



November 4, 2003

Ms. Denise Bradley
Department of Planning, Conservation and Development
City of Middletown
245 DeKoven Drive
Middletown, CT 06457

RE: **Specification: Hazardous Materials Abatement
Former Marino Restaurant
56 Ferry Street, Middletown
EnviroScience Project No. 03-191.10**

Dear Ms. Bradley:

Enclosed please find the Specifications for asbestos abatement, lead paint disturbance, and disposal of PCB-containing ballast and mercury-containing lamps/gauges/thermometers related to demolition of the former Marino Restaurant building at 56 Ferry Street, Middletown, Connecticut.

This Specification describes the work procedures to be followed for asbestos, lead-in-paint, PCB-containing ballast, and mercury-containing lamps/gauges/thermometers and is based on the report of the hazardous materials inspection conducted in the building by EnviroScience Consultants, Inc.

If you have any questions regarding this specification, please call me at (860) 953-2700, ext. 3036. Thank you for this opportunity to have served your environmental needs.

Sincerely,

A handwritten signature in cursive script that reads "James Scott".

Jim Scott, C.I.H.
Manager, Industrial Hygiene
(Asbestos Project Designer License # 000044)
(Lead Planner/Project Designer License # 001045)

JLS:ah

Enclosure

cc: Mr. Salvatore Fazzino, Middletown DPW

Y:\WORD\Projects\Specs\03-191.10 spec.doc

**ASBESTOS AND LEAD ABATEMENT
DISPOSAL OF PCB-CONTAINING BALLASTS
AND MERCURY-CONTAINING LAMPS**

**Former Marino Restaurant
Building Demolition Project
56 Ferry Street
Middletown, Connecticut**

Prepared for

City Of Middletown
245 deKoven Drive
Middletown, Connecticut

Prepared by

EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, Connecticut 06111

November 4, 2003

EnviroScience Project No. 03-191.10

TABLE OF CONTENTS

DIVISION 1

Section 01026 Unit Prices

DIVISION 2

Section 02080 Asbestos Abatement

Section 02085 PCB Containing Ballast

Section 02086 Mercury Containing Fluorescent Lamps

Section 02091 Lead Based Paint Awareness

ATTACHMENTS

Attachment A: Drawing HM-1

Attachment B: Hazardous Materials Survey Report

SECTION 01026 – UNIT PRICES

PART ONE - GENERAL

1.01 SUMMARY

- A. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the project Scope of Work is altered.
- B. Unit prices include material, overhead, any direct or indirect expenses of the Contractor or Sub-Contractor, profit, insurance, bonding, and any applicable taxes. The same unit price shall apply whether work is added or deducted.

PART TWO - PRODUCTS

NOT USED

PART THREE - EXECUTION

NOT USED

3.01 UNIT PRICE SCHEDULE

Unit Prices in accordance with the following schedule will apply to this Contract:

Item No. 1 - VINYL FLOOR TILE AND ASSOCIATED MASTIC, REMOVAL AND DISPOSAL

\$ _____ per square foot, plan view, including all flooring layers.

Item No. 2 – LINOLEUM AND ASSOCIATED MASTIC, REMOVAL AND DISPOSAL

\$ _____ per square foot, plan view, including all flooring layers.

Item No. 3 – CEILING TILES, REMOVAL AND DISPOSAL

\$ _____ per square foot, plan view, including grid.

Item No. 4 – GLUE DAUBS ASSOCIATED WITH CEILING TILE, REMOVAL AND DISPOSAL

\$ _____ per square foot ceiling, plan area.

SECTION 01026 -- UNIT PRICES

Item No. 5 -- SIDING, REMOVAL AND DISPOSAL

\$ _____ per square foot elevation view, including siding paper.

Item No. 6 -- AIR-CELL PIPE INSULATION, REMOVAL AND DISPOSAL

\$ _____ per linear foot, including associated mudded fitting insulation.

Item No. 7 - GLOVEBAG FOR PIPE INSULATION AND/OR MUDDERED FITTING (less than 3 LF/3 SF), REMOVAL AND DISPOSAL

\$ _____ per glovebag.

Item No. 8 -- WINDOW CAULKING, REMOVAL AND DISPOSAL

\$ _____ per linear foot, single bead

\$ _____ per window.

Item No. 9 - ROOF PERIMETER FLASHING AND PENETRATION FLASHING, REMOVAL AND DISPOSAL

\$ _____ per square foot, plan view, all layers

Item No. 10 - PREPARATION OF A SMALL CONTAINED WORK AREA WITH DECONTAMINATION UNIT

\$ _____ per containment, nominal 20 SF area plan view.

Item No. 13 - REMOVAL AND DISPOSAL OF PCB-CONTAINING BALLASTS

\$ _____ per ballast , containerized in DOT-approved drum.

Item No. 14 - REMOVAL AND DISPOSAL OF MERCURY-CONTAINING DEVICES

\$ _____ per device, containerized DOT-approved drum.

-END OF SECTION-

SECTION 02080 -- ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General Provisions of Contract apply to this Section, including Supplementary Conditions and other Division 1 Sections.
- B. Refer to all other Sections of these Specifications and the Drawings (HM-1) to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

1.2 PROJECT DESCRIPTION

- A. The project involves abatement of known and/or suspect asbestos-containing materials (ACM) that will be impacted by the proposed demolition of the former Marino Restaurant at 56 Ferry Street, Middletown, Connecticut. City of Middletown has retained EnviroScience Consultants, Inc. (EnviroScience) as the hazardous materials consultant.
- B. The Contractor under this Section shall provide all materials, labor, equipment and appliances as required to perform the work of this Section.

1.3 SCOPE OF WORK

- A. Work outlined in this section includes all which is necessary for the complete removal and disposal of materials specified herein as asbestos-containing and asbestos-contaminated (collectively, ACM) identified below. The quantities provided below are to establish the order of magnitude of the abatement project. Actual quantities may vary. The Contractor is responsible for verification of all quantities of ACM scheduled for removal. This verification shall include an on-site walk-through of the building. No change order will be admissible for Contractor's mistake in inaccurately estimating the quantities in the areas identified.
- B. Coordinate this section with other Sections of these Specifications for actual quantities of work required. Reference drawing enclosed as Attachment A and asbestos surveys
- C. Refer to the Hazardous Materials Survey Report enclosed as Attachment B for identification and locations of asbestos-containing materials.

SECTION 02080 – ASBESTOS ABATEMENT

Approximate quantities of ACM noted in paragraph A above include:

TABLE 1

LOCATION	MATERIAL	QUANTITY
Serving Area	Glue daubs with ceiling tile	840 SF
Serving Area	Red flooring under plywood	1290 SF
Restroom Area	Suspended ceiling tile (transite)	450 SF
Restroom Area	12" tan floor tile	450 SF
Kitchen	9" dappled floor tile	280 SF
Roof of restroom area and other rooms	Roof flashing	1570 SF
Rear of building	Siding (transite)	550 SF
All windows	Window caulk	88 LF

LF = Linear Feet, SF = Square Feet

- D. The Contractor shall provide all materials, labor, equipment and appliances as required to perform the work of this Section.

1.3 DEFINITIONS

The following definitions relative to asbestos abatement apply:

1. ABATEMENT - Procedures to control fiber release from asbestos-containing materials; includes removal, encapsulation, and enclosure.
2. AIR MONITORING - The process of measuring the fiber concentration of an area or of a person.
3. AMENDED WATER - Water to which a surfactant has been added.
4. ASBESTOS - The name given to a number of naturally occurring fibrous silicates. This includes the serpentine forms and the amphiboles and includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite, or any of these forms, which have been chemically altered.
5. ASBESTOS WORK AREA - a regulated area as defined by OSHA 29 CFR 1926.1101 where asbestos abatement operations are performed which is isolated by physical barriers to prevent the spread of asbestos dust, fibers, or debris.

SECTION 02080 – ASBESTOS ABATEMENT

The regulated area shall comply with requirements of regulated area for demarcation, access, respirators, prohibited activities, competent persons and exposure assessments and monitoring.

6. ASBESTOS FELT – a product made by saturating felted asbestos with asphalt or other suitable bindery, such as a synthetic elastomer.
7. ASBESTOS FIBERS - Those particles with a length greater than five (5) microns and a length to diameter ratio of 3:1 or greater.
8. ASPHALT SHINGLES, COMPOSITION SHINGLES OR STRIP SLATES – (Pitched Roof Shingle): a roofing material manufactured by saturating a dry felt with asphalt then coating the saturated felt with a harder asphalt mixed with a fine mineral, glass fiber, asbestos or organic stabilizer. All or part of the weather side may be covered with mineral granules, or with powdered talc or mica.
9. BASE FLASHING (ROOF) – the flashing provided by upturned edges of a watertight membrane on a roof. May contain metal and associated waterproofing material or combination of roofing felts and waterproofing at the joint between a roofing surface and a vertical surface such as a wall or parapet. Also base flashing may be present at perimeter of completely flat roofing.
10. BUILT-UP ROOFING (Composition Roofing, Felt and Gravel Roofing, Gravel Roofing) - a continuous roof covering made up of laminations or plies of saturated or coated roofing felts, alternated with layers of asphalt or coal-tar pitch and surfaced with gravel, paint or finish coat.
11. CAULKING - resilient mastic compound often having a silicone bituminous or rubber base. It is used to seal cracks, fill joints, prevent leakage. Typical applications: around windows and doors, at joints between two dissimilar materials. (i.e., masonry to wood, masonry to steel etc.).
12. CLEAN ROOM - An uncontaminated area or room, which is a part of the worker decontamination enclosure with provisions for storage of workers' street clothes and protective equipment.
13. CLEARANCE SAMPLING - Final air sampling performed aggressively after the completion of the abatement project in a regulated area.

SECTION 02080 – ASBESTOS ABATEMENT

Air samples collected by the air sampling professional having a fiber concentration of less than 0.01 fibers/cc of air in each of five (5) samples collected inside the containment will denote acceptable clearance sampling by Phase Contrast Microscopy (PCM).

or,

Five air samples collected inside the containment by the air sampling professional having an average asbestos concentration of less than 70 structures per square millimeter of air will denote acceptable clearance sampling for Transmission Electron Microscopy (TEM).

14. COMPETENT PERSON - As defined by 29 CFR 1926.1101, a representative of the Abatement Contractor who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure. Who has authority to take prompt corrective measures to eliminate such hazards during asbestos removal. Competent person shall be properly trained in accordance with EPA's Model Accreditation Plan.
15. CURTAINED DOORWAY - A device to allow ingress and egress from one area to another while permitting minimal air movement between the areas. Two curtained doorways spaced a minimum of six feet apart can form an airlock.
16. DAMP PROOFING - application of a water impervious material to surface such as wall to prevent penetration of moisture, typically at foundation or below grade surface.
17. DECONTAMINATION ENCLOSURE SYSTEM - A series of connected areas, with curtained doorways between any two adjacent areas, for the decontamination of workers and equipment. A decontamination enclosure system always contains at least one airlock and is adjacent and connected to the regulated area, where possible.
18. ENCAPSULANT - A liquid material which can be applied to asbestos-containing materials which controls the possible release of asbestos fibers from the materials either by creating a membrane over the surface (bridging encapsulant) or penetrating the material and binding its components together (penetrating encapsulant).
19. EQUIPMENT ROOM – Any contaminated area or a room that is part of the worker decontamination enclosure with provisions for storage of contaminated clothing and equipment.

SECTION 02080 -- ASBESTOS ABATEMENT

20. FIXED OBJECT - Unit of equipment or furniture in the work areas that cannot be removed from the work area.
21. FRIABLE ASBESTOS MATERIALS - Any material that contains more than 1% asbestos by weight, that can be crumbled, pulverized or reduced to powder by hand pressure.
22. GLAZING COMPOUND - any compound used to hold window glass in place, also referred to as putty, or glaziers putty. Is not field applied, usually installed during manufacture of windows.
23. GLOVE BAG - A manufactured polyethylene bag type of enclosure with built-in gloves such as is placed with an air tight seal around asbestos-containing material and which permits the asbestos-containing materials contained by the bag to be removed without releasing asbestos fibers to the atmosphere. The use of glove bag is permitted for removal and repair of small amount (less than 3 linear feet/3 square feet) of ACM.
24. HEPA FILTER - High Efficiency Particulate Air (HEPA) filter in compliance with ANSI Z9.2-1979.
25. HEPA VACUUM EQUIPMENT - Vacuum equipment equipped with a HEPA filter system for filtering the effluent air from the unit.
26. MOVABLE OBJECT - Unit of equipment of furniture in the work area that can be removed from the work area.
27. NEGATIVE AIR PRESSURE EQUIPMENT - A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a regulated area (negative with respect to adjacent unregulated areas) and capable of maintaining a constant, low velocity air flow into regulated areas from adjacent unregulated areas.
28. NESHAPS - National Emissions Standard for Hazardous Air Pollutants regulations enforced by the EPA.
29. PERMISSIBLE EXPOSURE LEVEL (PEL) - The maximum airborne concentration of asbestos fibers to which an employee is allowed to be exposed. The new level established by OSHA 29 CFR 1926.1101 is 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average and 1.0 fibers /cc averaged over a sampling period of 30 minutes as an Excursion Limit.

SECTION 02080 – ASBESTOS ABATEMENT

The Contractor is responsible for maintaining work areas in a manner that this standard is not exceeded.

30. PROJECT MONITOR - A professional capable of conducting air monitoring and analysis of schemes. This individual should be an industrial hygienist, an environmental scientist, or an engineer with experience in asbestos air monitoring and worker protection equipment and procedures. This individual should have demonstrated proficiency in conducting air sample collection in accordance with 29 CFR 1910.1001 and 29 CFR 1926.1101.
31. REGULATED AREA - An area established by the employer to demarcate where Class I, II, and III asbestos work is conducted and any adjoining area where debris and waste from such asbestos work accumulate, and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the PEL.
32. SHOWER ROOM - A room between the clean room and the equipment room in the work decontamination enclosure with hot and cold running water and suitably arranged for employee showering during decontamination. The shower room is located in an airlock between the contaminated area and the clean area.
33. WATERPROOFING - material, usually a membrane or applied compound (tar/mastic), used to make a surface impervious to water. Includes concealed conditions (applications around doors, windows, and in wall cavities), sometimes combined with felts.

1.4 SUBMITTALS

- A. The Contractor shall submit the following to the Owner/Consultant prior to the pre-construction meeting:
 1. Submit evidence that the Contractor is certified to perform asbestos abatement work by the State of Connecticut Department of Public Health.
 2. Submit a schedule to the Owner and the Consultant that defines a timetable for executing and completing the project, including set-up, removal, cleanup, decontamination, and final air clearance.
 3. Submit the identity and licensing of the hauling contractor and the landfill to be used.

SECTION 02080 – ASBESTOS ABATEMENT

4. Submit the plans and construction details for the construction of the decontamination enclosure systems and the isolation of the work areas as may be necessary for compliance with this specification and applicable regulations.
5. Submit the certificate, training, medical and respirator fit test records of each employee who may be on the project site.
6. Submit the qualifications and licensing of the individual that the Contractor proposes to use for this project to perform employee exposure monitoring.
7. Submit detailed product information of all the equipment and Material Safety Data Sheet (MSDS) of all the materials proposed for asbestos abatement work on this project.
8. Submit pertinent information regarding the qualifications of the Project Supervisor (competent person) for this project as well as a list of past projects completed.
9. Submit CTDPH – stamped notification of asbestos abatement.

B. The following shall be submitted to the Consultant during the work:

1. Results of personal air sampling
2. Training and medical records for new employees to start work (24 hours in advance of work).
3. Signed copy of the Certificate of Workers Acknowledgment found at the end of this section for each worker who is to be at job site.
4. Contractor's site log and work area access log.

C. The following shall be submitted to the Consultant at the completion of work:

1. Copies of all air sampling results
2. Contractor logs
3. Completed copies of Waste Shipment Records (WSR).

1.5 REGULATIONS AND STANDARDS

A. The Contractor shall be solely responsible for conducting this project and supervising all work in a manner which will be in conformance with all federal, state, and local regulations and guidelines pertaining to asbestos abatement. Specifically, the Contractor shall comply with the requirements of the following:

1. U.S. Environmental Protection Agency (USEPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) Regulations (40 CFR 61, Subpart M);
2. Occupational Safety and Health Administration (OSHA) Asbestos Regulations (29 CFR 1910.1001 and 1926.1101);

SECTION 02080 – ASBESTOS ABATEMENT

3. State of Connecticut Department of Public Health (CTDPH) Standards for Asbestos Abatement Sections 19a-332a-1 through 19a-332a-16 inclusive and Sections 19a-332-17 through 19a-332-23 inclusive.
4. State of Connecticut Department of Environmental Protection (CTDEP) Regulations. Section 22a-209-8(i) and Section 22a-220 of the Connecticut General Statute.
5. Connecticut Basic Building Code (BOCA)
6. Life Safety Code (NFPA);
7. City of Middletown health and safety codes, ordinances or regulations pertaining to asbestos abatement and all national codes and standards including ASTM, ANSI, and Underwriter's Laboratories.

1.6 EXEMPTIONS

- A. Any deviations from these specifications requires the written approval and authorization from the Owner and the Consultant prior to performance of the deviation.
- B. Any modifications from the standard work practices identified in the CTDPH Standards for Asbestos Abatement, Sections 19a-332a-1 to 19a-332a-23, must be requested in writing and approved in writing from the CTDPH as an alternative work practice (AWP). The CTDPH – approved AWP must be reviewed by the Owner and Consultant prior to the performance of the modification.

1.7 FINAL VISUAL INSPECTION AND CLEARANCE AIR SAMPLING

- A. Following the completion of the final cleaning phase of the work in each regulated area, the Consultant shall conduct a final visual inspection of the work area. The Contractor shall be responsible for meeting final visual criteria, which is the absence of visible debris, as specified in CTDPH regulation 19a-332a-12(b).
- B. Following the completion of the final visual inspection, and upon which time the Consultant agrees that the Contractor has met the final visual criteria, the Consultant will collect final air clearance samples in each work areas as required. The owner of the facility shall be responsible for payment of the sampling and analysis of the first round of final air clearance samples only. The Contractor shall be responsible for payment of all costs associated with the collection and analysis of additional final air clearance samples. (This building will be eventually demolished. However, considering that this demolition may not happen immediately following the abatement and reentering the building might be necessary for demolition purpose, re-occupancy final air clearance sampling will be conducted per regulatory requirements).

SECTION 02080 – ASBESTOS ABATEMENT

1.8 NOTIFICATIONS, POSTINGS, SUBMITTALS, AND PERMITS

A. The Contractor shall make the following notifications, and provide the submittals to the following agencies prior to the commencement of removal work:

1. State of Connecticut
Department of Public Health
Indoor Air Program
410 Capitol Avenue
P.O. Box 340308
Hartford, CT 06134-0308

Note: Submission to the CTDPH satisfies the requirement to notify the EPA.

2. State of Connecticut
Department of Environmental Protection
Health Services and Solid Waste management Unit
165 Capital Avenue
Hartford, CT 06106

Note: submit to DEP if asbestos waste is to be disposed of in Connecticut.

B. The minimum information included in the notification to these agencies includes:

1. Name and address of site owner/operator
2. Site location
3. Amount of friable and non-friable asbestos
4. Work schedule, including proposed start and completion date
5. Asbestos removal procedures to be used
6. Name and location of disposal site for generated asbestos waste, residue, and debris

1.9 WORK SITE SAFETY PLAN

A. The Contractor shall establish a set of emergency procedures and shall post them in a conspicuous place at the work site. The safety plan should include provisions for the following:

1. Evacuation of injured workers.
2. Emergency and fire exit routes from all work areas.
3. Emergency first aid treatment.

SECTION 02080 – ASBESTOS ABATEMENT

4. Local telephone numbers for emergency services including ambulance, fire, and police.
 5. A method to notify appropriate personnel in the event of a fire or other emergency requiring evacuation of the site or area.
 6. Site safety plan for fall protection.
- B. The Contractor is responsible for training all workers in these procedures.

1.10 CONTROL OVER REMOVAL WORK

- A. At the discretion of the owner, all work procedures shall be continuously monitored by the Consultant to assure that areas outside the designated work area will not be contaminated.
- B. Prior to work on any given day, the Contractor's designated "competent person" shall discuss the day's work schedule with the Consultant to evaluate job tasks with respect to safety procedures and requirements specified to prevent contamination outside the work area. This includes a visual survey of the work area and the decontamination enclosure systems.
- C. The Contractor shall maintain control of and be responsible for access to all work areas to ensure the following requirements:
1. Non-essential personnel are prohibited from entering the area;
 2. All authorized personnel entering the work area shall read the "Worker Protection Procedures" which are posted at the entry points to the enclosure system, and shall be equipped with properly fitted respirators and protective clothing;
 3. All personnel who are exiting from the decontamination enclosure system shall be properly decontaminated;
 4. Asbestos waste that is taken out of the work area must be properly bagged and labeled in accordance with these specifications. The surface of the bags shall be decontaminated. Asbestos waste leaving the enclosure system must be immediately transported off site or immediately placed in locked, posted temporary storage on site, and removed within 24 hours of the project conclusion. The Contractor will seek permission of the owner/operator to place temporary dumpster at a suitable location.
 5. Any material, equipment, or supplies that are brought out of the decontamination enclosure system shall be cleaned and decontaminated by wet cleaning and/or HEPA vacuuming of all surfaces.

SECTION 02080 – ASBESTOS ABATEMENT

1.11 PROPER WORKER PROTECTION

- A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.
- B. All workers are to be accredited and certified as Abatement Workers as required by the State of Connecticut Department of Public Health. The Site Supervisor needs to be certified as Asbestos Site Supervisor by the State of Connecticut Department of Public Health.
- C. The Contractor is required to be certified, accredited, and licensed as required by the State of Connecticut Department of Public Health.
- D. In accordance with 29 CFR 1926.1101, all workers shall receive a training course covering the dangers inherent in handling asbestos, the dangers of breathing asbestos dust, proper work procedures, and proper worker protective measures. This course must include but is not limited to the following:
 - 1. Methods of recognizing asbestos
 - 2. Health effects associated with asbestos
 - 3. Relationship between smoking and asbestos in producing lung cancer
 - 4. Nature of operations that could result in exposure to asbestos
 - 5. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - a. Engineering controls
 - b. Work Practices
 - c. Respirators
 - d. Housekeeping procedures
 - e. Hygiene facilities
 - f. Protective clothing
 - g. Decontamination procedures
 - h. Emergency procedures
 - i. Waste disposal procedures
 - 6. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
 - 7. Appropriate work practices for the work
 - 8. Requirements of medical surveillance program
 - 9. Review of 29 CFR 1926
 - 10. Pressure Differential Systems
 - 11. Work practices including hands on or on-job training

SECTION 02080 – ASBESTOS ABATEMENT

12. Personal Decontamination procedures
 13. Air monitoring, personal and area
- E. The Contractor shall provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour Time-Weighted-Average (8-Hr. TWA). In the absence of specific airborne fiber data, provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101.
- F. Submit the following to the Consultant for review. The Contractor shall not start work until the Consultant review these submittals indicating that they are acceptable.
1. Submit copies of certificates from an EPA-approved Asbestos Abatement Workers course for each worker as evidence that the worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.
 2. Submit evidence that the Contractor is certified to perform asbestos abatement work by the State of Connecticut Department of Public Health.
 3. Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the Work Area.
 4. Submit documents verifying that each worker has had a medical examination within the last 12 months as part of compliance with OSHA medical surveillance requirements. Submit, at a minimum, for each worker the following:
 - a. Name and Social Security Number
 - b. Physicians Written Opinion from examining physician including at a minimum the following:
 - 1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
 - 2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - 3) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
 5. Copy of information that was provided to physician in compliance with 29 CFR 1926.1101.
 6. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat/cold stress in the worker.

SECTION 02080 – ASBESTOS ABATEMENT

- G. Submit certification signed by an officer of the firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.

1.12 CONTRACTOR'S AIR SAMPLING RESPONSIBILITY

- A. The Contractor shall be responsible for monitoring airborne asbestos concentrations in the workers' breathing zones and to establish conditions and work procedures for maintaining compliance with OSHA Regulations 29 CFR 1910.1001, and 1926.1101.
- B. The Contractor's air sampling procedures shall ensure proper documentation of all personal air sampling results. The Contractor shall provide a report of the results to the Consultant within 48 hours after sample collection.
- C. All air sampling shall be conducted in accordance with methods described in OSHA Standards 29 CFR 1910.1001, 1926.1101.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.
- B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.
- C. Polyethylene sheet in a roll size to minimize the frequency of joints, shall be delivered to the job site with factory label indicating 4 or 6 mil.
- D. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed and looped to secure filled plastic bags.
- E. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

SECTION 02080 – ASBESTOS ABATEMENT

- F. Surfactant (wetting agent), shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce surfactant to five (5) gallons of water or as directed by manufacturer.
- G. Removal encapsulant shall be non-flammable factory prepared penetrating chemical encapsulant found acceptable to Consultant. Usage shall be in accordance with manufacturer's printed technical data.
- H. The Contractor shall have available spray equipment capable of mixing wetting agent with water and capable of generating sufficient pressure and volume and having sufficient hose length to reach all areas with asbestos or lead.
- I. Impermeable containers are to be used to receive and retain any asbestos and/or lead containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101) Containers must be both air and watertight.
- J. Labels and signs, as required by OSHA Standard 29 CFR 1926.1101 will be used.
- K. Encapsulant shall be bridging or penetrating type which has been found acceptable to the Consultant. Usage shall be in accordance with manufacturer's printed technical data.
- L. HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports where asbestos-containing materials may be disturbed.

2.2 TOOLS AND EQUIPMENT

- A. The Contractor shall provide all tools and equipment necessary for asbestos removal. Provide suitable tools for removal of window components containing, covered, or contaminated with asbestos.
- B. The Contractor's air monitoring professional shall have air monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- C. The Contractor shall have available sufficient inventory of dated purchase orders for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape and air filters.

SECTION 02080 -- ASBESTOS ABATEMENT

- D. The Contractor shall have available power cables and power sources such as generators (where required).
- E. Exhaust air filtration system units shall contain HEPA filter(s) capable of sufficient air exhaust to create negative pressure of at least 0.02 inches of water column within each enclosure with respect to outside areas. Equipment shall be checked for proper operation by smoke tubes or differential pressure gauge before the start of each shift and at least twice during the shift. Adequate exhaust air shall be provided for a minimum of four (4) air changes per hour within the enclosure. No air movement system or air filtering equipment shall discharge unfiltered air outside, nor shall filtered air units be exhausted indoors from the work area.
- F. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometers in diameter or larger.
- G. The Contractor will have reserve units so that the exhaust air filtration system will operate continuously.

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION MEETING

- A. Prior to the start of work a Pre-Construction Meeting will be scheduled and must be attended by the Contractor and any Sub-Contractors. The assigned Contractor Site Supervisor is also required to attend this meeting.
- B. A detailed project schedule and project submittals shall be presented by the Contractor at the Pre-Construction Meeting. Variations, amendments, and corrections to the presented schedule will be discussed, and the Owner and Consultant will inform the Contractor of any scheduling adjustments for this project.
- C. Following the Pre-Construction Meeting, the Contractor shall submit a revised schedule (if needed) no later than one week after the meeting. Upon approval by the owner and Consultant, the Contractor will receive a Notice to Proceed with the work of the Contract.

3.2 WORK AREA PREPARATION

- A. Post signs at all entry and exits to protect against accidental entry.
- B. Where necessary, within regulated areas, shut down electrical power, including receptacles and light fixtures.

SECTION 02080 – ASBESTOS ABATEMENT

Under no circumstances during the decontamination procedures will lighting fixtures be permitted to be operating during the use of amended water. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes and by a licensed electrician.

- C. Shut down and/or isolate heating, cooling, and ventilation air systems or zones to prevent contamination and fiber dispersal to other areas of the structure. During the work, vents within the work area shall be "criticaled" with duct tape and polyethylene sheeting.
- D. Seal off all openings, including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting a minimum of six (6) mils thick, sealed with duct tape.
- E. The owner shall remove non-contaminated moveable items from the work area to the extent possible. The Contractor shall pre-clean contaminated moveable objects within the proposed work areas using HEPA vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from work areas to a temporary location.
- F. Pre-clean fixed objects within the work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with a minimum six (6) mil plastic sheeting sealed with duct tape.
- G. Clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- H. After HEPA vacuum cleaning, work area containment, including walls and floor as applicable, shall be constructed of a minimum of 2 layers of 6 mil polyethylene sheeting.

3.3 DECONTAMINATION SYSTEM

- A. The Contractor shall establish contiguous to the work area, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure.
- B. Access between rooms in the decontamination system shall be through double-flap curtained openings. The clean room, shower and equipment room within the decontamination enclosure, shall be completely sealed ensuring that the sole source of air flow through this area originates from uncontaminated areas outside the work area.

SECTION 02080 – ASBESTOS ABATEMENT

- C. The Contractor shall establish contiguous with the work area an equipment decontamination/waste loadout enclosure consisting of two (2) totally enclosed chambers divided by double flap curtained opening. This enclosure will normally remain close and will only be used during waste removal and must be constructed so as to ensure no personnel enter or exit through this unit.
- D. Construct the decontamination system with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six (6) mil polyethylene sheeting, spray glued or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.

3.4 ASBESTOS REMOVAL PROCEDURE - GENERAL

- A. The Contractor shall have a designated "competent person" on the job at all times to ensure establishment of a proper enclosure system and proper work practices throughout project.
- B. Abatement work will not commence until authorized by the Consultant.
- C. Spray asbestos materials with amended water using airless spray equipment or apply approved removal wetting agent to reduce the release of fibers during removal operation. The Consultant shall pre-approve the use of amended water as the wetting agent.
- D. In order to maintain indoor asbestos concentrations to the minimum, the wet asbestos must be removed in manageable sections. Material drop shall not exceed eight (8) feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights exceeding 15 feet, the Contractor shall provide an enclosed dust-proof chute.
- E. Fill disposal containers as removal proceeds, seal filled containers and clean containers before removal to equipment decontamination system. Wet clean each container thoroughly, double bag and apply caution label. Ensure that workers do not exit the work area thorough the equipment decontamination enclosure.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped, and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.
- G. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris. During cleanup, utilize brooms, rubber dustpan, and rubber squeegees.

SECTION 02080 – ASBESTOS ABATEMENT

- H. Sealed disposal containers, and all equipment used in the work area, shall be included in the cleanup and shall be removed from work areas via the equipment decontamination enclosure at an appropriate time in the cleaning sequence. All asbestos waste shall be placed in 6-mil polyethylene disposal bags and shall be double bagged in the equipment decontamination enclosure before removal from the site.
- I. At any time during asbestos removal, should the Consultant suspect contamination of areas outside the work area(s), he shall cause all abatement work to stop until the Contractor takes steps to decontaminate these areas and eliminate the causes of such contamination. Unprotected individuals shall be prohibited from entering suspected contaminated areas until air sampling and visual inspections certify decontamination.
- J. After completion of the initial final cleaning procedure which includes removal of the inner layer of six (6) mil polyethylene sheeting, but prior to encapsulation, a pre-sealant inspection shall be conducted by the Owner's Consultant. The pre-sealant inspection shall verify that ACM and residual dust has been removed from the work area.

3.5 ASBESTOS REMOVAL PROCEDURE - VINYL ASBESTOS TILE/ MASTIC

- A. Prior to beginning the removal of any resilient floor covering, remove all movable objects from the work area.
- B. In the basement, floor tiles may exist under the sheetrock walls. The Contractor shall demolish these walls to access the tile and mastic underneath.
- C. Before using wet methods to remove resilient flooring, seal openings, and penetrations in the floor to prevent water leakage.
- D. Remove resilient floor covering using the following procedure:
 - 1. Remove binding strips, all vinyl covebase, or other restrictive molding from doorways, walls, etc. Dispose of any materials that have floor mastic on them as asbestos-containing waste.
 - 2. Wet the floor with amended water, removal encapsulant, or detergent solution, so that entire surface is wet. Do not allow run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cover with sheet polyethylene to allow humidity to release tile from floor. Allow time for humidity and water or removal encapsulant to loosen tiles prior to removal.
 - 3. Keep floor continuously wet throughout removal operation.

SECTION 02080 – ASBESTOS ABATEMENT

4. Remove tiles using a manual or powered spade, or stripping machine. Continuously mist floor in area where machine is working with amended water, removal encapsulant or detergent solution. Wet any debris generated as necessary to keep continuously wet. Keep floor where tile has been removed continuously wet until after completion of heavy adhesive residue removal.
- E. Debris and Waste
1. Pick up whole tile material, stack, place in boxes or wrap in felt, and place in labeled disposal bags. At the Contractor's option tiles may be placed directly into durable leak-tight containers.
 2. Shovel broken tiles and debris into nylon reinforced grain bags that are placed in a disposal bag, or place directly in steel leak-tight drums.
 3. Place bagged waste in a second disposal bag during decontamination and dispose of as asbestos waste.
- F. After completion of the removal of flooring material, the Contractor shall remove mastic adhesive using a shot/bead blast machine or chemical remover. If the thickness of the mastic residue is too thick to permit effective use of the shot/bead blast machine, utilize hand scraping methods to remove gross adhesive and then use the shot/bead blast machine to complete the removal of these materials.
- G. After completion of all resilient flooring and adhesive removal work and prior to the removal of critical barriers and decontamination units, the Contractor shall conduct final cleaning.
- ### 3.6 ASBESTOS REMOVAL PROCEDURE – EXTERIOR WINDOW CAULKING
- A. Abatement work will not commence until authorized by the Consultant.
- B. The Contractor shall regulate the asbestos abatement work area by utilizing "asbestos hazard" warning tape and posting appropriate signage.
- C. Interior preparation - The Contractor shall seal windows, vents, doors, or other openings to the exterior abatement area with polyethylene sheeting a minimum of six (6) mils thick.
- D. Exterior preparation - The Contractor shall cover the ground with two layers of six mil polyethylene sheeting extending a minimum of ten (10) feet from the buildings foundation. The ground polyethylene sheeting shall be adequately taped and sealed to the building foundation.

SECTION 02080 – ASBESTOS ABATEMENT

- E. Spray asbestos materials with amended water using airless spray equipment or apply approved wetting agent to reduce the release of fibers during removal operations.
- F. Contractor shall remove window frame studs and associated caulking from the brick surface. Non-contaminated construction waste may be disposed of as construction waste. All caulking material shall be collected and place in two (2) six-mil polyethylene disposal bags.
- G. Decontaminate wood studs, brick openings, and ground polyethylene by HEPA vacuuming and wet wiping.
- H. The Contractor shall dispose of ground polyethylene and critical barriers as asbestos contaminated waste.

3.7 REMOVAL OF ASBESTOS ROOF FLASHING

- A. Following a federal court of appeals decision, the Occupational Safety and Health Administration (OSHA) has issued a final rule on June 29, 1998 removing regulation of asbestos-containing asphalt roof-coatings and sealant from the OSHA standards for occupational exposure to asbestos in construction and shipyard work. However, the USEPA NESHAPS Regulation (40 CFR 61, Subpart M) regarding visible emission and contamination of the environment still apply.
- B. During the removal of asbestos materials, the work area shall be posted with asbestos warning signs to demarcate the regulated area. Only properly trained and Connecticut certified workers will be allowed in the regulated area. The following work practices are required:
 - 1. A "Competent Person" shall supervise all work. Workers shall wear Tyvek disposable protective clothing and half-face air purifying respirators with HEPA cartridges.
 - 2. Roofing material shall be removed in an intact state to the extent feasible.
 - 3. Wet methods shall be used.
 - 4. Dust emitted during the cutting operation shall be collected immediately utilizing a HEPA vacuum.

SECTION 02080 – ASBESTOS ABATEMENT

5. Upon removal, asbestos containing materials shall be wrapped in plastic sheeting, labeled as asbestos containing, and lowered to the ground via dust tight chute, crane, or hoist no later than the end of the work shift. No ACM flashing shall be thrown from the roof on the ground.
6. Windows adjacent to roof removal work within ten feet (10'-0") shall be closed and sealed with one layer of 6-mil polyethylene sheeting.
7. Roof level heating and ventilation air intake sources, if any, shall be isolated or shut down.

3.9 CONSULTANT'S RESPONSIBILITIES

- A. Air sampling shall be conducted by the Consultant to ascertain the integrity of controls that protect the building from asbestos contamination. Independently, the Contractor shall monitor air quality within the work area to ascertain the protection of employees and to comply with OSHA regulations.
- B. The Consultant's air sampling professional shall collect and analyze air samples during the following time periods:
 1. Abatement Period: The Consultant's project monitor may collect samples on a daily basis during the work period. A sufficient number of area samples shall be taken outside of the work area, at the exhaust of the negative pressure system, and outside of the building to judge the degree of cleanliness or contamination of the outdoor environment during removal. Additional samples may be taken inside the work area and decontamination enclosure system, at the discretion of the project monitor.
 2. Post-Abatement Period: The Consultant's project monitor shall conduct re-occupancy final air clearance air sampling following the final cleanup phase of the project, once the "no visible residue" criterion, as established by the project monitor, has been met. Five (5) samples shall be collected inside each work area utilizing aggressive methods to comply with the State of Connecticut Department of Public Health Standards for Asbestos Abatement, sections 19a-332a-12, and 19a-332a-13. Analysis of the samples to determine airborne concentrations of asbestos shall be conducted either by Transmission Electron Microscopy (TEM) method with an average limit of 70.0 structures per square millimeter (s/mm²) of filter surface or by Phase Contrast Microscopy (PCM) with a limit of 0.01 fibers per cubic centimeters of air (f/cm³) in accordance with the above regulations.

SECTION 02080 – ASBESTOS ABATEMENT

- C The Consultant's project monitor shall provide continual evaluation of the air quality outside the work area(s) during removal, using his/her best professional judgements in respect to the CTDPH guideline of 0.010 fibers/cc.
- D If the project monitor determines that the air quality has become contaminated from the project, he/she shall immediately inform the Contractor to cease all removal operations to determine the cause of the problem. No further removal work can take place until the project monitor has assessed that the corrective measures have been implemented.
- E During abatement air samples shall be collected as required to obtain a volume of 1,200 liters. Samples shall be analyzed by Phase Contrast Microscopy (PCM) methodology using the NIOSH 7400 protocol.

3.10 CONSULTANT'S INSPECTION RESPONSIBILITIES

- A. Inspections shall be conducted by the Consultant in order to document the progress of the abatement work as well as to oversee the procedures and practices employed by the abatement Contractor.
- B. The Consultant shall perform the following inspections during the course of abatement activities:
 - 1. Pre-commencement Inspection. Pre-commencement inspections shall be performed at the time requested by the abatement Contractor. During the course of the pre-commencement inspection, the Consultant shall inspect the containment and surrounding work areas. This shall include, but not be limited to, inspection of barrier integrity, the worker decontamination facility, utilization of power sources, and location and capacity of negative air filtration devices. If, during the course of the pre-commencement inspection, deficiencies are found, the Contractor shall perform the necessary adjustments in order to obtain compliance. The Contractor shall not start removal until the containment pass the pre-commencement inspection.
 - 2. Work Area Inspections. Work area inspections shall be conducted on a daily basis at the discretion of the Consultant. During the course of the work inspections, the Consultant shall observe the Contractor's removal procedures, verify barrier integrity, monitor negative air filtration devices, assess project progress, and inform the abatement Contractor of specific remedial activities if deficiencies are noted.
 - 3. Final Visual Inspection. The Consultant shall conduct a final visual inspection upon request of the abatement Contractor.

SECTION 02080 – ASBESTOS ABATEMENT

Following the completion of removal and prior to final air clearance sampling, the Consultant shall conduct a final visual inspection inside each work area. If residual dust or debris is identified during the course of the final inspection, the Contractor shall comply with the request of the Consultant in order to render the area "dust free."

3.11 DISPOSAL OF ASBESTOS

- A. All disposal of asbestos-containing and/or asbestos contaminated material must be in compliance with requirements of and authorized by the office of Solid Waste Management, Department of Environmental Protection (DEP), State of Connecticut.
- B. Disposal approvals shall be obtained before commencing asbestos removal.
- C. A copy of approved disposal authorization shall be provided to the Owner and Consultant and any required federal, state, or local agencies.
- D. Copies of all Waste Shipment Record (WSR) will be retained by the Consultant as part of the project file. The landfill operator will sign the receipts and the quantity of asbestos debris leaving the job site and arriving at the landfill acknowledged.
- E. All asbestos debris shall be transported in covered, sealed vans, boxes, or dumpsters, which are physically isolated from the driver by an airtight barrier. All vehicles must be properly licensed to meet DOT requirements.
- F. Any vehicle used to store or transport ACM will either be removed from the property at night, or securely locked and posted to prevent disturbance.

END OF SECTION

Y:\WORD\Projects\Specs\03-191.10 spec.doc

SECTION 02080 – ASBESTOS ABATEMENT

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Pressure Differential Systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature _____

Social Security No _____

Printed Name _____ Witness _____

SECTION 02091 – LEAD BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY OF WORK

- A. Work of this Section includes requirements for worker protection and waste disposal related to demolition work involving components and surfaces containing lead paint.
- B. The procedures referenced herein shall be utilized during required demolition work that might impact lead-based paint. The Contractor shall refer to lead paint screening report for components and surfaces identified as having toxic level of lead paint by industry standards.
- C. This section does not involve lead abatement, but identifies worker protection requirements for trades involved in the renovation. The removal of the painted surfaces may result in dust and debris exposing workers to levels of lead above the OSHA "Action Level". Worker protection, training, and engineering controls referenced herein shall be strictly adhered to, until completion of exposure assessment with results indicating exposures below the "Action Level".

1.3 DEFINITIONS

The following definitions relative to lead paint as used in this Section are offered:

1. ACTION LEVEL (AL): The allowable employee exposure, without regard to use of respiratory protection, to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current action level is thirty micrograms per cubic meter of air (30 ug/m³).
2. AREA MONITORING: The sampling of lead concentrations, which is representative of the airborne lead concentrations that may reach the breathing zone of personnel potentially exposed to lead.
3. BIOLOGICAL MONITORING: The analysis of a person's blood and/or urine, to determine the level of lead concentration in the body.

SECTION 02091 – LEAD BASED PAINT

4. CHANGE ROOM: An area provided with separate facilities for clean protective work clothing and equipment and for street clothes, which prevents cross-contamination.
5. COMPETENT PERSON: A person employed by the Contractor who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions, and who has authorization to take prompt corrective measures to eliminate them as defined by OSHA.
6. EXPOSURE ASSESSMENT: An assessment conducted by an employer to determine if any employee may be exposed to lead at or above the action level.
7. "HIGH EFFICIENCY PARTICULATE AIR" (HEPA): A type of filtering system capable of filtering out particles of 0.3 microns diameter from a body of air at 99.97% efficiency or greater.
8. LEAD: Refers to metallic lead, inorganic lead compounds and organic lead soaps. Excluded from this definition are other organic lead compounds.
9. LEAD WORK AREA: An area enclosed in a manner to prevent the spread of lead dust, paint chips, or debris resulting from lead-containing paint disturbance.
10. LEAD PAINT: Refers to paints, glazes and other surface coverings containing a toxic level of lead.
11. PERMISSIBLE EXPOSURE LIMIT (PEL): The maximum allowable limit of exposure to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current PEL is fifty micrograms per cubic meter of air (50 ug/m^3). Extended workdays lower the PEL by the formula: $\text{PEL equals } 400 \text{ divided by the number of hours of work.}$
12. PERSONAL MONITORING: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62 and 29 CFR 1910.1025. Samples shall be representative of the employee's work tasks. Breathing zone shall be considered an area within a sphere with a radius of 18 inches and centered at the nose or mouth of an employee.
13. RESOURCE CONSERVATION RECOVERY ACT (RCRA): RCRA establishes regulatory levels of hazardous chemicals. There are eight (8) heavy metals of concern for disposal: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Six (6) of the metals are typically found in paints, excluding selenium and silver.
14. TOXIC LEVEL OF LEAD: A level of lead, when present in dried paint or plaster, contains more than 0.50% lead by dry weight as measured by atomic absorption spectrophotometry (AAS) or 1.0 mg/cm^2 as measured by on-site testing utilizing an x-ray fluorescence analyzer. (Term is specific to State of CT regulations and HUD guidelines only)

SECTION 02091 – LEAD BASED PAINT

15. TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP): The U.S. Environmental Protection Agency (USEPA) required sample preparation and analysis for determining the hazard characteristics of a waste material.

1.4 REGULATIONS AND STANDARDS

The following regulations, standards, and ordinances of federal, state, and local agencies are applicable and made a part of this specification by reference:

1. American National Standards Institute (ANSI)
ANSI 288.2 - 1980 Respiratory Protection
2. Code of Federal Regulation (CFR)
 - a. 29 CFR 1910.134 - Respiratory Protection
 - b. 29 CFR 1910.1025 - Lead
 - c. 29 CFR 1926.62 - Lead in Construction Interim Final Rule
 - d. 29 CFR 1910.1200 - Hazard Communication
 - e. 29 CFR 1926.59 - Hazard Communication in Construction
 - f. 29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists
 - g. 29 CFR 1926.57 - Ventilation
 - h. 40 CFR 260 - Hazardous Waste Management Systems: General
 - i. 40 CFR 261 - Identification and Listing of Hazardous Waste
 - j. 40 CFR 262 - Generators of Hazardous Waste
 - k. 40 CFR 263 - Transporters of Hazardous Waste
 - l. 40 CFR 264 - Owner/Architect s and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - m. 40 CFR 265 - Interim Statutes for Owner/Architect s and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - n. 40 CFR 268 - Lead Disposal Restrictions
 - o. 40 CFR 172 - Hazardous Materials Tables and Communication Regulations
 - p. 40 CFR 178 - Shipping Container Specifications
 - q. 40 CFR 270 and 124 - Hazardous Waste Permits
3. Underwriters Laboratories, Inc. (UL)
UL586 - 1990 High Efficiency Particulate Air Filter Units

SECTION 02091 – LEAD BASED PAINT

1.5 QUALITY ASSURANCE

A. Hazard Communication Program

The Contractor shall establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

B. Compliance Plan (Site Specific)

The contractor shall establish a written compliance plan, which is specific to the project site, to include the following:

- a. A description of work activity involving lead including equipment used, material included, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices.
- b. Methods of engineering controls to be used to control lead exposure.
- c. The proposed technology the Contractor will implement in meeting the PEL.
- d. Air monitoring data documenting the source of lead emissions.
- e. A detailed schedule for implementing the program, including documentation of appropriate supply of equipment, etc.
- f. Proposed work practice, which establishes proper protective work clothing, housekeeping methods, hygiene facilities, and practices.
- g. Worker rotation schedule, if proposed, to reduce TWA.
- h. A description of methods for informing workers of potential lead exposure.

C. Hazardous Waste Management

The Contractor shall establish a Hazardous Waste Management Plan, which shall comply with applicable regulations and address the following:

- a. Identification of hazardous wastes
- b. Estimated quantity of waste to be disposed of
- c. Names and qualifications of each sub-contractor that will be transporting, storing, treating, and disposing of wastes
- d. Disposal facility location and 24 hour point of contact
- e. Establish EPA state hazardous waste and identification numbers if applicable
- f. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes

SECTION 02091 – LEAD BASED PAINT

- g. List of waste handling equipment to be used in performing the work to include cleaning, volume reduction, if applicable, and transport equipment
- h. Qualifications of laboratory to be utilized for TCLP sampling and analysis
- i. Spill prevention, containment, and cleanup contingency measures
- j. Work plan and schedule for waste containment, removal, treatment, and disposal

D. Medical Examinations

- 1. Before exposure to lead contaminated dust, provide workers with a comprehensive medical examination as required by 29 CFR 1910.1025 and 29 CFR 1926.62.
- 2. The examination shall not be required if adequate records show that employees have been examined as required by 29 CFR 1926.62 within the last year.
- 3. Medical examination shall include, at a minimum, approval to wear respiratory protection and biological monitoring.

E. Training

- 1. The Contractor shall ensure that workers are trained to perform lead paint disturbing activities and disposal operations prior to the start of work in accordance with 29 CFR 1926.62.

F. Respiratory Protection Program

- 1. The Contractor shall furnish each employee required to wear a negative pressure respirator with a respirator fit test at the time of initial fitting and at least once every six (6) months thereafter as required by 29 CFR 1926.62.
- 2. The Contractor shall establish a Respiratory Protection Program in accordance with ANSI Z88.2, 29 CFR 1910.134, and 29 CFR 1926.62.

1.6 SUBMITTALS

A. The Contractor shall submit to the Owner/Architect the following submittals prior to start of work:

- 1. Copies of medical records for each employee to be used on the project, including results of biological monitoring and a notarized statement by the examining physician that such an examination took place.
- 2. Copies of workers' training certificates.

SECTION 02091 – LEAD BASED PAINT

3. Submit record of successful respirator fit testing performed by a qualified individual within the previous six (6) months, for each employee to be used on this project with the employee's name and social security number with each record.
 4. The name and address of Contractor's blood lead testing lab, OSHA-CDC listing, and Certification in the State of Connecticut.
 5. The name and address of Contractor's personal air monitoring and waste disposal lead testing laboratory.
 6. Name, address, and ID number of the hazardous waste hauler, waste transfer route, and proposed disposal site.
- B. The Contractor shall submit to the Owner/Architect the following submittals during the job:
1. Results from personal air samples.
 2. Certificates, medical and fit test records 24 hours in advance of any new employee starting on the project.
- C. The Contractor shall submit to the Owner/Architect the following submittals upon completion of the work:
1. Copies of manifests and receipts acknowledging disposal of all hazardous waste material from the project showing delivery date, quantity, and appropriate signature of landfill's authorized representative.

1.7 PERSONAL PROTECTION

- A. Exposure Assessment
1. The Contractor shall determine if any worker will be exposed to lead at or above the action level.
 2. The exposure assessment shall identify the level of exposure a worker would be subjected to without respiratory protection.
 3. The exposure assessment shall be achieved by obtaining personal monitoring samples representative of a full shift at least (8-hour TWA).
 4. During the period of the exposure assessment, the Contractor shall institute the following procedures for protection of workers.
 - a. Protective clothing shall be utilized
 - b. Respiratory protection
 - c. Change areas shall be provided
 - d. Handwashing facilities and shower

SECTION 02091 – LEAD BASED PAINT

- e. Biological monitoring
- f. Training of workers

B. Respiratory Protection

1. The Contractor shall furnish appropriate respirators approved by NIOSH/MSHA for use in atmospheres containing lead dust.
2. Respirators shall comply with the requirements of 29 CFR 1926.62.
3. Workers shall be instructed in all aspects of respiratory protection.
4. The Contractor shall have an adequate supply of HEPA filter elements and spare parts on site for all types of respirators in use.
5. The following minimum respirator protection for use during paint removal or demolition of components and surfaces with lead paint shall be the 1/2 mask air purifying respirator with high efficiency filters for exposures (not in excess of 500 ug/m³ or 10 x PEL).

C. Protective Clothing

1. Personal protective clothing shall be provided for all workers, supervisors, and authorized visitors entering the work area.
2. Each worker shall be provided with a minimum of two (2) complete disposable coverall suits.
3. Removal workers shall not be limited to two (2) suits, and the Contractor shall supply additional suits as necessary.
4. Under no circumstances shall anyone entering the abatement area be allowed to re-use a contaminated disposable suit.
5. Disposable suits, such as TYVEK suits, and other personal protective equipment (PPE) shall be donned prior to entering the lead control area. A change room shall be provided for workers to put on suits and other personal protective equipment with separate areas to store their street clothes.
6. Eye protection for personnel engaged in lead operations shall be furnished when the use of a full-face respirator is not required.
7. Goggles with side shields shall be worn when working with power tools or a material that may splash or fragment, or if protective eye wear is specified on the Material Safety Data Sheet (MSDS) for a particular product to be used on the project.

SECTION 02091 – LEAD BASED PAINT

1.8 PERSONAL MONITORING

- A. General. The Contractor is required to perform the personal air sampling activities during lead paint disturbing work. The results of such sampling shall be posted, provided to individual workers and submitted to the Owner/Architect as described herein.
- B. Sampling. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken every day after the first day if working conditions remain unchanged, but must be taken every time there is a change in removal operations, either in terms of the location or the type of work. Sampling will be used to determine eight-hour Time-weighted averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 29 CFR 1926.62 and 29 CFR 1910.1025.
- C. Sampling Results. Air sampling results shall be reported to individual workers in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analysts' name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter ($\mu\text{g}/\text{m}^3$).
- D. Testing Laboratory. The Contractor's testing lab shall be participating in AIHA's Environmental Lead Laboratory Accreditation Program (ELLAP). The Contractor shall submit to the Consultant for review and acceptance, the name and address of the laboratory, certification(s) of AIHA participation, a listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control Program.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Any substitution in materials, equipment, or methods to those specified shall be approved by the Owner/Consultant prior to use. Any requests for substitution shall be provided in writing to the Owner/Architect. The request shall clearly state the rationale for the substitution.
- B. Submit to the Owner/Architect product data of all materials and equipment and samples of all materials to be considered as an alternate.

SECTION 02091 – LEAD BASED PAINT

- C. Product data shall consist of manufacturer; catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, material safety data sheets (MSDS), and other standard descriptive data. Submittal data shall be clearly marked to identify pertinent materials, products or equipment and show performance characteristics and capacities.
- D. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product or material with integrally related parts and attachment devices.

2.2 MATERIALS AND PRODUCTS

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.
- B. Damaged or deteriorating materials shall not be used and shall be removed from the premises.
- C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape, and air filters.
- D. Materials
 1. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating 6 mil.
 2. Polyethylene disposable bags shall be six (6) mil. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed and looped to secure filled plastic bags.
 3. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
 4. Impermeable containers are to be used to receive and retain any lead containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be labeled in accordance with EPA and DOT standards.)
 5. HEPA filtered exhaust systems shall be used during powered dust generating abatement operations. The use of powered equipment without HEPA exhausts is prohibited.

SECTION 02091 – LEAD BASED PAINT

2.3 TOOLS AND EQUIPMENT

- A. Provide suitable tools for all lead disturbing operations.
- B. The Contractor shall have available power cables or sources such as generators (where required).
- C. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining 99.97% of all monodispersed particles of 0.3 micrometers in diameter.

PART 3 - EXECUTION

3.1 WORKER PROTECTION/TRAINING

The Contractor shall provide appropriate training, respiratory and other personal protection, and biological monitoring for each worker and ensure proper usage during potential lead exposure and the initial exposure assessment.

3.2 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor is responsible for establishing and maintaining controls referenced herein to prevent dispersal of lead contamination from the lead work area.
- B. The Contractor is also responsible for conducting work with applicable federal, state, and local regulations as referenced herein.

3.3 WORKER HYGIENE PRACTICES (*Required during initial exposure assessment and if results of air sampling are above OSHA Action Level*)

- A. Work Area Entry. Workers shall don personal protective equipment prior to entering work area, including respiratory protection, disposable coveralls, gloves, headgear, and footwear.
- B. Work Area Departure. While leaving respirators on, workers shall remove all gross contamination, debris, and dust from disposable coveralls and proceed to change room and remove coveralls and footwear and place in hazardous waste disposal container.
- C. Handwashing Facilities. All workers must wash their hands and faces upon leaving the work area.

SECTION 02091 – LEAD BASED PAINT

- D. Equipment. All equipment used by workers inside the work area shall be wet wiped or bagged for later decontamination before removal from the work area.
- E. Prohibited Activities. Under no circumstances shall workers eat, drink, smoke, chew gum, or tobacco, or remove their respirators in the work area.
- F. Shock Hazards. The Contractor is responsible for using safe procedures to avoid electrical hazards. All temporary electrical wiring will be protected by ground fault circuit interrupters (GFI).

3.4 LEAD WORK AREA *(Required during initial exposure assessment and if results of air sampling are above OSHA Action Level)*

- A. The Contractor shall place warning signs at all entrances and exits from the work area. Signage shall be a minimum of 20" x 14" and shall state the following:

**WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING OR DRINKING
UNAUTHORIZED ENTRY PROHIBITED**

- B. The Contractor shall designate a change room as specified in this Section. The change room shall consist of two (2) layers of sheeting on the floor surface adjacent to the lead work area. The change room shall have separate storage facilities for street clothes to avoid cross contamination.
- C. The Contractor shall provide potable water for hand and face washing and provide a portable shower unit.
- D. The Contractor shall place six-mil polyethylene drop clothes on floor/ ground surfaces prior to beginning removal work to facilitate clean-up.

3.5 WORK AREA CLEAN UP

- A. The Contractor shall remove all loose chips and debris from floor surfaces and place in hazardous waste disposal bags.
- B. The Contractor shall HEPA vacuum adjacent surfaces to remove dust and debris.
- C. Polyethylene drop cloths shall be properly disposed of.

SECTION 02091 – LEAD BASED PAINT

3.6 WASTE DISPOSAL

- A. The Consultant has conducted a Toxicity Characteristic Leachate Procedure (TCLP) test to characterize the nature of the waste. The result was below detectable limits (BDL) for lead. Therefore, the demolition debris can be disposed of as general construction waste.
- B. The Contractor's contractual liability shall be the proper disposal of all non-hazardous and hazardous wastes generated at the site in accordance with all applicable federal, state, and local regulations as referenced herein.

END OF SECTION

Y:\WORD\Projects\Specs\03-191.10 spec.doc

SECTION 02085 – REMOVAL AND DISPOSAL OF PCB-CONTAINING BALLAST

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Refer to all drawings and other Sections of these specifications to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

1.2 SUMMARY OF WORK

- A. Work of this Section includes, but is not necessarily limited to, all which is necessary for complete removal and disposal of all PCB-containing ballast that exist inside the light fixtures and will be impacted by proposed demolition of the building.
- B. Coordinate this Section with other Sections of these Specifications for the actual quantities of the work required. Refer to the hazardous materials survey as attached to identify locations of PCB-containing ballast.
- C. The ballast in the Kitchen and the Restroom Area were examined "in-situ" and did not have "No PCBs" labels. These ballasts of these seven (7) fixtures need to be removed and properly disposed of to facilitate demolition:
- D. The Contractor is responsible for verification of actual quantities of PCB-containing ballast requiring removal and disposal. This verification shall include an on-site walk-through of the building.
- E. The Contractor, under this Section, shall provide all materials, labor, equipment, and appliances as necessary to properly remove and dispose of PCB-containing ballast existing in the structure.

1.3 REGULATIONS AND STANDARDS

- A. The following regulations and standards of federal and state agencies apply to the disposal of PCB-containing ballast, and are made part of this Specification by reference.
 - 1. Toxic Substance Control Act (TSCA) (40 CFR Part 761).
 - 2. Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Law).

SECTION 02085 – REMOVAL AND DISPOSAL OF PCB-CONTAINING BALLAST

3. Connecticut General Hazardous Statute 22A454, 456.
- B. Under TSCA, items that contain more than 500 parts per million (ppm) of PCBs are classified as PCB material, items that contain between 50 ppm and 500 ppm of PCB area classified as PCB-contaminated and items that contain less than 50 ppm of PCBs are classified as non-PCB items.

Under the Small Capacitor Exemption, TSCA has allowed the disposal of non-leaking, intact "small capacitors," defined as containing less than three pounds of PCB dielectric fluid, in a municipal solid waste landfill. Light ballast containing a small PCB capacitor are covered under this category. The intent of the "small capacitor" disposal rule is for "random disposal" in a landfill by "householders and other infrequent disposers." When commercial and industrial entities dispose of large quantities of small PCB capacitors, the EPA strongly encourages voluntary collection and disposal of PCB capacitors in chemical waste landfills or high-temperature incinerators.

- C. Under the "Superfund" laws, PCBs are specifically listed as a hazardous substance. The "release" of more than one pound of PCBs into the environment triggers a "Superfund" notification and cleanup requirement.

Since twenty-five ballast collectively contain approximately one pound of PCBs, the disposal of twenty-five or more PCB-containing ballast in a landfill would trigger a "Superfund" action.

- D. The State of Connecticut General Hazardous Waste Statute 22A 454, 456 requires that PCB ballast must be incinerated or sent to a chemical waste landfill. The statute defines PCB waste, including PCB ballast, as Connecticut Regulated Wastes.

- E. Other Regulations: The other relevant regulations affecting disposal of PCBs include the following.

1. Department of Transportation (DOT) regulations - DOT regulation HM-181 regulates transportation of hazardous materials, including PCBs.
2. Occupational Safety and Health Administration (OSHA) - OSHA regulates workers' safety and exposure to a variety of chemicals including PCBs.
3. Resource Conservation and Recovery Act (RCRA) - RCRA regulates wastes, which fail Toxic Characteristic Leachate Procedure (TCLP) and which contain more than 50 ppm of PCBs.

SECTION 02085 – REMOVAL AND DISPOSAL OF PCB-CONTAINING BALLAST

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 GENERAL

Nearly all fluorescent light ballast manufactured prior to 1979 contain capacitors that contain PCBs. Ballast installed as late as 1985 may contain PCB capacitors. Fluorescent light ballast which are not labeled as "No PCBs" must be assumed to contain PCBs unless proven otherwise by quantitative analytical testing.

Capacitors in fluorescent light ballast labeled as non-PCB containing may contain diethylhexyl phthalate (DEHP). DEHP was the primary substance to replace PCBs for small capacitors in fluorescent lighting ballast. DEHP is a toxic substance, a suspected carcinogen, and is listed under RCRA and the Superfund law as a hazardous waste. Therefore, Superfund liability exists for landfilling DEHP ballast.

3.2 BALLAST REMOVAL AND PACKAGING

- A. The Contractor shall remove all ballast from light fixtures with care.
- B. The Contractor shall pack all ballast in drums (DOT approved 55 gallon drums) with care, so as not to cause ballast to leak as a direct result of removal and packing.
- C. The Contractor shall segregate all leaking ballast from non-leaking ballast, separately package leaking ballast in plastic bags, and place these bags in a drum along with non-leaking ballast.
- D. The Contractor shall label all drums properly. The Contractor shall supply labels. Labels shall contain the following information:
 - 1. Contents of drum
 - 2. DOT description
 - 3. Name, address, and telephone number of the Owner (i.e., the Generator)
 - 4. Emergency telephone numbers
 - 5. Date on which drum was filled with ballast
 - 6. Class 9 label

SECTION 02085 – REMOVAL AND DISPOSAL OF PCB-CONTAINING BALLAST

- E. The Contractor shall ensure that no other material or waste is contained in the drums except the ballast from fluorescent light fixtures.
- F. The Contractor shall not load drum with more than 750 pounds of gross weight.
- G. The Contractor shall not use any absorbent material to pack ballast in drums.
- H. The Contractor shall not use any plastic liners in drums.
- I. The Contractor shall not use an "Overpack" drums or equivalent.
- J. Each drum shall be sealed and stored in a secure area to minimize inadvertent damage or vandalism.
- K. The ballast will be removed by personnel wearing chemically resistant gloves, eye protection, and proper respiratory protection.

3.3 DISPOSAL

- A. At the completion of the PCB removal phase of the project, a transporter licensed to haul PCB waste shall be contacted for disposal of the PCB waste. Chain of custody records shall be maintained which include the date of pickup, number of drums, name of the PCB transporter, and destination of PCB waste disposal. The Contractor shall be responsible for all disposal costs associated with the PCB waste generated during this project.
- B. The Contractor shall provide a Certificate of Recycling and Disposal (CRD) pursuant to 40 CFR Part 761 Subpart K.

END OF SECTION

Y:\WORD\Projects\Specs\03-191.10 spec.doc

SECTION 02086 -- REMOVAL AND DISPOSAL OF MERCURY-CONTAINING
FLUORESCENT LAMPS AND THERMOSTATS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Refer to all drawings and other Sections of these specifications to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

1.2 SUMMARY OF WORK

- A. Work of this Section includes, but is not necessarily limited to, all which is necessary for complete removal and disposal of all mercury-containing fluorescent lamps and thermostats that exist in the interior of the building structure and that will be impacted by proposed demolition of the building.
- B. Coordinate this Section with other Sections of these Specifications for the actual quantities of the work required. Refer to the hazardous materials survey as attached to identify locations of mercury-containing lamps and thermostats.
- C. The Serving Area has two (2) thermostats that require removal to facilitate demolition.
- D. The Contractor is responsible for verification of actual quantities of mercury-containing light bulbs and thermostats requiring removal and disposal. This verification shall include an on-site walk-through of the building.
- E. The Abatement Contractor, under this Section, shall provide all materials, labor, equipment, and appliances as necessary to properly remove and dispose of mercury-containing lamps requiring removal. The Contractor shall comply with all federal, state, and local regulations governing such removal and disposal.

PART 2 - PRODUCTS

NOT USED

SECTION 02086 – REMOVAL AND DISPOSAL OF MERCURY-CONTAINING
FLUORESCENT LAMPS AND THERMOSTATS

PART 3 - EXECUTION

3.1 GENERAL

The fluorescent lamps contain vaporized mercury. Such lamps need to be disposed of through a recycling process. The recycling process involves disassembling the lamps and separating the physical components of the lamps (namely glass, aluminum and mercury-contaminated coatings and powder). This work will be performed in a Lamp Processor's facility after the lamps are removed from the job site. The thermostats may contain liquid mercury.

3.2 LAMP AND THERMOSTAT REMOVAL AND RECYCLING

- A. The Disposal Contractor and Lamp and Thermostat Processor shall possess all federal, state, and local permits and authorizations for handling mercury-containing lamps.
- B. The Disposal Contractor and Lamp and Thermostat Processor's workers who are handling mercury-containing lamps shall be 24-hour OSHA trained (29 CFR 1910.120). All supervisors shall be 40-hour OSHA trained. All training certificates shall be made available by the Disposal Contractor.
- C. The Disposal Contractor and Lamp and Thermostat Processor shall possess written Health and Safety Programs, Hazard Communication Programs, and Emergency Response Plans.
- D. The Abatement Contractor shall remove all lamps and thermostats from fixtures with care so as to eliminate breakage.
- E. The Abatement Contractor will pack lamps and thermostats in the boxes of material being shipped. Lamps and thermostats will be packed tightly to eliminate breakage during shipping. "Shortage" boxes will be supplied by the Disposal Contractor.
- F. The Abatement Contractor will follow packing instructions supplied by the Disposal Contractor.
- G. The Abatement Contractor will tape shut all packed containers of lamps and thermostats and prepare these containers for shipping. Packed boxes of lamps and thermostats will be palletized and shrink wrapped. Fiber drums should not be palletized without the agreement of the Disposal Contractor.

SECTION 02086 – REMOVAL AND DISPOSAL OF MERCURY-CONTAINING
FLUORESCENT LAMPS AND THERMOSTATS

- H. The Disposal Contractor shall arrange for transportation of all packed lamps and thermostats to the Processor's facility.
- I. The Disposal Contractor shall provide a Waste Manifest signed by the Processor within ten days of the receipt of the shipment.

END OF SECTION

Y:\WORD\Projects\Specs\03-191.10 spec.doc

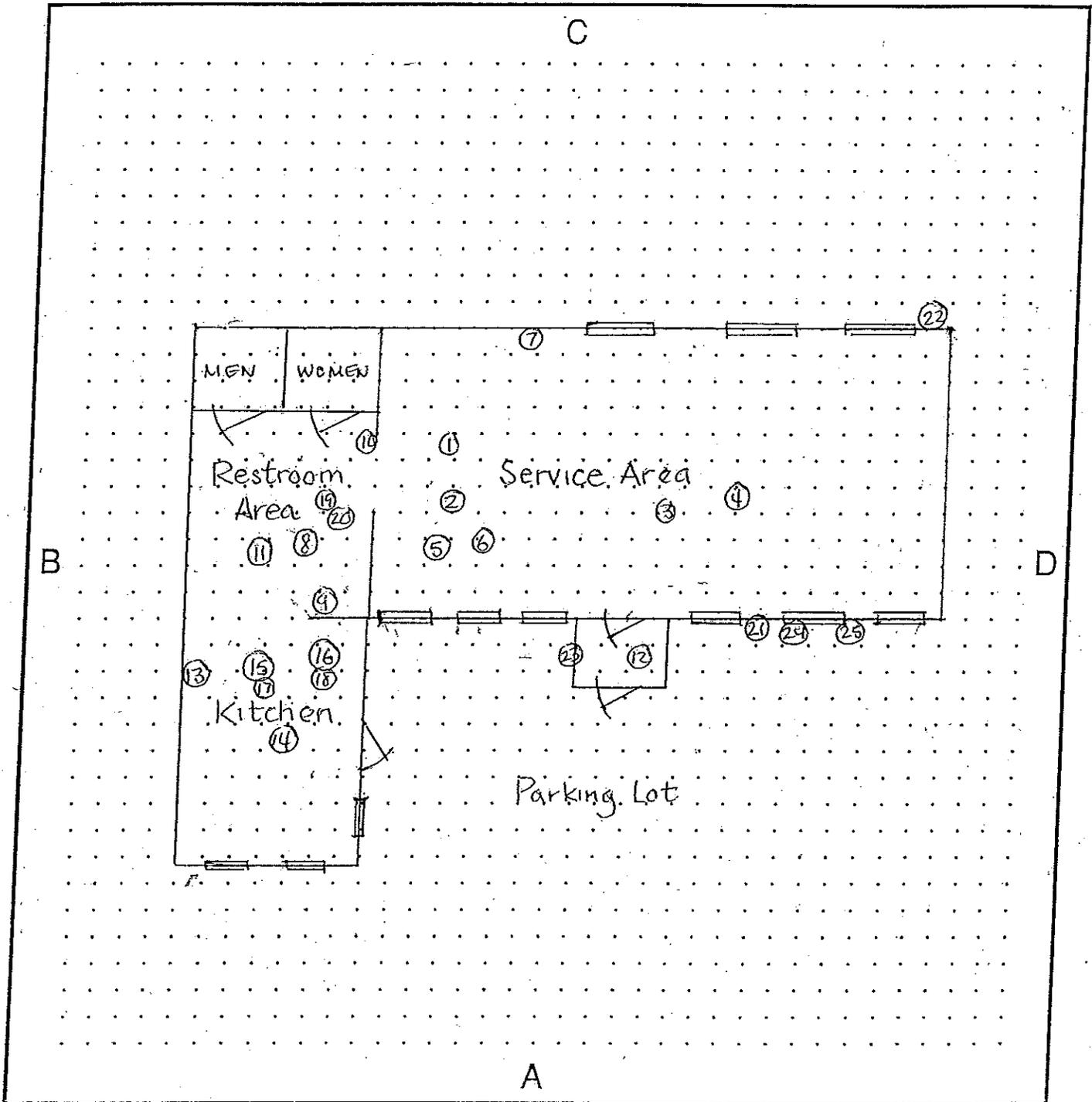
ATTACHMENT A
DRAWING NOS. HM-1



EnviroScience Consultants inc.

Environmental Engineering ❖ Industrial Hygiene ❖ Laboratory Services

Job No: 03-191.10 Date: AUGUST 4, 2003
Address: 56 Ferry St., Middletown, CT
Apartment / Building: Marino Restaurant
Diagram of: Floor Plan - Bulk Sample Locations, Room Designations



Ⓝ ROOM NUMBER DOOR WINDOW Ⓝ Sample Location PAGE 1 OF 1

ATTACHMENT B
HAZARDOUS MATERIALS SURVEY REPORT



October 23, 2003

BUSINESS FILE

Ms. Denise Bradley
Department of Planning, Conservation and Development
City of Middletown
245 DeKoven Drive
Middletown, CT 06457

RE: Hazardous Materials Survey Report
56 Ferry Street, Middletown
EnviroScience Project No. 03-191.10

Dear Ms. Bradley:

Enclosed is the report for the hazardous materials survey performed at Marino's Restaurant at 56 Ferry Street in Middletown, Connecticut.

The initial survey was performed on August 4, 2003, by EnviroScience Consultants, Inc.'s (EnviroScience's) licensed inspector and included an asbestos inspection, screening for lead-based paint, and assessment of PCB-containing ballasts and possible mercury hazards.

The information summarized in this document is for the above-mentioned materials only. It does not include information on other hazardous materials that may exist in the property (such as underground storage tanks).

If you have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 953-2700, extension 3008. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Frank Mills
Senior Environmental Consultant

FM:ah
Enclosure

YAWORD\PROJECTS\03\03-191.10.DOC



EnviroScience Consultants inc.
Environmental Engineering ♦ Industrial Hygiene ♦ Laboratory Services

Office Locations:
Newington, CT
Fairfield, CT
Boston, MA

**HAZARDOUS MATERIALS SURVEY REPORT
MARINO' BAKERY
56 FERRY STREET
MIDDLETOWN, CONNECTICUT**

Prepared for:

**Ms. Denise Bradley
Department of Planning, Conservation
and Development
City of Middletown
Middletown, Connecticut**

Prepared by:

**EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, Connecticut 06111**

EnviroScience Project No. 03-191.10

October 23, 2003

TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION.....	1
2.0 ASBESTOS INSPECTION	1
2.1 Results.....	2
2.2 Discussion.....	3
2.3 Conclusion	3
2.4 Cost of Abatement	4
3.0 LEAD-BASED PAINT SCREENING.....	4
3.1 Results.....	5
3.2 Conclusion	5
4.0 PCB-CONTAINING FLUORESCENT BALLASTS AND MERCURY-CONTAINING LAMPS	5
4.1 PCB Ballasts	5
4.2 Mercury Containing Thermostats	6
5.0 HAZARDOUS MATERIAL IN ROOF-TOP HEATING/COOLING UNITS.....	6

APPENDICES

APPENDIX I	ASBESTOS SAMPLE RESULTS AND CHAIN OF CUSTODY (INITIAL SURVEY)
APPENDIX II	ASBESTOS SAMPLE RESULTS AND CHAIN OF CUSTODY (ADDITIONAL SAMPLING)
APPENDIX III	LEAD PAINT TESTING PROCEDURES AND EQUIPMENT
APPENDIX IV	LEAD TESTING FIELD DATA SHEETS

1.0 INTRODUCTION

On August 4, 2003, EnviroScience Consultants, Inc.'s (EnviroScience's) Environmental Technician/Consultant, Frank Mills, a State of Connecticut Licensed Asbestos and Lead Paint Inspector, performed a hazardous materials survey of the Marino Restaurant at 56 Ferry Street, which is slated for demolition. Included in the inspection were the kitchen, the dining room, and the restroom area of the building. Adjoining buildings on the north side of the restaurant were not inspected.

The inspection was limited by the condition of the building. The roof over the area referred to here as the restroom area had collapsed. Although several samples were collected from this area, the hazards of area prevented the inspector from making an exhaustive inspection. In addition, access was never found to cellar areas, where further suspect asbestos-containing materials may be found.

This inspection was performed in response to the planned demolition the restaurant, and consisted of a survey for asbestos containing materials (ACM), a screening of painted surfaces for lead and an evaluation of fluorescent light fixtures for PCB ballasts and light tubes for mercury.

The interior and exterior of the target areas were inspected in accordance with EnviroScience's written proposal dated February 10, 2003.

2.0 ASBESTOS INSPECTION

During this inspection, suspect ACM were separated into three USEPA categories. These categories are: thermal system insulation (TSI), surfacing ACM, and miscellaneous ACM. TSI includes all materials used to prevent heat loss or gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings. Surfacing ACM includes all ACM that is sprayed, troweled, or otherwise applied to an existing surface. Surfacing ACM is commonly used for fireproofing, decorative, and acoustical applications. Miscellaneous materials include all ACM not listed in thermal or surfacing, such as linoleum, vinyl asbestos flooring, and ceiling tiles.

All suspect ACM were sampled. Materials that were sampled were analyzed by Polarized Light Microscopy (PLM). If suspect ACM was not sampled, it was assumed to contain asbestos.

Finally, all ACM were quantified in linear and square footage, depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are listed in Table 1 of the Results section.

2.1 Results

Utilizing the USEPA protocol and criteria, the following materials were determined to be ACM:

TABLE 1

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
Serving Area	Glue daubs with ceiling tile	5% Anthophyllite	840 SF	8-4FM-2
Serving Area	Red flooring under plywood	5% Chrysotile	1290 SF	8-4FM-5
Restroom Area	Suspended ceiling tile (transite)	40% Chrysotile	450 SF	8-4FM-8
Restroom Area	12" tan floor tile	8 % Chrysotile	450 SF	8-4FM-11
Kitchen	9" dappled floor tile	10% Chrysotile	280 SF	8-4FM-16

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
EXTERIOR				
Roof of restroom area and other rooms	Roof flashing	8% Chrysotile	1570 SF	8-4FM-20
Rear of building	Siding (transite)	40% Chrysotile	550 SF	8-4FM-22
All windows	Window caulk	1.25% Chrysotile	88 LF	8-4FM-24a

LF = Linear Feet, SF = Square Feet

Utilizing the USEPA protocol and criteria, the following materials were determined to be non-ACM:

TABLE 2

LOCATION	MATERIAL TYPE	SAMPLE ID
Serving Area	12" Ceiling tile	8-4FM-1
Serving Area	12" Black floor tile	8-4FM-3
Serving Area	12" White floor tile	8-4FM-4
Serving Area	Mastic paper	8-4FM-6
Serving Area	Coving base mastic	8-4FM-7
Restroom Area	Drywall w/drywall joint compound	8-4FM-9
Restroom Area	Drywall compound only	8-4FM-10
Serving Area Entrance	12" Ceiling tile	8-4FM-12
Kitchen	Glue daubs on wall	8-4FM-13
Kitchen	Ceiling board	8-4FM-14
Kitchen	12" Dappled floor tile	8-4FM-15

LOCATION	MATERIAL TYPE	SAMPLE ID
Kitchen	Mastic with 12" floor tile	8-4FM-17
Kitchen	Mastic with 9" floor tile	8-4FM-18
Exterior, roof over restrooms	Roof field	8-4FM-19
Exterior, front wall	Building paper	8-4FM-21
Exterior, Serving Area Roof	Shingles	8-4FM-23

2.2 Discussion

The USEPA defines any material that contains greater than one percent (>1%) asbestos, utilizing PLM, as being an ACM. Materials that are identified as "none detected" are specified as not containing asbestos. At EnviroScience, materials that are identified as containing less than four percent (<4%) asbestos are analyzed further utilizing the "point-counting" technique to verify asbestos content. This policy is supported by USEPA requirements for "point-counting" confirmation of low level PLM results. The following samples were analyzed by point-counting based on initial PLM results of <4% asbestos.

SAMPLE ID	LOCATION	MATERIAL	% ASBESTOS	VERIFIED ACM
8-4FM-07A	Serving Area	Coving base mastic	<0.25%	NO
8-4FM-07B	Serving Area	Coving base mastic	<0.25%	NO
8-4FM-07C	Serving Area	Coving base mastic	<0.25%	NO
8-4FM-24A	Exterior	Window caulk (see above)	1.25%	YES
8-4FM-25A	Exterior	Window glazing	<0.25%	NO
8-4FM-25B	Exterior	Window glazing	<0.25%	NO
8-4FM-25C	Exterior	Window glazing	<0.25%	NO

2.3 Conclusion

All ACM is identified in Section 2.1 (Table 1) must be removed by a State of Connecticut Licensed Asbestos Abatement Contractor prior to building demolition. This is a requirement of the State of Connecticut Department of Public Health (CT DPH) Standards for Asbestos Abatement.

Any suspect material encountered during renovation/demolition that is not identified in this report as being non-ACM, should be assumed to be ACM unless sample results prove otherwise.

Please see Appendix I for the chain-of-custody and sample results.

2.4 Cost of Abatement

The estimated cost of abating the ACM listed in Section 2.1, Table 1 was determined using unit prices currently associated with industry standards. Costs were then adjusted using job cost multipliers to account for specific job conditions. This is an estimate only and is solely intended to assist the client for budgetary purpose. Actual cost will vary inversely with the size of the project and will depend on market condition. The estimated removal costs are as follows:

TABLE 3

LOCATION	MATERIAL	QUANTITY	UNIT COST	TOTAL COST
Serving Area	Glue daubs with ceiling tile	840 SF	\$4.00	\$3,360.00
Serving Area	Red flooring under plywood	1290 SF	\$5.00	\$6,450.00
Restroom Area	Suspended ceiling tile	450 SF	\$3.00	\$1,350.00
Restroom Area	12" tan floor tile	450 SF	\$4.00	\$1,800.00
Kitchen	9" dappled floor tile	280 SF	\$4.00	\$1,120.00
Roof of restroom area and other rooms	Roof flashing	400 SF	\$3.00	\$1,200.00
Rear of building	Siding (transite)	550 SF	\$2.00	\$1,100.00
All windows	Window caulk	88 LF	\$3.00	\$264.00
SUBTOTAL:				\$16,644.00
10% CONTINGENCY:				\$1,656.00
TOTAL:				\$18,300.00

3.0 LEAD-BASED PAINT SCREENING

A lead paint screen was performed at the Marino Restaurant in Middletown, Connecticut, by EnviroScience Consultants, Inc.'s Environmental Senior Consultant, Frank Mills, on August 4, 2003. An X-ray fluorescence (XRF) analyzer providing spectrum analysis was used to perform the screening. The screen was conducted in accordance with the protocol outlined in the attached document: Testing Procedures and Equipment (Appendix II).

For the purpose of this screen, various interior and exterior components representing the initial painting history of the building and any building-wide repainting by the owners/managers of these building components were tested. Of course, individual repainting efforts are not discoverable in such a limited testing program. The purpose of this screen was to identify trends in the painting history of the building in order to determine if Toxicity Characteristic Leachate Procedure (TCLP) analysis was required.

The building was constructed with vinyl, wood, and asbestos siding on the exterior, with wood window and door systems. The interior is sheetrock with concrete floors.

3.1 Results

The screen indicated consistent painting trends throughout the building interior and exteriors. No painted components were determined to contain toxic levels of lead (greater than 1.0 milligrams of lead per square centimeter of paint) with the exception of the following:

Item	Location	Reading (mg/cm ²)
Window Casing	Serving Area	3.6
Door Frame	Kitchen	1.1
Wall D	Exterior (of Serving Area)	1.3
Window Sash	Exterior (of Serving Area)	3.1

Disclaimer: The information contained in this report concerning the presence or absence of lead paint does not constitute a comprehensive lead inspection under Connecticut regulations, Section 19a-111-1 to 11. The surfaces tested represent only a portion of those surfaces that would be tested to determine whether the premises are in compliance with Connecticut regulations.

The Contractor shall be aware that OSHA has not established a level of lead in a material below which 29 CFR 1926.62 does not apply. The Contractor shall comply with exposure assessment criteria, interim worker protection and other requirements of the regulation as necessary to protect workers and building occupants.

The testing results are provided as Appendix IV in this report.

3.2 TCLP Results

Since lead was discovered on large or multiple components, TCLP was conducted. Subsamples were collect of the basic building components that would become a part of the waste if the building is demolished.

The result of the TCLP testing was 0.38 mg of leachable lead per liter. The EPA has specified 5 mg of leachable lead per liter as the limit for determining hazardous waste for this substance. The testing, therefore, demonstrates that the waste from the demolition of the building may be discarded as standard construction waste.

4.0 PCB-CONTAINING FLUORESCENT BALLASTS AND MERCURY-CONTAINING LAMPS

4.1 PCB-Containing Fluorescent Ballasts

During this survey, the inspector also performed an inspection of representative fluorescent light fixtures to identify possible PCB-containing ballasts.

Typical ballasts were examined in-place on their fixtures for evidence of "No PCB" labels or for manufacturer's information that could be used to determine the PCB content. If neither of the above methods could be used to determine the existence of PCBs, the ballasts were assumed to contain PCBs.

Results:

No fixtures bore the label "NO PCB's." All seven of the fixtures in the Restroom Area and the Kitchen should be considered hazardous waste.

Recommendation:

Nearly all fluorescent light ballasts manufactured prior to 1979 contain capacitors that contain PCBs. Ballasts installed as late as 1985 may contain PCB capacitors. Fluorescent light ballasts that are not labeled as "No-PCBs" must be assumed to contain PCBs unless proven otherwise by quantitative analytical testing.

Capacitors in fluorescent light ballasts labeled as non-PCB containing may contain diethylhexyl phthalate (DEHP). DEHP was the primary substitute to replace PCBs for small capacitors in fluorescent lighting ballasts. DEHP is a toxic substance, a suspected carcinogen and is listed under RCRA and the Superfund law as a hazardous waste. Therefore, Superfund liability exists for land filling DEHP ballasts.

4.2 Mercury-Containing Lamps

The inspector also performed an inventory of mercury lamps, thermometers, and mercury switches. These fixtures were inventoried in-place.

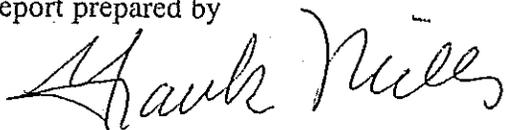
Results:

Two mercury containing thermostats were found in the Serving Area on the wall closest to the Restroom Area.

5.0 HAZARDOUS MATERIAL IN ROOF-TOP HEATING/COOLING UNITS

No roof-top heating/cooling units were found at this site.

Report prepared by



Frank Mills
Senior Environmental Consultant

APPENDIX I
ASBESTOS SAMPLE RESULTS
AND
CHAIN OF CUSTODY
(INITIAL SURVEY)

EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.comAttn: Steve Connelly
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111Customer ID: ENV154
Customer PO:
Received: 08/06/03 11:43 AMFax: (413) 647-0018 Phone: (860) 953-2700
Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANTEMSL Order: 040313940
EMSL Project ID:
Analysis Date: 8/7/2003**Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using 400 Point Count Procedure.**

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-07A 040313940-0075	SERVING AREA	Brown Non-Fibrous Homogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	<0.25% Chrysotile
8-4FM-07B 040313940-0076	SERVING AREA	Brown Non-Fibrous Homogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	<0.25% Chrysotile
8-4FM-07C 040313940-0077	SERVING AREA	Brown Non-Fibrous Homogeneous	Dissolved	<1% Cellulose	100.00% Non-fibrous (other)	<0.25% Chrysotile
8-4FM24A 040313940-0078	EXTERIOR	Gray/White Non-Fibrous Heterogeneous	Dissolved		98.75% Non-fibrous (other)	1.25% Chrysotile
8-4FM25A 140313940-0079	EXTERIOR	Gray/Brown Non-Fibrous Heterogeneous	Dissolved		100.00% Non-fibrous (other)	<0.25% Chrysotile
8-4FM25B 040313940-0080	EXTERIOR	Gray/Brown Non-Fibrous Heterogeneous	Dissolved		100.00% Non-fibrous (other)	<0.25% Chrysotile
8-4FM25C 040313940-0081	EXTERIOR	Gray/Brown Non-Fibrous Heterogeneous	Dissolved		100.00% Non-fibrous (other)	<0.25% Chrysotile

Analyst(s)

Linda Price (7)

Stephen Siegel, CIH
or other approved signatory

Disclaimer: Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis.

Analysis performed by EMSL Test Lab (NVLAP #101048-0), NY ELAP 10872

EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
 EnviroScience Consultants, Inc.
 795 North Mountain Road
 Newington, CT 06111
 Fax: (413) 647-0018 Phone: (860) 953-2700
 Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

Customer ID: ENVI54
 Customer PO:
 Received: 08/06/03 11:43 AM
 EMSL Order: 040313940
 EMSL Project ID:
 Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-01A 040313940-0001	SERVING AREA	White Fibrous Heterogeneous	Teased	90% Min. Wool	10% Non-fibrous (other)	None Detected
8-4FM-01B 040313940-0002	SERVING AREA	White Fibrous Heterogeneous	Teased	90% Min. Wool	10% Non-fibrous (other)	None Detected
8-4FM-01C 040313940-0003	SERVING AREA	White Fibrous Heterogeneous	Teased	90% Min. Wool	10% Non-fibrous (other)	None Detected
8-4FM-02A 040313940-0004	SERVING AREA	Brown Non-Fibrous Homogeneous	Dissolved		95% Non-fibrous (other)	5% Anthophyllite
8-4FM-02B 040313940-0005	SERVING AREA					Not Analyzed
8-4FM-02C 040313940-0006	SERVING AREA					Not Analyzed
8-4FM-03A 040313940-0007	SERVING AREA	Black Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-03B 040313940-0008	SERVING AREA	Black Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-03C 040313940-0009	SERVING AREA	Black Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected

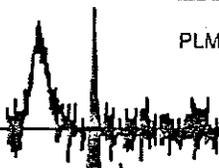
Analyst(s)

Linda Price (67)

Stephen Siegel, CIH
 or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.
 Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

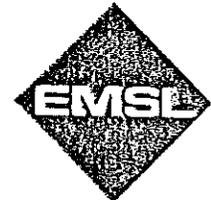
PLM-1



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
 EnviroScience Consultants, Inc.
 795 North Mountain Road
 Newington, CT 06111

Customer ID: ENVI54
 Customer PO:
 Received: 08/06/03 11:43 AM

Fax: (413) 647-0018 Phone: (860) 953-2700

EMSL Order: 040313940

Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

EMSL Project ID:

Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-04A 040313940-0010	SERVING AREA	White Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-04B 040313940-0011	SERVING AREA	White Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-04C 040313940-0012	SERVING AREA	White Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-05A 040313940-0013	SERVING AREA	Red Non-Fibrous Homogeneous	Dissolved		95% Non-fibrous (other)	5% Chrysotile
8-4FM-05B 040313940-0014	SERVING AREA					Not Analyzed
8-4FM-05C 040313940-0015	SERVING AREA					Not Analyzed
8-4FM-06A 040313940-0016	SERVING AREA	Black Fibrous Heterogeneous	Dissolved	60% Cellulose	40% Non-fibrous (other)	None Detected
8-4FM-06B 040313940-0017	SERVING AREA	Black Fibrous Heterogeneous	Dissolved	70% Cellulose	30% Non-fibrous (other)	None Detected
8-4FM-06C 040313940-0018	SERVING AREA	Black Fibrous Heterogeneous	Dissolved	70% Cellulose	30% Non-fibrous (other)	None Detected

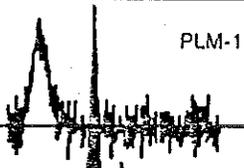
Stephen Siegel

Analyst(s)

Linda Price (67)

Stephen Siegel, CIH
 or other approved signatory

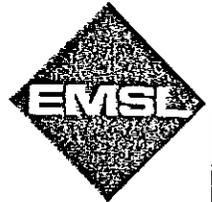
PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.
 Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
 EnviroScience Consultants, Inc.
 795 North Mountain Road
 Newington, CT 06111

Customer ID: ENVI54
 Customer PO:
 Received: 08/06/03 11:43 AM

Fax: (413) 647-0018 Phone: (860) 953-2700
 Project: 03-191.10 / 56.FERRY ST. - MARINO RESTAURANT

EMSL Order: 040313940
 EMSL Project ID:
 Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-08A 040313940-0022	RESTROOM AREA	White/Tan Fibrous Heterogeneous	Dissolved Crushed		60% Non-fibrous (other)	40% Chrysotile
8-4FM-08B 040313940-0023	RESTROOM AREA					Not Analyzed
8-4FM-08C 040313940-0024	RESTROOM AREA					Not Analyzed
8-4FM-09A 040313940-0025	RESTROOM AREA	White/Tan Fibrous Heterogeneous	Teased	15% Cellulose	85% Non-fibrous (other)	None Detected
8-4FM-09B 040313940-0026	RESTROOM AREA	White/Gray Fibrous Heterogeneous	Teased	10% Cellulose	90% Non-fibrous (other)	None Detected
8-4FM-09C 040313940-0027	RESTROOM AREA	White/Tan Fibrous Heterogeneous	Teased	20% Cellulose	80% Non-fibrous (other)	None Detected
8-4FM-10A 040313940-0028	RESTROOM AREA	Tan Fibrous Heterogeneous	Teased	5% Cellulose	95% Non-fibrous (other)	None Detected
8-4FM-10B 040313940-0029	RESTROOM AREA	Tan Fibrous Heterogeneous	Teased	2% Cellulose	98% Non-fibrous (other)	None Detected
8-4FM-11A 040313940-0030	RESTROOM AREA	Tan Non-Fibrous Homogeneous	Dissolved		92% Non-fibrous (other)	8% Chrysotile
8-4FM-11B 040313940-0031	RESTROOM AREA					Not Analyzed

Analyst(s)

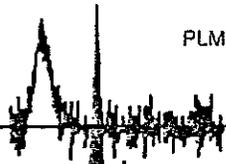
Linda Price (67)

Stephen Siegel, CIH
 or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

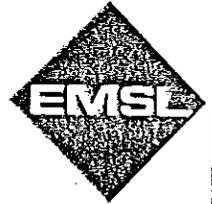
PLM-1



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Customer ID: ENVI54
Customer PO:
Received: 08/06/03 11:43 AM

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

EMSL Order: 040313940
EMSL Project ID:
Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-11C 040313940-0032	RESTROOM AREA					Not Analyzed
8-4FM-12A 040313940-0033	SERVING AREA ENTRANCE	Brown/White Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected
8-4FM-12B 040313940-0034	SERVING AREA ENTRANCE	Brown/White Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected
8-4FM-12C 040313940-0035	SERVING AREA ENTRANCE	Brown/White Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected
8-4FM-13A 040313940-0036	KITCHEN	Brown Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-13B 040313940-0037	KITCHEN	Brown Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-13C 040313940-0038	KITCHEN	Brown Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-14A 040313940-0039	KITCHEN	Brown Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected
8-4FM-14B 040313940-0040	KITCHEN	Brown Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected

Analyst(s)

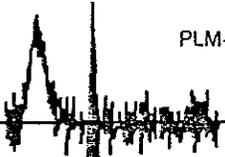
Linda Price (67)

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

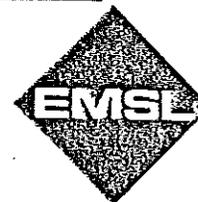
PLM-1



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111
Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

Customer ID: ENVI54
Customer PO:
Received: 08/06/03 11:43 AM
EMSL Order: 040313940
EMSL Project ID:
Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-14C 040313940-0041	KITCHEN	Brown Fibrous Heterogeneous	Teased	95% Cellulose	5% Non-fibrous (other)	None Detected
8-4FM-15A 040313940-0042	KITCHEN	Beige Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-15B 040313940-0043	KITCHEN	Beige Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-15C 040313940-0044	KITCHEN	Beige Non-Fibrous Homogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-16A 040313940-0045	KITCHEN	Gray Fibrous Homogeneous	Dissolved		90% Non-fibrous (other)	10% Chrysotile
8-4FM-16B 040313940-0046	KITCHEN					Not Analyzed
8-4FM-16C 040313940-0047	KITCHEN					Not Analyzed
8-4FM-17A 040313940-0048	KITCHEN	Tan Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-17B 040313940-0049	KITCHEN	Tan Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected

Analyst(s)

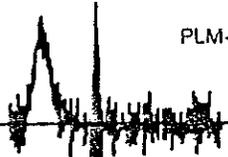
Linda Price (67)

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

PLM-1



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Customer ID: ENVI54
Customer PO:
Received: 08/06/03 11:43 AM

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

EMSL Order: 040313940
EMSL Project ID:
Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-17C 040313940-0050	KITCHEN	Tan Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-18A 040313940-0051	KITCHEN	Black Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-18B 040313940-0052	KITCHEN	Brown Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-18C 040313940-0053	KITCHEN	Brown Non-Fibrous Heterogeneous	Dissolved		100% Non-fibrous (other)	None Detected
8-4FM-19A 040313940-0054	EXTERIOR	Black Non-Fibrous Heterogeneous	Dissolved	10% Cellulose	90% Non-fibrous (other)	None Detected
8-4FM-19B 040313940-0055	EXTERIOR	Black Non-Fibrous Heterogeneous	Dissolved	5% Cellulose	95% Non-fibrous (other)	None Detected
8-4FM-19C 040313940-0056	EXTERIOR	Black Non-Fibrous Heterogeneous	Dissolved	5% Cellulose	95% Non-fibrous (other)	None Detected
8-4FM-20A 040313940-0057	EXTERIOR	Black Fibrous Heterogeneous	Dissolved	12% Cellulose	80% Non-fibrous (other)	8% Chrysotile
8-4FM-20B 040313940-0058	EXTERIOR					Not Analyzed

Analyst(s)

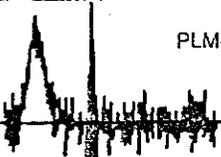
Linda Price (67)

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

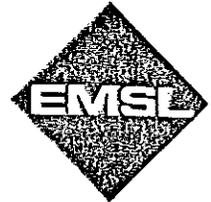
PLM-1



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
 EnviroScience Consultants, Inc.
 795 North Mountain Road
 Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700

Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

Customer ID: ENVI54
 Customer PO:
 Received: 08/06/03 11:43 AM

EMSL Order: 040313940
 EMSL Project ID:
 Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-20C 040313940-0059	EXTERIOR					Not Analyzed
8-4FM-21A 040313940-0060	EXTERIOR	Black Fibrous Heterogeneous	Dissolved	60% Cellulose	40% Non-fibrous (other)	None Detected
8-4FM-21B 040313940-0061	EXTERIOR	Black Fibrous Heterogeneous	Dissolved	60% Cellulose	40% Non-fibrous (other)	None Detected
8-4FM-21C 040313940-0062	EXTERIOR	Black Fibrous Heterogeneous	Dissolved	60% Cellulose	40% Non-fibrous (other)	None Detected
8-4FM-22A 040313940-0063	EXTERIOR	Gray Fibrous Heterogeneous	Crushed		60% Non-fibrous (other)	40% Chrysotile
8-4FM-22B 040313940-0064	EXTERIOR					Not Analyzed
8-4FM-22C 040313940-0065	EXTERIOR					Not Analyzed
8-4FM-23A 040313940-0066	EXTERIOR	Black/Gray Fibrous Heterogeneous	Dissolved	10% Cellulose	90% Non-fibrous (other)	None Detected
8-4FM-23B 040313940-0067	EXTERIOR	Black/Gray Fibrous Heterogeneous	Dissolved	15% Cellulose	85% Non-fibrous (other)	None Detected
8-4FM-23C 040313940-0068	EXTERIOR	Black/Gray Fibrous Heterogeneous	Dissolved	20% Cellulose	80% Non-fibrous (other)	None Detected

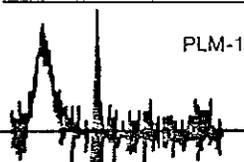
Analyst(s)

Linda Price (67)

Stephen Siegel, CIH
 or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

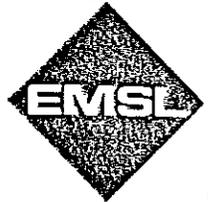
Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Steve Connelly
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Customer ID: ENVI54
Customer PO:
Received: 08/06/03 11:43 AM

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 03-191.10 / 56 FERRY ST. - MARINO RESTAURANT

EMSL Order: 040313940
EMSL Project ID:
Analysis Date: 8/7/2003

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

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
8-4FM-24B 040313940-0070	EXTERIOR					Not Analyzed
8-4FM-24C 040313940-0071	EXTERIOR					Not Analyzed

Analyst(s)

Linda Price (67)

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

040313940 Edition: 11/2001

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. 1 of 7

Project Name: 56 Ferry St
Building: Marino Restaurant

Project Number: 03-191-10
Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-01a	Serving Area	12" Ceiling Tile	
-01b		! ! !	
-01c		! ! !	
8-4FM-02a		Glue Daubs w/4L	
-02b		! ! !	
-02c		! ! !	
8-4FM-03a		Black 12" Floor Tile	
-03b		! ! ! !	
-03c		! ! ! !	
8-4FM-04a		White 12" Floor Tile	
-04b		! ! ! !	
-04c		! ! ! !	

03 AUG - 6 AM '03

Analysis Method: PLM Other _____

Turnaround Time 2 AM

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/7/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples. of asbestos content < 4%, positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples [Rec'd][Sent By]: [] [] Date: [] [] Time: [] []

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

[Handwritten Signature]

040313940

Edition: 11/200



EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. 2 of 7

Project Name: 56 Ferry St - Middletown

Project Number: 03-191.10

Building: Marino Restaurant

Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-05a	Serving Area	Red flooring	
-05b			
-05c			
8-4FM-06a		Mastic Paper	
-06b			
-06c			
8-4FM-07a		Coving Mastic	
-07b			
-07c			
8-4FM-08a	Restroom Area	Suspended Ceiling Tile	
-08b			
-08c			

Analysis Method: PLM Other _____

Turnaround Time 24

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/7/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content < 4%, positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples [Rec'd][Sent By]: (_____) Date: (_____) Time: (_____)

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

0313940
Edition: 1/2001



EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKES

Sheet No. 3 of 7

Project Name: 56 Ferry St - Middletown
Building: Marino Restaurant

Project Number: 03-191.10
Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-09a	Restroom Area	Dry wall w/ Compound	
-09b			
-09c			
8-4FM-10a		Drywall Compound Only	
-10b		" " "	
8-4FM-11a		Tan 12" Floor Tile	
-11b		! ! !	
-11c		! ! !	
8-4FM-12a	Serving Area Entrance	12" Ceiling Tile	
-12b		! ! !	
-12c		! ! !	

03AUG-8 AM 11:15
24

Analysis Method: PLM Other _____

Turnaround Time _____

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/1/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content < 4%, positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples (Rec'd) (Sent By): (_____) Date: (_____) Time: (_____)

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

070313940

Edition: 11/2001



EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKES

Sheet No. 4 of 7

Project Name: 56 Ferry St. - Middletown Project Number: 03-191.10

Building: Marino Restaurant Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-13a	Kitchen	Glue Daubs on wall	
-13b		! ! ! !	
-13c		! ! ! !	
8-4FM-14a		Ceiling Board	
-14b		! !	
-14c		! !	
8-4FM-15a		12" dappled floor tile	
-15b		! ! ! !	
-15c		! ! ! !	
8-4FM-16a		9" dappled floor tile	
-16b		! ! ! !	03 AUG - 6
-16c		! ! ! !	11:01 AM

Analysis Method: PLM Other _____ Turnaround Time 24

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/7/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content < 4%; positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples (Rec'd)[Sent By]: (_____) Date: (_____) Time: (_____)

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

DA0313940

Edition: 11/20/01



EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. 5 of 7

Project Name: 56 Ferry St. - Middletown

Project Number: 03-191-10

Building: Marino Restaurant

Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-17a	Kitchen	Mastic w/#15	
-17b			
-17c			
8-4FM-18a		Mastic w/#16	
-18b			
-18c			
8-4FM-19a	Exterior	Roof field ^{over} Restrooms	03 AUG 03
-19b			04
-19c			05
8-4FM-20a		Flashing ^{over} Restrooms	AM 11:44
-20b			12
-20c			13

Analysis Method: PLM Other _____

Turnaround Time 24

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/7/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content < 4%, positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples (Rec'd)(Sent By): [] [] Date: [] [] Time: [] []

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

040313940

Edition: 11/20/01



EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. 6 of 7

Project Name: 56 Ferry St. - Middletown

Project Number: 03-191-10

Building: Marino Restaurant

Project Manager: Steve Connelly

Sample ID Number	Sample Location	Material Type	Result (%)
8-4FM-21a	Exterior	Building Paper	
-21b			
-21c			
8-4FM-22a		Siding	
-22b			
-22c			
8-4FM-23a		Shingles	03 AUG - 6 AM 11:30 AM
-23b			
-23c			
8-4FM-24a		Window Caulk	
-24b			
-24c			

Analysis Method: PLM Other _____

Turnaround Time 24

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 8/7/03. Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content < 4% . positive stop on all point counts.

Samples Collected By: Frank Mills Date: 8/4/03 Time: _____

Samples (Rec'd)(Sent By): () () Date: () () Time: () ()

Samples Received By: _____ Date: _____ Time: _____

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other _____

APPENDIX II
LEAD PAINT TESTING PROCEDURES
AND EQUIPMENT

STANDARD OPERATING PROCEDURES HUD AND STATE OF CONNECTICUT LEAD-BASED PAINT INSPECTIONS

TESTING PROCEDURES AND EQUIPMENT

The U. S. Department of Housing and Urban Development (HUD) "Guidelines for the Evaluation and Control of Lead Hazards in Housing, September 1997," were consulted for this lead evaluation. HUD has been the agency at the federal level with responsibility for the establishment of national lead-based paint standards for testing and abatement. The HUD document will be referenced as the Guidelines in this report. The State of Connecticut Department of Public Health's current lead regulations, Lead Poisoning Prevention and Control (19a-111-1 through 19a-111-11) were also consulted.

This lead evaluation was either comprehensive or a spot test, also known as a lead screen. Both the proposed scope of work and the final report will note which type of evaluation was done. A comprehensive inspection means that representative painted surfaces were systematically evaluated on a room by room basis in accordance with the Guidelines and the State of Connecticut regulations.

A spot test, or lead screen, means that only a few surfaces were tested and that conclusions about untested areas cannot be reliably determined based on the limited testing that was done. A disclaimer will be employed in the report to note that the lead evaluation done is not in complete accordance with the testing protocol in the Guidelines and in the Connecticut regulations.

Lead-based paint surfaces and components were identified by utilizing on-site x-ray fluorescence (XRF) instruments. EnviroScience Consultants, Inc. owns and maintains two different types of XRFs for testing for lead-based paint. These instruments are four (4) Radiation Monitoring Device LPA-1s (RMD) and a Scitec MAP 4 analyzer. Each of these instruments is operated in accordance with state and federal and manufacturer standards on the use of the instruments. State and federal protocols provide, with the exception of wall surfaces, one reading with the instrument on a representative component in each room, i.e., baseboard, chair rail, etc., as sufficient to establish the lead paint classification of all the representatives of that component type in a room. In the case of walls, because of the large spacial areas involved and the variability in lead content in paint over such large areas, the federal and state governments want a reading on each wall surface in a room. Therefore, representative testing is not permitted for walls.

The federal government has developed Performance Characteristic Sheets (PCS) for each of the types of instruments cited above. Each instrument must be calibrated in accordance with these PCSs on a 1.0 milligram lead standard. Each of EnviroScience's instruments has one of these standards assigned to it. Some of the standards were purchased directly from the government and the others from the manufacturers of the instruments.

For the Scitec MAP 4 instrument, on one or more substrates, substrate interference can affect the validity of the result. For this instrument, if the reading is below 4.0 mg/cm², a Substrate Equivalent Lead (SEL) was determined on certain substrates in the Screen and Test Modes of the instrument. For the RMD in the standard reading mode on metal, an SEL also has to be determined. To determine the SEL, the paint is removed from the surface of the component to obtain a bare substrate reading. After removing the paint, the surface is wiped with a 5% trisodium phosphate solution (a heavy duty cleaner). All paint residue is collected and properly disposed of. Once the paint and surrounding area are cleaned, the XRF is utilized to determine the SEL for each surface. The SEL values are subtracted from the XRF values to determine the Corrected Lead Concentration (CLC). The CLC is the lead content of the paint on the component tested.

Each of the types of instruments has federal government-determined positive and negative ranges for the definition of lead-based paint. In addition, the Scitec MAP 4 also has inconclusive ranges in many of its reading modes. XRF results are classified using either the threshold or the inconclusive range. For the threshold, results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold. There is no inconclusive classification when using the threshold. For the inconclusive range, results are classified as positive if they are greater than the upper limit of the inconclusive range, and negative if they are less than the lower limit of the inconclusive range. The ranges for each of the types of instruments and their various operating modes are as follows:

Radiation Monitoring Device LPA Analyzer 1

30-Second Standard Mode Reading Description	Substrate	Threshold (mg/cm ²)
Results corrected for substrate bias on metal substrate only.	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

Quick Mode Reading Description	Substrate	Threshold (mg/cm ²)	Inconclusive Range (mg/cm ²)
Readings not corrected for substrate bias on any substrate.	Brick	1.0	None
	Concrete	1.0	None
	Drywall	1.0	None
	Metal	1.0	None
	Plaster	1.0	None
	Wood	1.0	None

Scitec MAP 4 Spectrum Analyzer

Unlimited Mode Reading Description	Substrate	Inconclusive Range (mg/cm ²)
Results not corrected for substrate bias for unlimited mode readings.	Brick	0.91 to 1.19
	Concrete	0.91 to 1.19
	Drywall	0.91 to 1.19
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.19
	Wood	0.91 to 1.19

Screen Mode Reading Description	Substrate	Inconclusive Range (mg/cm ²)
Results corrected for substrate bias on drywall, metal, and wood substrates.	Brick	0.91 to 1.09
	Concrete	0.91 to 1.09
	Drywall	0.91 to 1.39
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.09
	Wood	0.91 to 1.29

Test Mode Reading Description	Substrate	Threshold (mg/cm ²)	Inconclusive Range (mg/cm ²)
Readings corrected for substrate bias for test mode readings on drywall, metal, and wood substrates only.	Brick	0.9	None
	Concrete	0.9	None
	Drywall	None	0.91 to 1.39
	Metal	None	0.91 to 1.09
	Plaster	0.9	None
	Wood	None	0.91 to 1.29

If a reading falls in the inconclusive range, either the lead inspector should be authorized by the client to take a paint chip sample to determine whether the final result is either positive or negative after laboratory analysis, or the result can be categorized as suspect positive and treated accordingly. If it is not confirmed with laboratory analysis, it cannot be assumed to be negative for toxic levels of lead. If it is assumed to be positive, it can either be abated as a positive if the condition of the surface and/or location of the component requires this treatment under Connecticut and/or HUD regulations, or it can be managed in place as a positive component in accordance with the requirements of Connecticut and HUD regulations.

Prior to the start of any testing, a sketch of the building is drawn, and side designations are given to help identify exactly where readings were taken. Drawings depicting the room numbering scheme are located on the cover page(s) for the building(s) inspected. Each side of the building was labeled A, B, C, or D. The wall "A" side of the unit is generally the side of primary entrance into a dwelling, and this room is always Room 1. Areas in the units include rooms, hallways and closets. Areas are numbered in a clockwise fashion as building construction allows. This allows the inspector to indicate which substrate surface was tested. The condition of the surface is described by a check mark in the appropriate column, under the heading "condition of surface" on the testing form.

When more than one surface type was present on a side, the component tested was indicated with

a number. If two windows were present on a building side, they were numbered left to right. Closet shelves and shelf supports were numbered top to bottom.

It is understood that the room layouts presented in the report are in conformance with the conditions that exist at the time the testing is performed. EnviroScience avoids labeling a room solely by its current functional use (i.e., living room, bedroom, etc.) since this use can change over time. Similarly, room layouts can change dramatically as dwellings are renovated and additions are built, incorporating existing rooms, or existing interior walls are moved or eliminated altogether.

F:\EVERYONE\WORD\PROJECTS\TEMPLATES\SOPT\PAE-CT.TMP.DOC
February 8, 2001

APPENDIX III
LEAD TESTING FIELD DATA SHEETS



LEAD INSPECTION COVER SHEET

Inspector's Information

Inspector's Name: Frank Mills License Number: 000719
 XRF Model: RMD LPA-1 Serial Number: 1395
 Date of Inspection: August 4, 2003 Project Number: 03-191.10

Property Information

Building Address: 56 Ferry Street
(street)
Middletown CT Age of Property: Unknown
(city) (state)
 Describe Structure: Restaurant - Wood, frame construction, 3 rooms and
two restrooms

Are there lead hazards present? Yes No
 Were lead dust wipes taken? Yes No
 Were soil samples collected? Yes No

Single Family Dwelling

Is there an EBL child present? Yes No
 Is there a child under six years of age in the dwelling? Yes No

Multiple Family Building

Number of units in building: _____
 Number of units tested: _____
 Is there an EBL child present in building? Yes No
 If EBL child, which unit(s)? _____
 Is there a child under six years of age in the building? Yes No
 If child under six, which unit(s)? _____

XRF Calibration Check

Calibration Paint Film Used: NIST 1.02 mg/cm² Manufacturer's Standard 1.0 mg/cm²
 Calibration Check Limits Used: RMD (0.7 to 1.3 mg/cm² inclusive)
 PGT (0.5 to 2.3 mg/cm² inclusive)
 Scitec MAP4 (0.6 to 1.2 mg/cm² inclusive)

	Hour	First Reading	Second Reading	Third Reading	Average
First Check	8:30 AM	10:30 AM	0.9	1.0	1.0
Second Check	10:30 AM	1.0	1.0	1.1	1.0
Third Check					
Fourth Check					

Screening

Address: 56 Ferry St. Middletown - Restaurant
 Floor: 1st Room: _____

Apt.: _____
 Page 1 of 1

Side	Surface	X.R.F. Readings	Defective	Substrate		CLC	Result		Paint Chip	
				Type	SEL		POS	NEG	Sample #	Result
Service Area Interior										
ALL	Walls	0.1								
A	Window casing	3.6					✓			
C	cabinet	0.2								
B	divider	0.1								
Kitchen Area Interior										
C	door frame	1.1					✓			
C	cabinet	0.6								
D	door frame	0.1								
Restroom Area										
	ceiling	0.3								
Exterior *										
D	Cabinet	0.2								
D	Wall	1.3					✓			
A	Sash	3.1					✓			

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: * all exterior tests taken on Service Area

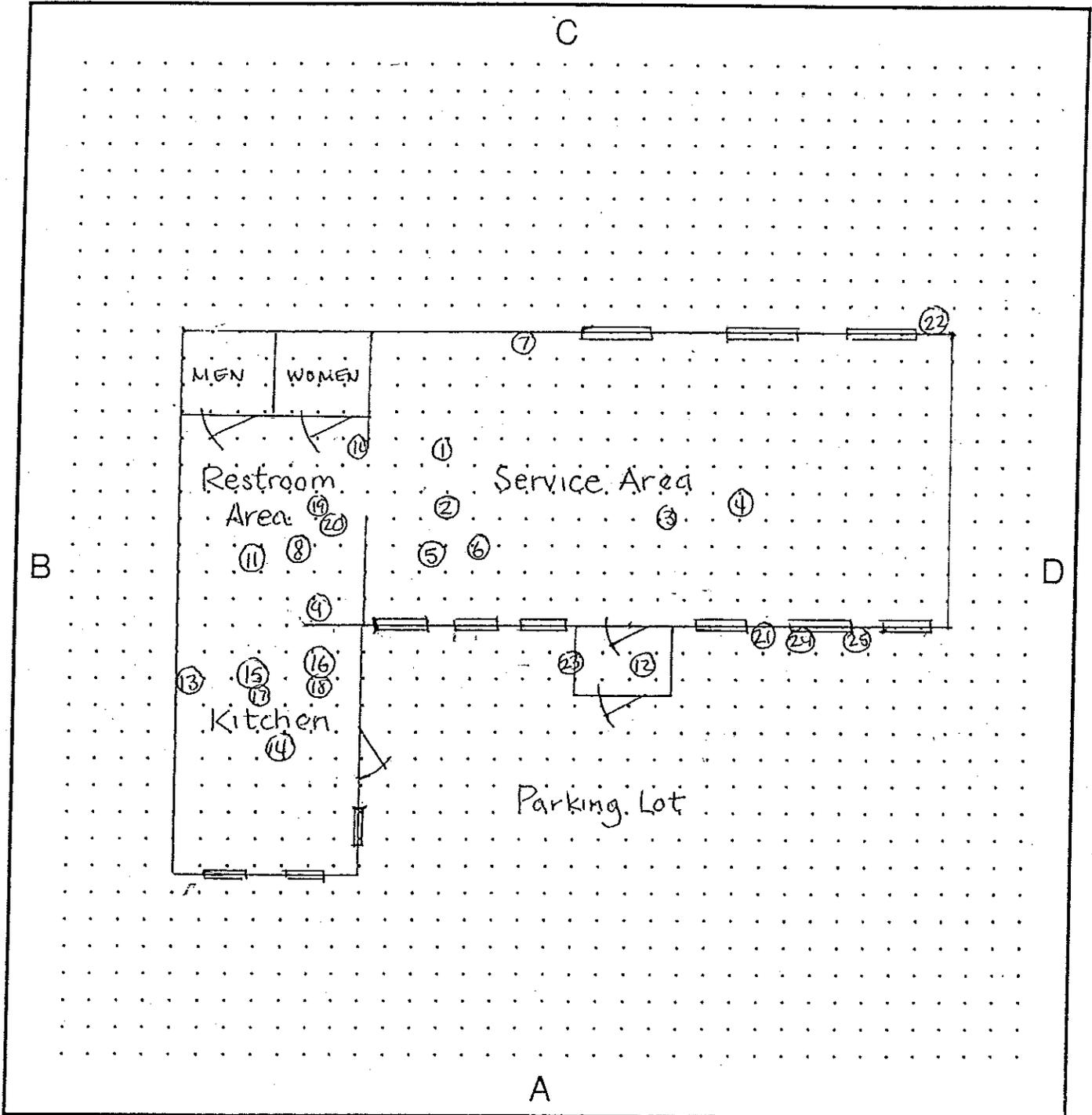
APPENDIX IV
FLOOR PLAN AND SAMPLE LOCATIONS



EnviroScience Consultants inc.

Environmental Engineering ❖ Industrial Hygiene ❖ Laboratory Services

Job No: 03-191.10 Date: AUGUST 4, 2003
Address: 56 Ferry St., Middletown, CT
Apartment / Building: Marino Restaurant
Diagram of: Floor Plan - Bulk Sample Locations, Room Designations



APPENDIX V
TCLP RESULTS

EAS Project Number: 03080214

Location Collected: 56 Ferry Street, Middletown, CT

EAS Certifications:

Connecticut Certified Laboratory Number: PH 0558

Massachusetts Certified Laboratory Number: M-CT020

Maine Certified Laboratory Number: CT 020

New York Certified Laboratory Number: 10916

Rhode Island Certified Number: 139

The enclosed analyses were conducted in accordance with:

1. APHA Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
2. Clean Water Act, List of Approved Test Procedures, 40 CFR
3. EPA Test Methods for the Evaluation of solid Waste, SW-846, 3rd Edition, January 1998

