THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

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Asbestos Class C Lab Analyst Proficiency Verification

(In accordance with the provisions of M.G.L. c. 149, § 6-6F ½ and 454 CMR 28.00)

License number: _____ Date: _____ Reviewer: _____

Please complete each section below by printing or typing the information, attaching all required documentation, and signing the form.

Section 1: Class C Lab information

Company name: _____

Phone: _____ Fax: _____

Email address: _____

Business location (Street): _____

City/Town: _____ State: _____ Zip Code: _____

Mailing address (if different): _____

City/Town: _____ State: _____ Zip Code: _____

Federal Identification Number: _____

Section 2: Items to be submitted and completed with the Verification:

1. Asbestos Class C Analytical Service Providers are required to meet **one** of the following:
   - All analysts performing Class C analysis are listed in the Asbestos Analysts Registry (AAR) of the American Industrial Hygiene Association and maintain proficiency in the Asbestos Analysis Testing (AAT) Program of the American Industrial Hygiene Association (AIHA).
     - If the Asbestos Class C Analytical Service Provider is using this method submit proof of AAR registration and participation in AAT for each analyst to Lead&asbestosenforcement@mass.gov.
   - All analysts performing Class C analysis participate in the Department of Labor Standards Asbestos Analyst Proficiency Program.
     - If the Asbestos Class C Analytical Service Provider is using this method email Lead&asbestosenforcement@mass.gov or call (617) 626-6030 for an appointment.
     - Analysts will be tested in:
       1. Microscope set-up
       2. Sample identification
       3. Asbestos fiber counting
     - Submit payment at https://www.mass.gov/dls-online-payment.
       1. $500 annual for the lab and one analyst; $50 per additional analyst
   - The Asbestos Analytical Service maintains accreditation through the AIHA Industrial Hygiene Laboratory Accreditation Program (IHLAP) for Phase Contrast Microscopy (PCM).
     - If the Asbestos Class C Analytical Service Provider is using this method submit proof of accreditation to Lead&asbestosenforcement@mass.gov.
     - All analysts must show NIOSH 582 training or equivalent
2. A list of the names of all the Asbestos Class C analysts working for the Analytical Service Provider:

Statement of Compliance

I, _____ (print name) _____ (print title). certify, that all employees to be engaged in Asbestos PCM Analysis are certified or will be certified prior to any Analysis being performed by them, pursuant to the requirements of 454 CMR 28.00.

I further state, that I have read and understand the Commonwealth of Massachusetts Regulations for The Removal, Containment, or Encapsulation of Asbestos, 454 CMR 28.00, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of my knowledge and belief.

Signed under the penalties of perjury.

Signature: _____ Date: _____

Enrollment in the Asbestos Class C Lab Analyst Proficiency Program is valid for a period of one year. Renewal verifications should be submitted to the Department of Labor Standards no later than 30 calendar days before the expiration of the current verification. The submission of a renewal later than 30 days before the expiration of the current verification may result in renewal after the expiration of the current certificate.

Please attach this document to your Asbestos Analytical Service Provider application (if completing together) and send your completed application and enrollment form to: lead&asbestosenforcement@mass.gov

_____(For Official DLS Use Only) _____

Department of Labor Standards Proficiency Testing Requirements

- Analysts must verify with DLS inspector
- Microscope set-up and equipment
  - Required Reagent-Acetone (reagent grade)
    - Note: Dimethylformamide (DMF)*, reagent grade/glacial acetic acid can be used as an alternative filter-clearing reagent.
    - Note: The dimethyl phthalate and diethyl oxalate solution as described in P&CAM 239 in Appendix F can be used as an alternate filter-clearing reagent. Note that samples prepared in this method are only stable for two days.
  - Triacetin (glycerol triacetate), reagent grade.
    - Note: Euparal (synthetic Canada Balsam) can be used as an alternative mounting media.
  - Microscope: Must be positive-phase contrast microscope with binocular or trinocular head.
  - Microscope, positive-phase (dark) contrast, with blue or green filter, adjustable-field iris, 8x to 10x eyepiece, and 40x to 45x phase objective (total magnification ca. 400x); numerical aperture = 0.65 to 0.75.
  - Graticule, Walton-Beckett type with 100 um diameter circular field (area = 0.00785 mm2) at the specimen plane (Type G-22) (must be fitted to the microscope in use).
  - HSE/NPL phase-contrast test slide, Mark III (red or green certified slides only)
  - Telescope, Ocular phase-ring centering
  - Stage micrometer (0.01 mm divisions)
  - Microscope slides, pre cleaned, 25 x 75 mm
  - Cover slips, 22 x 22 mm, Number 1½ unless otherwise specified by microscope manufacturer
  - Lacquer or nail polish
  - Knife, #10 surgical steel with curved blade
  - Tweezers
  - Acetone flash vaporization system (Hot Block)
  - Micropipettes or syringes, 5 ul, 100-500 ul

- Sample preparation and mounting
  - Using the aluminum hot block flash vaporization system, the block should be heated to 70 degrees C.
  - Ensure that the glass slides and cover slips are free of dust and fibers.
  - Clean outside of filter cassette.
  - Mount a triangular shaped wedge of the sample filter on a clean glass slide.
  - Acetone clearance procedure:
    - Insert the slide with wedge into the receiving slot at the base of the Hot Block.
    - Inject acetone into the vaporization chamber, after waiting for 3-5 seconds for the filter to clear, remove the slide from its port.
    - Immediately place Triacetin on the wedge and lower a cover slip onto the wedge.
  - DMF/acetic acid clearance procedure:
    - Using 20 ± 5 µL DMF solution, place several drops along the edge of the wedge and allow the solution to wick onto the filter to avoid washing fibers off the filter.
    - Warm the slide at 60 (+2/-5) °C for 30 minutes in the drying oven or on the warming plate.
    - Mount the cover slip with Triacatin.
  - The dimethyl phthalate and diethyl oxalate solution clearance procedure:
    - apply a drop of mounting solution onto the center of the slide.
    - Using another glass rod, spread the mounting media into a triangular shape. The size of this triangle should coincide with the dimension of the filter wedge.
    - Grasp the filter wedge with the tweezers on the perimeter of the filter which was clamped between the monitor case sections. Do not touch the filter with your fingers. Place the wedge, sample side up, upon the mounting medium.
    - Pick up a clean coverslip with tweezers and carefully place it on the filter wedge. Once this contact has been made, do not reposition the coverslip.
  - Mark outline of filter wedge with glass marking pen to aid in microscopic evaluation.
  - Glue the edge of the cover slip using lacquer or nail polish.
- Analysis
  - Clean the optical surfaces.
  - Use the telescope ocular, or Bertrand lens, supplied by the manufacturer to ensure that the phase rings are concentric.
  - Check the phase-shift detection limit of the microscope.
    - Center the HSE/NPL phase contrast slide under the phase objective, bring the blocks of grooved lines into focus in the graticule area.
      - Note: The slide contains seven blocks of grooves (circa 20 grooves per block) in descending order of visibility. For asbestos counting, it is intended that some blocks of lines are completely visible and one or more are completely invisible when centered in the graticule area (blocks in between may be partially visible). The visibility of the blocks must match the statements in the accompanying certificate [19]. A microscope which fails to meet this requirement for a test slide has resolution either too low or too high for fiber counting.
  - Record all pertinent information in the laboratory notebook.
  - The analyst will provide a permanently-mounted reference slide or PAT round slide for fiber counting.
    - Count the fibers, according to the appropriate counting rules:
      - Count only fibers longer that 5um which lies entirely in the graticule area.
      - Count only fibers with a 3:1 length-to-width ratio.

- Count as 1/2 fiber any fiber with only one end lying within the graticule area, provided that the fiber meets the criteria of rule above.
- Do not count any fiber which crosses the graticule boundary more than once.
- Count bundles of fibers as one fiber unless individual fibers can be identified by observing both ends of a fiber.
- Count enough graticule fields to yield 100 fibers, count a minimum of 20 fields and stop at 100 graticules fields regardless of the count.