demolition by Contractor to access and completely remove all Asbestos Tar Coating.</u>	TC-280, TC-281, CBM-283	Black, Brown	2 to 4 % Chrysotile 4 % Anthophyllite	5,800 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	Rooms 124, 126 (Hallway and Lockers), 126F, 128 (Hallway), 128A, 130B, 130C: Asbestos 12" x 12" Floor Tile and Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-262, FTM-263, CBM-283, FT-288, FTM-289, CBM-300	Tan, Black, Brown	2 to 6 % Chrysotile 2 to 4 % Anthophyllite	2,800 SF Total
Floor Tile Mastic and Vinyl Cove Base Mastic	Stairs S4, Rooms 128B, 128 (Lockers): 2' x 2' Floor Tile or 12" x 12" Floor Tile over Asbestos Floor Tile Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-263, FTM-267, CBM-283, FTM-289, FM-296, CBM-300	Black, Brown	3 to 7 % Chrysotile 2 to 4 % Anthophyllite	1,000 SF Total
Floor Tile Mastic and Vinyl Cove Base Mastic	Rooms 122A, 122B, and 122 (Hallway and Lockers): Wax over Asbestos Floor Tile Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms..</u>	FTM-263, FTM-267, CBM-283, FTM-289, FM-296, CBM-300	Black, Brown	3 to 7 % Chrysotile 2 to 4 % Anthophyllite	1,000 SF Total
Ceramic Tile Mastic	Rooms 122T, 126T, and 128T: Ceramic Tile with Asbestos Ceramic Tile Mastic on Block or Concrete.	TM-270	Gray	2 % Chrysotile	900 SF Total
MISCELLANEOUS (D)					
Drywall	<u>Room 126 Locker Area:</u> Joint Compound with Asbestos Drywall located above lockers, and the entranceway to the main shop room.	DW-295	White	3% Chrysotile	800 SF
Cement Panel	<u>Room 128 - Welding Tables - (2)</u> Locations: Asbestos Cement Panels located on Welding Tables.	CP-13, CP-14	Gray	30 % Chrysotile	50 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
MAIN BUILDING - SECTION 7 - INTERIOR - SECOND FLOOR					
FLOORING (A)					
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	Rooms (203, 203A, 203B204, 204A, 204B, 206, 206A, 206B, 210, 210A, 236), Corridors C18 and C20, Stairs S1 and S6: Asbestos 12" x 12" Floor Tile and Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-88, FTM-89, FTM-91, FTM-93, FT-97, FTM-98, FTM-140	Tan, Black	2 to 4 % Chrysotile	9,500 SF Total
Floor Tile Mastic, Filler, and Vinyl Cove Base Mastic	Room 225: Carpet or over Asbestos Floor Tile Mastic and Asbestos Filler over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FM-76, FG-82, FG-85, FTM-89, FTM-91, FTM-93, FTM-98, FTM-140	Black/ Yellow, Gray/ White, Gray, Brown, Black	2 to 4 % Chrysotile	1,000 SF Total
Floor Tile Mastic, Filler, and Vinyl Cove Base Mastic	Rooms 205, 205A: 12" x 12" Floor Tile over Asbestos Floor Tile Mastic and Asbestos Filler over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FM-76, FG-82, FG-85, FTM-89, FTM-91, FTM-93, FTM-98, FTM-140	Black/ Yellow, Gray/ White, Gray, Brown, Black	2 to 4 % Chrysotile	1,000 SF Total
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	Rooms (200BT, 200GT, 202BT, 202GT, 203BT, 203GT, 225T, 225WT, 225MT, 234BT, 234GT): Ceramic Tile with Asbestos Ceramic Tile Mastuc over Concrete. <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-411	Gray	2 % Chrysotile	1,800 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
HEATING (C)					
Duct Caulk	Mechanical Rooms 238 and 240: Asbestos Duct Caulk located on Vibration Dampeners.	DC-158, DC-159, DC-193	Brown	3 to 5 % Chrysotile	50 EA
Duct Mastic	Hallway Near Stairs S1 - Above Ceiling: Asbestos Duct Mastic located on HVAC Ductwork.	DM-726	Red	2 % Chrysotile	200 SF
MISCELLANEOUS (D)					
Glue Dots	Classrooms (200, 202, 203, 203A, 204, 205, 206, 210, 237) : Asbestos Glue Dots located behind Chalkboards.	GD-87, GD-119	Brown	2 % Chrysotile	2,500 SF
Window Caulk	Room 200E: Window with Asbestos Window Caulk .	WC-149, WC-150	Gray	3 to 4 % Anthophyllite	1 EA
Sink Undercoating	Room 225: Metal sink with Asbestos Sink Undercoating .	SU-8, SU-12	Black	2 % Chrysotile	1 EA
Fume Hood	Classroom 210: Science Fume Hood with Asbestos Cement Panels .	FH,-14, FH-15, FH-75	Gray	12 to 18 % Chrysotile	1 EA
Duct Mastic	Room 210 - Fume Hood: Asbestos Duct Mastic located on Fume Hood Exhaust Pipework. <u>NOTE: HVAC Pipework extends above drop ceiling to roof.</u>	DM-732	Red	5 % Chrysotile	200 SF
MAIN BUILDING - SECTION 8 - INTERIOR - SECOND FLOOR					
FLOORING (A)					
12" x 12" Floor Tile, Floor Tile Mastic, and Vinyl Cove Base Mastic	Rooms (211, 212, 213, 213A, 214, 215, 216S, 217, 218, 218A, 218B, 219, 220, 221, 222, 223, 224, 224A, 226, 226A, 227, 227 (Storage), 228, 228A, 229J, and 230), Coridor C16 and C17: Asbestos 12" x 12" Floor Tile and Mastic over Concrete. <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FT-3, FTM-4, FTM-11, FT-21, FTM-22, FTM-35, FT-36, FTM-37	Tan, Black	2 to 15 % Chrysotile	24,000 SF Total

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Floor Tile Mastic and Vinyl Cove Base Mastic	<u>Stairs S4 and S5: 2' x 2' Floor Tile over Asbestos Floor Tile Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>	FTM-4, FTM-11, FTM-22, FTM-35, FTM-37	Black	2 to 15 % Chrysotile	800 SF Total
	<u>Rooms 207 and 209: Carpet (Carpet Glue Not Asbestos) over Asbestos Floor Tile Mastic over Concrete.</u> <u>Note: Asbestos Vinyl Covebase Mastic is located below existing covebase and mastic layers around perimeter of rooms.</u>				1,800 SF Total
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Rooms (232BT, 231GT): Ceramic Tile with Asbestos Ceramic Tile Mastic over Concrete.</u> <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-411	Gray	2 % Chrysotile	900 SF Total
HEATING (C)					
Duct Caulk	<u>Mechanical Rooms 239 and 241: Asbestos Duct Caulk located on Vibration Dampeners.</u>	DC-176, DC-177, DC-218	Brown	2 to 3 % Chrysotile	75 EA
MISCELLANEOUS (D)					
Glue Dots	<u>Classrooms (207, 212, 213, 214, 215, 217, 218, 219, 220, 221, 222, 223, 224, 226, 228): Asbestos Glue Dots located behind Chalkboards.</u>	GD-87, GD-119	Brown	2 % Chrysotile	4,500 SF
Sink Undercoating	<u>Classrooms (211, 218A, 224, 227, 228): Metal sink with Asbestos Sink Undercoating.</u>	SU-8, SU-12	Black	2 % Chrysotile	7 EA
Fume Hood	<u>Classroom 218: Science Fume Hood with Asbestos Cement Panels.</u>	FH-14, FH-15, FH-75	Gray	12 to 18 % Chrysotile	1 EA

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Duct Mastic	<u>Room 218 - Fume Hood: Asbestos Duct Mastic</u> located on Fume Hood Exhaust Pipework. <u>NOTE: HVAC Pipework extends above drop ceiling to roof.</u>	DM-732	Red	5 % Chrysotile	200 SF
SHOP BUILDING - SECTION 9 - INTERIOR					
FLOORING (A)					
Ceramic Tile Mastic and Ceramic Tile Cove Base Mastic	<u>Rooms (148A, 179T): Ceramic Tile with Asbestos Ceramic Tile Mastic</u> over Concrete. <u>Note: Ceramic Tile Covebase with Asbestos Ceramic Tile Mastic is located around perimeter of rooms.</u>	TG-606	Gray/ White	2 % Chrysotile	800 SF Total
Vinyl Covebase Mastic	<u>Room 148B:</u> Vinyl Covebase with Asbestos Covebase Mastic located on Block Walls.	CBM-593	Brown	3 % Anthophyllite	200 SF
MISCELLANEOUS (D)					
Glue Dots	<u>Classrooms (146A, 149C): Asbestos Glue Dots</u> located behind Chalkboards. <u>NOTE: Some areas have exposed Asbestos Glue Dots.</u>	GD-1, GD-2	Brown	2 % Chrysotile	800 SF
MAIN BUILDING - EXTERIOR - WALL ELEVATIONS					
Building Caulk	<u>Roof Overhang between Main Building and Shop Building:</u> Asbestos Building Caulk located on Metal Siding and Masonry.	BC-693, BC-694	Gray	3 % Chrysotile	100 SF

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Window Glazing, Window Caulk, and Flashing Caulk	<u>Building Perimeter (Elevated Windows and Vent Panels - Approximately 15 VF from Surface) and Roof Elevation 1 (Main Lobby Windows): Window and Vent Panels containing Asbestos Window Glazing, Window Caulk, and Flashing Caulk.</u> <u>NOTE: Some Window locations are hidden by Metal panels that must be removed to access Windows. Asbestos Caulks are located on Metal trim below Window and Vent Panels. Also, Roof access doors contain Asbestos Caulks on Metal Door Frames.</u>	WG-709, WG-715, WG-721, WC-722, WG-732, WC-734 FLC-772, FLC-773, FLC-796	Gray, Black	2 to 15 % Chrysotile	8,000 SF Total
Window Glazing and Window Caulk	<u>Main Building - (3) Entrance Locations: Windows with Asbestos Window Glazing and Asbestos Window Caulk located on Glass and Metal.</u>	WG-721, WC-722, WG-732, WC-734	Gray	2 to 4 % Chrysotile	1,500 SF Total
MAIN BUILDING - EXTERIOR - ROOF ELEVATIONS					
Flashing Tar	<u>Roof Elevation 1 (Second Floor Roof) - Roof Edge Perimeter: Membrane Roof over Asbestos Flashing Tar over Metal/Masonry.</u>	FLT-744	Black	25 % Chrysotile	4,500 SF
	<u>Roof Elevation 1 (Second Floor Roof) - Roof Hatches - (5) Locations: Asbestos Flashing Tar located on Metal Roof Access Hatches.</u>	FLT-764	Black	2 % Chrysotile	100 SF Total
Flashing Caulk	<u>Main Building and Gymnasium Interface: Asbestos Flashing Caulk located on Membrane and Metal.</u>	FLC-801	Gray	15 % Chrysotile	200 SF
Roof Coating	<u>Roof Elevation 1 (Second Floor Roof) - Large Vents - (9) Locations: Asbestos Roof Coating located on Metal Roof Vents.</u>	RC-755	Gray/Orange	2 % Chrysotile	9 EA
Roof Tar Coating (Remnants)	<u>Roof Elevation 8: Membrane over Foam Insulation over Asbestos Roof Tar Coating (Remnants) over Metal.</u>	RT-790	Black	5 % Chrysotile	2,000 SF

Table 1 .

Summary of Positive Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.

Building Material	Location and Description	Sample ID:	Color	Laboratory Result	Approximate Quantity
Roof Tar Coating (Mechanical)	<u>Roof Elevation 14 - Mechanicals (2 Locations):</u> Membrane over Foam Insulation over Asbestos Roof Tar (Hot Mop) over Fiberboard over Metal. <u>NOTE: Asbestos Roof Tar (Hot Mop) is composed of Stone, Roof Tar, and Tar Paper and varies from 0.5 to 1.0 inches in thickness.</u>	RT-856	Black	3 % Chrysotile	100 SF Total
SHOP BUILDING - SECTION 9 - EXTERIOR - WALL ELEVATIONS					
Window Caulk and Window Glazing	<u>Building Perimeter - Elevated (Approximately 15 VF from Surface):</u> Asbestos Window Glazing and Asbestos Window Caulk located on elevated Windows.	WG-702, WC-703, WG-704	Gray	2 to 3 % Chrysotile	3,000 SF
SHOP BUILDING - SECTION 9 - EXTERIOR - ROOF ELEVATIONS					
Roof Coating	<u>Large Vents - (5) Locations:</u> Asbestos Roof Coating located on Metal Roof Vents.	RC-871	Silver/ Yellow/ Orange	4 % Chrysotile	5 EA
Roof Tar Coating (Mechanical)	<u>Roof Elevation 13 - Mechanicals (2 Locations):</u> Membrane over Foam Insulation over Asbestos Roof Tar (Hot Mop) over Fiberboard over Metal. <u>NOTE: Asbestos Roof Tar (Hot Mop) is composed of Stone, Roof Tar, and Tar Paper and varies from 0.5 to 1.0 inches in thickness.</u>	RT-829	Black	8 % Chrysotile	100 SF Total

Note: SF = Square-Feet, CF = Cubic-Feet, LF = Linear-feet, EA = Each

Table 2.**Summary of Assumed Asbestos-Containing Materials at Paul M. Hodgson Vocational Technical High School.**

Building Material	Location and Description	Category	Approximate Quantity
Break-In Locations Flooring Materials	Assumed throughout building at inaccessible locations under built-in shelving, furniture, temporary walls, lockers, etc. Locations shown on drawings have multiple break-in points.	Non-Friable	100 Locations
Floor Tile and Mastic	Assumed Asbestos Floor Tile and Mastic underneath cabinets and walls in locations with newer Non ACBM flooring. Remove cabinets and temporary walls to access ACBM for complete abatement.	Non-Friable	2,000 SF Total
Vinyl Cove Base Mastic	Assumed Asbestos Vinyl Cove Base Mastic is located behind newer layers around perimeter of rooms.	Non-Friable	2,100 SF Total
Chalkboard Glue Dots	Assumed throughout building located behind chalkboards in classrooms and in hallways. Remove chalkboards to gain access to glue dots for complete abatement.	Category II Non-Friable	97 Locations 12,000 SF
Break-In Heat Locations (Heat Shields and Pipe Coverings)	Heat sources are located throughout building. Units may have internal cement panels that vary in size and quantity and may be mounted on floors, walls, or ceilings at locations. All heating units required to be opened for inspection and all identified ACBM abated if found. Locations shown on drawings have multiple break-in points.	Category II Non-Friable	50 Locations
Break-In Locations Pipe Covering (Insulation and Fittings)	Assumed throughout building at inaccessible locations within walls, floors, and ceilings which includes all locations at water sources. Locations shown on drawings have multiple break-in points.	Friable	230 Locations
Internal Boiler Materials	<u>Assumed internal components of the boilers:</u> Main Building Section 1: Room 194 Mechanical: Boiler 1: (Weil McLain, DE24796) - Rib Type Boiler 2: (Weil McLain DE24797) - Rib Type Section 4: Room 172 Boiler Room: Boiler 1: Kewanee SN: P-0575 - Tube Type Boiler 2: Kewanee SN: P-0576 - Tube Type	Friable and Non-Friable	4 Boilers
Valve and Flange Gaskets	Main Building Section 1 - First Floor- Mechanical Room 194 Section 4 - First Floor - Room 172 - Boiler Room Section 7 - Second Floor - Mechanical Rooms 238 and 240 Section 8 - Second Floor - Mechanical Rooms 239 and 241 Remove all valves and flange gaskets identified as containing ACBM. Pipework may need to be disassembled to access gaskets.	Category I Non-Friable	700 EA Total

Note: SF = Square-Feet, CF = Cubic-Feet, LF = Linear-feet, EA = Each

**EMSL Analytical, Inc.**

6340 Castleplace Drive, Indianapolis, IN, 46250
Telephone: 317.803.2997 Fax:317.803.3047
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EMSL Order ID: 162558465**LIMS Reference ID:** CD58465**EMSL Customer ID:** COEN80

Attention: Val De Rocili
Compliance Environmental, Inc. [COEN80]
110 Lafferty Lane, Suite A
Dover, DE 19901
(302) 674-4427
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Project Name: NCCVT-HODGSON-GYNMASIUM
FLOOR-MERCURY TCLP SAMPLING

Customer PO:
EMSL Sales Rep: Josh Silverman
Received: 07/21/2025 10:16
Reported: 07/28/2025 06:02

Analytical Results

Analyte	Results	RL	Weight(mL)	Prep Date & Tech	Prep Method	Analysis Date & Analyst	Analytical Method	Q	DF
Client Sample ID: 071825-1						Date Sampled: 07/18/25			
Matrix: Solid						LIMS Reference ID: CD58465-01			
Mercury	0.91 mg/L	0.050 mg/L		07/25/25 CG	TCLP Extraction	07/25/25 CG	SW-846 7470A	M1	25
Sample Comments:									
Client Sample ID: 071825-2						Date Sampled: 07/18/25			
Matrix: Solid						LIMS Reference ID: CD58465-02			
Mercury	1.3 mg/L	0.10 mg/L		07/25/25 CG	TCLP Extraction	07/25/25 CG	SW-846 7470A		50
Sample Comments:									
Client Sample ID: 071825-3						Date Sampled: 07/18/25			
Matrix: Solid						LIMS Reference ID: CD58465-03			
Mercury	1.0 mg/L	0.050 mg/L		07/25/25 CG	TCLP Extraction	07/25/25 CG	SW-846 7470A		25
Sample Comments:									

**EMSL Analytical, Inc.**

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EMSL Order ID: 162558465**LIMS Reference ID:** CD58465**EMSL Customer ID:** COEN80

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Project Name: NCCVT-HODGSON-GYNMASIUM
FLOOR-MERCURY TCLP SAMPLING

Customer PO:
EMSL Sales Rep: Josh Silverman
Received: 07/21/2025 10:16
Reported: 07/28/2025 06:02

Notes and Definitions

Item	Definition
M1	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference. Laboratory Control Samples(LCS/LCSD) recovery were acceptable.
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DA	Direct Analysis
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
NR	Spike/Surrogate showed no recovery.
Q	Qualifier
RCS	Respirable Crystalline Silica
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Aleks Kuchenbrod Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. QC sample results are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.



EMSL ANALYTICAL, INC.

Environmental Chemistry Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.

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1025584105

Customer Information	Customer ID: COEN 80				Billing Information				Billing ID:								
	Company Name: Compliance Environmental, Inc.								Company Name: Same as Customer Information								
	Contact Name: Val DeRocili								Billing Contact:								
	Street Address: 110 Lafferty Lane, Suite A								Street Address:								
	City, State, Zip: Dover, Delaware, 19901		Country: USA						City, State, Zip:		Country:						
	Phone: (302) 674-4427								Phone:								
Email(s) for Report: vderocili@compliancecanhelp.com				Email(s) for Invoice:													
Project Name/No: NCCVT - Hodgson - Gymnasium Floor - Mercury TCLP Sampling												Purchase Order:					
EMSL LIMS Project ID: (if applicable, EMSL will provide)						US State where samples collected:		State of Connecticut (CT) must select project location:									
								☐ Commercial (Taxable) ☐ Residential (Non-Taxable)									
Samples for Compliance? ☐ Yes ☐ No If Yes, for NPDES? ☐ Yes ☐ No Other (Specify):						PWS ID:		State Reporting Required? ☐ Yes ☐ No									
Samples Collected by (Check One): ☐ EMSL ☒ CLIENT Samples Received Chilled? ☐ Yes ☐ No						Sample(s) Temperature Upon Receipt (LAB ONLY)											
Sampled By Name: Jamie DM						Sampled By Signature:						No. of Samples in Shipment: 3					
Turn-Around-Time (TAT)						Standard Turn-Around-Time: ☐ 2 Weeks The following TAT's are subject to Lab approval. Call lab to confirm TAT before submittal: ☒ 1 Week ☐ 4 Days ☐ 3 Days ☐ 2 Days ☐ 1 Day											
Client Sample ID	Comp	Grab	Date / Time Collected	Matrix	Preservative	List Test(s) Needed (Write in test below, then check on sample line:)								Comments			
				W=Water S=Soil A=Air SL=Sludge O=Other	1 HCL 2 HNO3 3 H2SO4 4 ICE 5 Other Describe below in Special Instructions	Test 1: TCLP Mercury	Test 2:	Test 3:	Test 4:	Test 5:	Test 6:	Test 7:	Test 8:				
071825-1		☒	07/18/25	O	N/A	☒										Do not Split Sample	
071825-2		☒	07/18/25	O	N/A	☒										Do not Split Sample	
071825-3		☒	07/18/25	O	N/A	☒										Do not Split Sample	
Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)																	
Reporting Requirements: ☒ Results Only ☐ Results and QC ☐ Reduced Deliverables ☐ Hresults EDD ☐ Excel ☐ Other (Describe Above)																	
Method of Shipment:						Sample Condition Upon Receipt:						Received on Ice? ☐ Check if Yes:					
Relinquished by:						Date/Time: 7/18/25 @ 1100 hrs						Received by:					
Relinquished by:						Date/Time:						Received by:					

Controlled Document - COC-07 Chemistry R12 11/07/2023

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by the Customer.