

ATTENTION ALL BIDDERS:

The following changes are hereby made to the Contract Bidding Documents for this project:

GENERAL CLARIFICATIONS:

None

EQUAL OR SUBSTITUTIONS:

None

SPECIFICATIONS:

1. Attached is the PCB section 02 08 50, pages 1-29 that should replace the PCB section 02 08 50 pages 1-27.

DRAWINGS:

1. HM-100: Note 12 under Hazardous Materials Abatement Notes should read "Sanding Machine Method" instead of "Blastic Method."

SECTION 02 08 50 – PCB REMEDIATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this section.
- B. Reference is made to the Self-Implementing On-Site Cleanup and Disposal Plan for PCB Caulking Removal as prepared by Fuss & O'Neill EnviroScience, LLC dated September 11, 2012.
- C. Scope of work is also identified on Oak Park Architects, LLC Drawing Numbers A-1, and A-100.
- D. Related Specification sections include asbestos abatement section 02 08 00 and drawings HM-001

1.2 GENERAL REQUIREMENTS

- A. The Remediation Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, agreements, and incidentals necessary to perform the specified work. Work shall be performed in accordance with the contract documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (USEPA), and all other applicable federal, state, and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.
- B. All project personnel engaged in the work covered under this section shall be trained in accordance with OSHA Regulations 29 CFR 1910.1000 and 29 CFR 1910.1200. It should also be noted that work associated with PCB removal shall also involve exposure to asbestos during demolition and removal activities specified herein and Remediation Contractor shall perform required exposure assessment for asbestos in accordance with 29 CFR 1926.1101 for asbestos.
- C. The Remediation Contractor shall provide a Project Health and Safety Officer having a minimum of eight (8) hours of supervisor training in hazardous waste site operations in accordance with the requirements of 29 CFR 1910. The supervisor must be on site at all times during abatement work.
- D. This section specifies the procedures for removal of existing materials containing polychlorinated biphenyls (PCB), equal to or greater than (>)50 parts per million (ppm), in the form of exterior door system caulking compounds, and disposal of

removed materials as PCB Bulk Product Waste. Also includes the removal of Bulk PCB Remediation Waste including adjacent exterior brick walls, exterior concrete pavement, and concrete sills at doors four, fourteen, twenty-three, five, eight, and nineteen only.

- E. Disturbance or removal of polychlorinated biphenyls (PCB) containing materials may cause a health hazard to workers and building occupants. The Remediation Contractor shall disclose to all of his workers, supervisory personnel, subcontractors, and consultants who will be at job site of the seriousness of the hazard and of proper work procedures which must be followed.
- F. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb or otherwise function in the immediate vicinity of polychlorinated biphenyls (PCB) containing materials, appropriate, continuous measures as necessary to protect all workers from the hazard of exposure shall be taken. Such measures shall include the procedures and methods described herein, regulations of the U.S. Occupational Safety & Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), and local requirements as applicable.
- G. The results of the testing for PCB containing door caulking compounds, and adjacent vertical and horizontal brick surfaces are identified in the Self-Implementing On-Site Cleanup and Disposal Plan for PCB door caulking compound, and brick Removal.
- H. Project Scope Locations and Work Statement: The project site is the located at the Newington High School, 605 Willard Avenue in Newington CT. Locations of work are also detailed on drawing **HM-001**. The proposed removal and disposal activities to be performed by Remediation Contractor shall include the following:
1. Site preparation and controls to facilitate remediation of PCBs. Containment procedures referenced for the abatement zone must be utilized for both PCB Bulk Product Waste removal as well as Bulk PCB Remediation Waste Removal.
 2. Remove existing exterior door caulking compounds from vertical and horizontal door frame and brick for disposal as PCB Bulk Product Waste \geq 50 ppm. The work is to be performed on the door system associated with doors four (4), five (5), fourteen (14), twenty-three (23), eight (8), and nineteen (19) only.
 3. Remove existing exterior concrete sidewalk surface(s) to the depth of 2 inches, and 6 inches from caulk line; below door fourteen (14), and Twenty Three (23), and disposed of as PCB-containing remediation waste < 50 PPM.

4. Remove all concrete door sill(s) horizontal surfaces(s) in its entirety below doors fourteen (14), twenty-three (23) and five (5) dispose of as PCB containing remediation waste <50 PPM.
5. Remove existing exterior porous brick at exterior door jambs. Exterior porous brick shall be removed at first 2 courses (**Horizontal (+/-) 6 inches each brick**) of brick masonry joint (approximately 12 inches away from caulk joint) in a straight vertically cut line from jamb to head below lintel at all vertical door jambs. All removed material shall be disposed of as Bulk PCB Remediation Waste < 50 ppm. Testing has confirmed PCB \geq 1 ppm at a depth of at least 1 inch from caulking compound in adjacent porous masonry. The work is to be performed on the adjacent surface in contact with the door system(s) associated with doors (4) four, (5) five and (14) fourteen only.
6. Remove existing exterior porous brick at exterior door jambs. Exterior porous brick shall be removed at one (1) course (**Horizontal (+/-) 6 inches**) of brick masonry joint (approximately 6 inches away from caulk joint) in a straight vertically cut line from jamb to head below lintel at all vertical door jambs. All removed material shall be disposed of as Bulk PCB Remediation Waste < 50 ppm. Testing has confirmed PCB \geq 1 ppm at a depth of at least 1 inch from caulking compound in adjacent porous masonry. The work is to be performed on the adjacent surface in contact with the door system associated with door twenty-three (23) only.
7. Remove existing exterior porous brick at exterior door jambs. Exterior porous brick shall be removed at one (1) course (**Horizontal (+/-) 6 inches**) of brick masonry joint (approximately 6 inches away from caulk joint) in a straight vertically cut line from jamb to head below lintel at all vertical door jambs. All removed material shall be disposed of as Bulk PCB Remediation Waste \geq 50 ppm. Testing has confirmed PCB \geq 50 ppm at a depth of at least 1 inch from caulking compound in adjacent porous masonry. The work is to be performed on the adjacent surface in contact with the door system(s) associated with doors (8) eight, and nineteen (19) only.
8. Door systems shall be removed in their entirety for disposal as Bulk PCB Remediation Waste \geq 50 ppm (metal systems). This includes but is not limited to metal frames, glass, clips, and anchors. The work is to be performed on the door system(s) associated with doors four (4), fourteen (14), twenty-three (23), eight (8) and nineteen (19), and five (5) only.
9. Remove in its entirety ALL Gray Floor Paint (Auditorium, Music equipment Storage Room, Lecture Rooms 412, and Room 400) for disposal as Bulk PCB Remediation Waste <50 ppm (Blastrac Method).

10. Remove in its entirety ALL Varnish from stage floor located in the auditorium for disposal as Bulk PCB Remediation Waste <50 ppm (Sanding Machine Method)
11. Remove the stairs (set of 4 on each side of the stage) located in the auditorium for disposal as Bulk PCB Remediation Waste <50 ppm.
12. Remove in its entirety ALL Blue Floor Paint (to include concrete platform) from room 407 for disposal as Bulk PCB Remediation Waste <50 ppm
13. Remove in its entirety ALL Aqua Blue Floor Paint from room 404 for disposal as Bulk PCB Remediation Waste <50 ppm (Blastrac Method)
13. Non-porous surfaces (exterior steel beam/lintel) shall be cleaned to standard of $\leq 1 \mu\text{g}/100 \text{ cm}^2$.
14. Areas in the auditorium where chairs will be unbolted without disturbing gray paint; will be encapsulated with carpet.
15. Health and Safety in accordance with Occupation Safety and Health Administration (OSHA) requirements.
16. Recordkeeping and distribution as required in accordance with 40 CFR part 761.125 (c) (5).

1.3 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply.
 1. American National Standards Institute (ANSI)
 - a. ANSI.Z89.1 Personnel Protective Equipment - Protective Headwear for Industrial Worker's Requirements (Latest Revision)
 - b. ANSI.Z87
 2. Code of Federal Regulations (CFR)
 - a. 29 CFR Subpart D- Walking, Working Surfaces
 - b. 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response (HAZWOPER).
 - c. 29 CFR 1910.134 - Respiratory Protection Standard
 - d. 29 CFR 191.0.146 - Permit-Required Confined Spaces
 - e. 29 CFR 1910.1000 – Air Contaminants (Table Z-1)
 - f. 29 CFR 1910.1200 - Hazard Communication
 - g. 29 CFR 1926.20 - General Health and Safety Provisions
 - h. 29 CFR 1926.57 - Ventilation

- i. 29 CFR 1926.59 - Hazard Communication Program
- j. 29 CFR 1926.62 - Lead Exposure in Construction
- k. 29 CFR 1926.95 - Criteria for Personal Protective Equipment
- l. 29 CFR 1926, Subpart H -Materials Handling, Storage, Use and Disposal
- m. 29 CFR 1926, Subpart L - Scaffolding
- n. 29 CFR 1926, Subpart M -Fall Protection
- o. 29 CFR 1926, Subpart X - Ladders
- p. 29 CFR 1926, Subpart Z - Toxic and Hazardous Substances
- q. 40 CFR 50.6 - National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
- r. 40 CFR 260 - Hazardous Waste Management System: General
- s. 40 CFR 261 - Identification and Listing of Hazardous Waste
- t. 40 CFR 262 - Standards Applicable to Generators of Hazardous Waste
- u. 40 CFR 263 - Standards Applicable to Transporters of Hazardous Waste
- v. 40 CFR 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- w. 40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- x. 40 CFR 268 - Land Disposal Restrictions
- y. 40 CFR 700 - Toxic Substances Control Act (TSCA)
- z. 40 CFR 761- PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- aa. 49 CFR 105 - Hazardous Materials Program Definitions and General Procedures
- bb. 49 CFR 171 - General Information, Regulations and Definitions
- cc. 49 CFR 172 - Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- dd. 49 CFR 173 - Shippers-General Requirements for Shipments and Packaging
- ee. 49 CFR 177 - Carriage by Public Highway
- ff. 49 CFR 176 - Specifications for Packaging
- 3. National Institute for Occupational Safety and Health (NIOSH)
 - a. Publication Number 87-106 Respiratory Decision Logic
 - b. NIOSH /OSHA Booklet 3142 Lead in Construction
 - c. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)
- 4. U.S. Environmental Protection Agency (USEPA), Toxic Substances Control Act (TSCA)
 - a. Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act
 - b. 40 CFR Part 761.50 - Applicability (b) (1-8)
 - c. 40 CFR Part 761.61 - PCB Remediation Waste

- d. 40 CFR Part 761.62 - PCB Bulk Product Waste
- e. 40 CFR Part 761.79 - Decontamination
- 5. Center for Disease Control (CDC): Air Pollution and Respiratory Health.

1.4 DEFINITIONS

- A. The following definitions as used within this technical specification as well as references to specific sections of the Code of Federal Regulation section 40 CRF Part 761 are provided. Definitions are extracted in part from 40 CFR Part 761.3, for full definitions refer to the specified section of regulations.
1. Bulk PCB Remediation Waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥ 50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥ 500 ppm PCBs beginning on April 18, 1978, or ≥ 50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, as further defined in 40 CFR §761.3.
 2. CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601-9657).
 3. Chemical waste landfill means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in §761.75.
 4. Cleanup Site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB remediation waste, regardless of whether the site was intended for management of waste.
 5. Containment means the enclosure within the building which establishes a contaminated area and surrounds the location where PCB and/or other toxic or hazardous substance removal is taking place and establishes a Control Work Area.
 6. Designated Facility means the off-site disposer or commercial storer of PCB waste designated on the manifest as the facility that will receive a manifested shipment of PCB waste.
 7. Disposal means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.
 8. DOT means the United States Department of Transportation.

9. EPA identification number means the 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under §761.205.
10. Excluded PCB products means PCB materials which appear at concentrations less than 50 ppm as defined in 40 CFR §761.3.
11. Fixed Object: means mechanical equipment, electrical equipment, fire detection systems, alarms, and all other fixed equipment, fixtures or other items which cannot be removed from the work area.
12. Generator of PCB waste means any person whose act or process produces PCBs that are regulated for disposal under subpart D of 40 CFR Part 761, or whose act first causes PCBs or PCB Items to become subject to the disposal requirements of subpart D, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore is subject to the disposal requirements of subpart D. Unless another provision of 40 CFR Part 761 specifically requires a site-specific meaning, “generator of PCB waste” includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.
13. HEPA: High Efficiency Particulate Air filtration efficiency of 99.97 percent down to 0.3 microns. Filtration provided on specialized vacuums and air filtration devices to trap particles.
14. High occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 hours per week work station, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line.
15. Incinerator means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
16. Laboratory means a facility that analyzes samples for PCBs and is unaffiliated with any entity whose activities involve PCBs.
17. Liquid PCBs means a homogenous flowable material containing PCBs and no more than 0.5 percent by weight non-dissolved material.
18. Low occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).

19. Manifest means the shipping document EPA form 8700–22 and any continuation sheet attached to EPA form 8700–22, originated and signed by the generator of PCB waste in accordance with the instructions included with the form and subpart K of this part.
20. Mark means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to these regulations.
21. Marked means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of these regulations.
22. Municipal solid wastes means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.
23. Non-liquid PCBs means materials containing PCBs that by visual inspection do not flow at room temperature (25°C or 77°F) or from which no liquid passes when a 100 g or 100 ml representative sample is placed in a mesh number 60 ±5 percent paint filter and allowed to drain at room temperature for 5 minutes.
24. Non-porous surface means a smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface. Examples are: smooth un-corroded metal; natural gas pipe with a thin porous coating originally applied to inhibit corrosion; smooth glass; smooth glazed ceramics; impermeable polished building stone such as marble or granite; and high density plastics, such as polycarbonates and melamines, that do not absorb organic solvents.
25. On site means within the boundaries of a contiguous property unit.
26. PCB and PCBs means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. Refer to §761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in §761.3. For any purposes under this part, inadvertently generated non-Aroclor PCBs are defined as the total PCBs calculated following division of the quantity of mono-chlorinated biphenyls by 50 and di-chlorinated biphenyls by 5.
27. PCB Article means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. “PCB Article” includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.

28. PCB Article Container means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.
29. PCB Bulk Product Waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is ≥ 50 ppm PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under §761.60(a) through (c), §761.61, §761.63, or §761.64. PCB bulk product waste is further defined in 40 CFR §761.3.
30. PCB Capacitor means any capacitor that contains ≥ 500 ppm PCB. Concentration assumptions applicable to capacitors appear under §761.2.
31. PCB Container means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.
32. PCB-Contaminated means a non-liquid material containing PCBs at concentrations ≥ 50 ppm but < 500 ppm; a liquid material containing PCBs at concentrations ≥ 50 ppm but < 500 ppm or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration $> 10 \mu\text{g}/100 \text{ cm}^2$ but $< 100 \mu\text{g}/100 \text{ cm}^2$, measured by a standard wipe test as defined in §761.123.
33. PCB Equipment means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.
34. PCB Item means any PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains or has as a part of it any PCB or PCBs.
35. PCB waste(s) means those PCBs and PCB Items that are subject to the disposal requirements of subpart D in 40 CFR Part 761.
36. Porous surface means any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with a porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low-density plastics such as Styrofoam and low-density polyethylene; coated (varnished or painted) or uncoated wood; concrete or cement; plaster; plasterboard; wallboard; rubber; fiberboard; chipboard; asphalt; or tar paper. For purposes of cleaning and disposing of PCB remediation waste, porous surfaces have different requirements than non-porous surfaces.
37. RCRA means the Resource Conservation and Recovery Act (40 U.S.C. 6901 et seq.).
38. Standard wipe sample means a sample collected for chemical extraction and analysis using the standard wipe test as defined in §761.123. Except as designated elsewhere in part 761, the minimum surface area to be sampled shall be 100 cm^2 .
39. Storage for disposal means temporary storage of PCBs that have been designated for disposal.

40. SW-846 means the document having the title “SW-846, Test Methods for Evaluating Solid Waste,”
41. Totally enclosed manner means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.
42. Transfer facility means any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of §761.65, but such storage areas are exempt from the approval requirements of §761.65(d) and the recordkeeping requirements of §761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations.
43. Transporter of PCB waste means, for the purposes of subpart K of 40 CFR Part 761, any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
44. Transport vehicle means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.
45. TSCA means the Toxic Substances Control Act (15 U.S.C. 2601 et seq.).

1.5 SUBMITTALS

- A. The following documents shall be submitted immediately upon project award to the Owner prior to commencement of PCB Removal work:
 1. Site Specific Health and Safety Plan (HASP): The Remediation Contractor shall prepare a site specific HASP plan for protection of workers and control of the work site in accordance with OSHA regulatory requirements. The HASP shall govern all work conducted at the site during the abatement of PCB Paint and related debris; waste handling, sampling, waste management; and waste transportation. At a minimum, the HASP shall address the requirements set forth in 29 CFR 1910.120, as further outlined below:
 - a. Health and Safety Organization
 - b. Site Description and Hazard Assessment
 - c. Training
 - d. Medical Surveillance
 - e. Work Areas
 - f. Personal Protective Equipment
 - g. Personal Hygiene and Decontamination
 - h. Standard Operating Procedures and Engineering Controls
 - i. Emergency Equipment and First Aid Provisions
 - j. Equipment Decontamination

- k. Air Monitoring
 - l. Telephone List
 - m. Emergency Response and Evacuation Procedures and Routes
 - n. Site Control
 - o. Permit-Required Confined Space Procedures
 - p. Spill prevention and Containment Plan
 - q. Heat and Cold Stress
 - r. Record Keeping
 - s. Community Protection Plan
2. Training Documentation: Documentation of OSHA 40-Hour HAZWOPER Training for all employees and subcontractors to be used for the abatement work, and 8-Hour HAZWOPER Supervisor Training for the designated on-site Health and Safety Officer for the abatement work.
3. PCB and or other Toxic or Hazardous Substances Disposal Plan: A written plan that details the Remediation Contractor's plan for transportation and disposal of PCB-containing or other Toxic or Hazardous Substance wastes generated during the project. The Disposal Plan shall identify:
- a. Waste packaging, labeling, placarding, and manifesting procedures.
 - b. The name, address, and 24-hour contact number for the proposed treatment or disposal facility or facilities to which waste generated during the project will be transported.
 - c. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters, and EPA identification number for firms that will transport waste.
 - d. The license plate numbers of vehicles to be used in transporting of the waste from the site to the disposal facility.
 - e. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass.
4. Material Safety Data Sheets: Material Safety Data Sheets (OSHA Form 174 or equivalent) and manufacturer's information shall be provided for all chemicals and materials to be used during the project including but not limited to specialty cleaners and chemical stripping products.
- B. The following documents shall be submitted to the Owner within fifteen (15) work days following removal of waste from the site:
- 1. Waste Profile Sheets
 - 2. Pre-Disposal Analysis Test Results (If required by disposal facility)
 - 3. Manifests signed by the disposal facility
 - 4. Tipping Receipts provided by the disposal facility

5. Certification of Final Treatment/Disposal signed by the responsible disposal facility official.

C. PCB Work Closeout Submittals:

1. Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing the PCB-containing or other Toxic or Hazardous Substances materials have been properly disposed.

D. Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

1.6 POSTING AND RECORD MAINTENANCE REQUIREMENTS

A. The following items shall be conspicuously displayed proximate but outside of abatement work areas.

1. Exit Routes -Emergency exit procedures and routes
2. Emergency Phone Numbers - A list indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department; the local police department; the Poison Control Center; Chemical Emergency Advise (CHEMTREC); the local Department of Health's local office; the Remediation Contractor (on-site and after hours numbers); and the environmental consultant (on-site and after hours numbers).
3. Warning Signs - Warning signs shall be in English and the language of any workers on site who do not speak English, and be of sufficient size to be clearly legible and display the following or similar language in accordance with 29 CFR 1910.1200:

WARNING
HAZARDOUS WASTE WORK AREA
PCBs-POISON
NO SMOKING, EATING OR DRINKING
AUTHORIZED PERSONNEL ONLY
PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

In addition, all entrances to work areas shall be posted with a PCB ML marker.

B. The Remediation Contractor shall maintain the following items on-site and available for review by all employees and authorized visitors:

1. Remediation Contractor's Project Specific Health and Safety Plan
2. Certificates of Training for all employees and the project Supervisor
3. Codes, Standards and Publications
4. Material Safety Data Sheets (MSDS) for all chemicals used during the project.

5. Copies of the Remediation Contractor's written hazard communication, respiratory protection, and confined space entry programs.
- C. Fees, Permits and Licenses. The Remediation Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing in the performance of the work specified in this Section.
1. The Remediation Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Remediation Contractor shall hold the Owner and the Owner's Authorized Representative harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights.
 2. The Remediation Contractor shall be responsible for securing all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

1.7 QUALITY ASSURANCE

- A. The Remediation Contractor shall provide and assure that the quality of work practices and procedures to be utilized are consistent with the above listed agencies and regulations. Remediation Contractor shall utilize the latest edition, including all addenda, revisions, and supplements for all regulatory agencies codes, etc.
- B. Worker's Qualifications: The persons performing PCB Caulking abatement and their supervisors shall be personally experienced in PCB abatement work and shall have been regularly employed by a company performing PCB abatement for a minimum of 3 years.
- C. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Owner at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.
1. The conference shall be attended by the Remediation Contractor, and the Owner's Authorized Representative employed by the Owner.

1.8 MINIMUM REQUIREMENTS FOR WORKER HEALTH AND SAFETY

- A. The Remediation Contractor is responsible and liable for the health and safety of all onsite personnel and the offsite community affected by the project. All onsite workers or other persons entering the abatement work areas, decontamination areas or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site specific Health and Safety Plan at all times. The Remediation Contractor's HASP shall comply with all applicable federal, state, and

local regulations protecting human health and the environment from the hazards posed by the work to be performed under this project.

- B. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Sub Contracts without compromise or prejudice to the rights of the Owner or the Owner's Authorized Representative.
- C. Any discrepancies between the Remediation Contractor's HASP and these specifications or federal and state regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel and the surrounding community and environment
- D. In addition to exposure concerns relating to the presence of PCBs, other health and safety considerations will apply to the work. The Remediation Contractor shall be responsible for recognizing such hazards and shall be responsible for the health and safety of Remediation Contractor employees at all times. It is the Remediation Contractor's responsibility to comply with all applicable health and safety regulations.
- E. The HASP shall be reviewed by all persons prior to entry into the abatement, decontamination, or waste staging areas, whether a representative of the Remediation Contractor, owner, architect/engineer, environmental consultant, subcontractor(s), waste transporter or federal, state or local regulatory agency. Such review shall be acknowledged and documented by the Remediation Contractor's Health and Safety Officer by obtaining the name, signature, and affiliation of all persons reviewing the HASP.
- F. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the abatement project and until all waste materials are removed from the site and disposed of at the appropriate disposal facility.
- G. The Remediation Contractor's on-site Health and Safety Officer shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP at all times during the project.

1.9 WORK AREAS AND ZONES

- A. The Remediation Contractor shall lay-out and clearly identify work areas in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:
 - 1. Abatement Zone: The Abatement Zone(s) shall consist of all interior areas where removal of PCBs and other Toxic or Hazardous Substances and waste handling and staging activities are on-going and the immediately surrounding locale or other areas where contamination could occur. Each Abatement

Zone for purposes of interior removal of PCB materials or other Toxic or Hazardous Substances for disposal shall be performed within a containment (refer to section 3.01) to isolate work areas from non-work areas. The containment shall be visibly delineated with appropriate warning signs at all approaches to Abatement (including a PCB ML marker), and be restricted from access by all persons except those directly necessary for the completion of the respective abatement tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the project site to another, to limit access to each abatement area and to minimize risk of exposure to site workers and the general public. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall wear the appropriate level of protection established in the HASP.

2. Decontamination Zone: The Decontamination Zone is the transition zone between the abatement area and the clean support zone of the project site, and is intended to reduce the potential for contaminants from being dispersed from the Abatement Zone to clean areas of the site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel and containerized waste products will occur and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be constructed as a three chamber decontamination unit for workers and a two chamber equipment room for waste load out as detailed in Section 3.02. All emergency response and first aid equipment shall be readily maintained in these Zones. All protective equipment and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.
3. Support Zone: The Support Zone will consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone, Access to the Abatement and Decontamination Zones shall be controlled by the Health and Safety Officer and limited to those persons necessary to complete the abatement work and which have reviewed and signed the HASP.

1.10 PERSONNEL PROTECTIVE EQUIPMENT

- A. The Remediation Contractor shall be responsible to determine and provide the appropriate level of personal protective equipment in accordance with applicable regulations and standards necessary to protect the Remediation Contractor's employees from all hazards present.

- B. The Remediation Contractor shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic and biological hazards posed by the site and work activities.
- C. The Remediation Contractor shall establish in the HASP criteria for the selection and use of personal protective equipment (PPE).
- D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the project site and the work to be performed. Appropriate protective clothing shall be worn at all times within the Abatement Zone.
- E. The Remediation Contractor shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist or there is a potential for such hazard to exit.
- F. The Remediation Contractor shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling activities or otherwise present in the Abatement Zones. Coveralls shall be of Tyvek or equivalent material. Should the potential for exposure to liquids exist, splash resistant disposable suits shall be provided and utilized.
- G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed of at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Health and Safety Officer. Protective clothing shall not be worn outside of the Decontamination Zone.
- H. Hard Hats, protective eyewear, rubber boots, and or other non-skid footwear shall be provided by the Remediation Contractor as required for workers and authorized visitors.
- I. All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the Remediation Contractor for transport and proper disposal in accordance with 40 CFR 262.

1.11 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

- A. The Remediation Contractor shall provide and maintain at the site, at a minimum, the following Emergency and First Aid Equipment:
 - 1. Fire Extinguishers: A minimum one (1) fire extinguisher shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project. Each extinguisher shall be a minimum of a 20 pound

Class ABC dry fire extinguisher with Underwriters Laboratory approval per 29 CFR 1910.157.

2. First Aid Kit: A minimum 01 one (1) first aid kit meeting the requirements of 29 CFR 1910,151 shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project.
3. Communications: Telephone communications (either cellular or land line) shall be provided by the Remediation Contractor for use by site personnel at all times during the project.

- B. The Health and Safety Officer shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Health and Safety Officer shall then immediately notify the Owner's Authorized Representative.

1.12 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

- A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:
 1. Each Remediation Contractor or Subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the site.
 2. All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the site.
 3. Prior to exiting the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap water rinse. A fresh supply of tap water shall be provided at the site on each work day by the Remediation Contractor for this purpose.
 4. All PPE used on site shall be decontaminated or disposed of at the end of each work day. Discarded PPE shall be placed in sealed DOT approved 55-gallon barrels for off-site disposal.
 5. Respirators, if necessary due to an upgrade to Level C PPE, shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
 6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas.
 7. All personnel shall thoroughly cleanse their face hands, arms and other exposed areas prior to using toilet facilities.

8. No alcohol, tobacco, illicit drugs, or firearms will be allowed on the site at any time.
 9. Contact with potentially contaminated surfaces should be avoided, if possible. Field personnel should minimize walking through standing water/puddles, mud or other wet or discolored surfaces; kneeling on ground; and placing equipment, materials or food on ground or other potentially contaminated surface.
 10. The use of the "Buddy System" shall be employed at all times while conducting work at the site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue: periodically examine others PPE for signs of wear or damage; routinely communicate with others; and notify the Health and Safety Officer in the case of an emergency.
- B. Workers must wear protective suits, protective gloves, eye protection, and a minimum of half-face respirator with HEPA filter cartridge for all projects. Respiratory protection shall be in accordance with OSHA regulation 1910.134 and ANSI Z88.2.
- C. Workers must be trained as per OSHA and USEPA requirements, have medical clearance, and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.
1. A personal air sampling program shall be in place as required by OSHA.
 2. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

PART 2 - PRODUCTS

2.1 ABATEMENT PRODUCTS

- A. All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.
- B. Disposal Drums: Metal or fiberboard with locking ring tops, with warning labels as required by OSHA, and/or EPA.
- C. Respirators:
1. Type: Approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.
- D. Vacuum Cleaners:
1. Type: Vacuums equipped with HEPA filters.

- E. Polyethylene Sheeting:
 - 1. Type: Minimum 6 mil., opaque, fire retardant polyethylene sheets.
 - 2. Floor Protective Layer: Minimum 10 mil., reinforced polyethylene sheets.

- F. Cleaning Products: Remediation Contractor shall at their discretion utilize specialty cleaning products such as Capsur, TechXtract or other cleaners for use in decontaminating porous and non-porous surfaces to remain. All such products shall be utilized in accordance with manufacturer's specifications as intended. Remediation Contractor shall ensure appropriate use and disposal associated with use in accordance with the MSDS sheets for each product utilized. It shall be incumbent upon the Remediation Contractor to determine the need for use of specialty products to meet required cleaning verification levels established herein and in accordance with the Work Plan.

2.2 GENERAL EQUIPMENT

- A. A sufficient supply of disposable mops, rags, and sponges for work area cleaning and decontamination shall be available.

- B. A sufficient supply of scaffolding, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

2.3 PERSONNEL PROTECTION

- A. Safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves or other work gloves), shall be provided to all workers and authorized visitors.

- B. Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

PART 3 - EXECUTION

3.1 WORK AREA PROTECTION – ABATEMENT ZONE

- A. Protection of Existing Construction: Perform PCB Bulk Product Waste and Bulk PCB Remediation Waste removal work without damage or contamination of adjacent areas, soil, and existing construction.

- B. Prior to commencement of PCB abatement activities at each work area, a containment system shall be constructed by the Remediation Contractor to capture and contain all materials removed during the abatement. Containment procedures referenced for the abatement zone must be utilized for both PCB Bulk Product

Waste removal as well as Bulk PCB Remediation Waste Removal. Exception is work involving the removal of PCB contaminated soil for disposal as Bulk PCB Remediation Waste.

- C. Prior to any soil removal work, the boundaries of the excavation area shall be marked, properly secured, and a permit number obtained from “Call Before ‘You Dig’” shall be obtained. Soil shall be maintained wet during removal to ensure no visible emissions or dust during removal.
- D. The project site shall be enclosed by a construction chain link fence. During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.
- E. Work zones shall be established in accordance with this section to include abatement zone, decontamination zone and support zone.
- F. Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water run-off used for dust control during channel cutting and demolition of structures. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to foundation.
 - 1. One layer of polyethylene sheeting having a minimum thickness of 6-mil shall be installed on the exterior side of the structure beneath and extending a minimum of ten (10) feet beyond each window, door, or expansion joint in each direction. The polyethylene sheeting shall be securely fastened to the outside face of the structure using duct tape or other suitable material.
- G. Isolation barriers shall be installed on interior side of door systems to isolate these systems to the building exterior where work shall be performed. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the inside finish surfaces of walls to isolate door systems to the building exterior.
 - 1. Two (2) layers of 6-mil polyethylene sheeting shall be securely affixed to the inside of each door system with duct tape or other means to isolate the door systems to the building exterior.
- H. Isolation barriers shall be installed on exterior side of door systems to contain these systems where work shall be performed to minimize dispersal of dust and debris. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the exterior side finish surfaces to contain door systems. To minimize dust and

debris Remediation Contractor shall utilize negative pressure containment with use of negative air filtration units with HEPA filtration.

- I. All other openings to the building interior such as unit ventilation, ducts, and grilles shall be securely sealed with a single layer of 6-mil polyethylene sheeting from the building exterior.
- J. Negative Pressure: Air is to be drawn into the exterior enclosure under all anticipated conditions and exhausted through a HEPA filter during daily operations when dust generating methods for removing Bulk PCB Remediation Work such as cutting of masonry for the duration of the activity and for a period of not less than 1 hour after. The design parameters for static pressure differentials between the inside and outside of enclosures shall be in a range from 0.02 to 0.10 inches of water gauge, depending on conditions. All zones inside the enclosure must have less pressure than the ambient pressure outside of the enclosure (-0.02 inches water gauge differential).
- K. Ground protection and isolation barriers shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Waste removal and PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired or removed and replaced with new protections.
- L. Warning Signage: Post warning signs in accordance with 29 CFR 1910.1200 at all approaches to the work area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the PCB ML markers at each entrance to the work area.
- M. Waste Containers for PCB Bulk Product Waste: Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be lined covered and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.45. Marking shall include a PCB ML marker.

3.2 DECONTAMINATION ZONE

- A. The Remediation 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. The Remediation Contractor shall ensure that employees enter and exit the Abatement Zone through the decontamination area.
- B. Access between rooms in the decontamination system shall be through double flap curtain opening airlocks.

- C. Construct the decontamination systems 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.
- D. The Remediation Contractor shall visually inspect barrier several times daily to assure effective seal and the Remediation Contractor shall repair defects immediately.
- E. Equipment room. The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.
- F. Shower area. Shower facilities shall be provided which comply with 29 CFR 1910.141(d) (3). The showers shall be adjacent both to the equipment room and the clean room.
- G. Clean change room. The clean room shall be equipped with a locker or appropriate storage container for each worker's use. Following showering, each worker must then change into street clothing in clean change areas.
- H. Decontamination area entry procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for entry into a Regulated Work area including but not limited to the following:
 - 1. Enter the decontamination area through the clean room;
 - 2. Remove and deposit street clothing within a locker provided for their use;
 - 3. Put on protective clothing and respiratory protection before leaving the clean room.
 - 4. Before entering the Abatement Zone, the Remediation Contractor shall ensure that workers pass through the equipment room.
- I. Decontamination area exit procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for exit from a Regulated Work area including but not limited to the following:
 - 1. Before leaving the regulated area, workers shall remove all gross contamination and debris from their protective clothing.
 - 2. Workers shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers.
 - 3. Workers shall not remove their respirators in the equipment room.
 - 4. Workers shall shower prior to entering the clean room.
 - 5. After showering, workers shall enter the clean room before changing into street clothes.

- J. Equipment Room for Waste Removal: The Remediation Contractor shall establish a two chamber equipment room or area that is adjacent to the Abatement Zone for the decontamination of waste containers and equipment as noted above.
1. The area must be of sufficient size as to accommodate cleaning of equipment and removing waste without spreading contamination beyond the area (as determined by visible accumulations).
 2. All equipment and surfaces of containers filled with PCB waste must be cleaned prior to removing them from the equipment room or area.

3.3 PCB BULK PRODUCT WASTE MATERIALS

- A. PCB Bulk Product Waste Materials including exterior door caulking compound(s), and adjacent brick from door five, and PCB Remediation Waste including exterior brick, exterior concrete sills, exterior concrete sidewalks, door systems shall be handled and removed from specified locations for proper disposal. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems. Any dry or brittle caulking compound materials or other PCB Bulk Product waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal. Once removed, materials shall be placed in lined containers or into appropriate temporary containers such as 6-mil polyethylene disposal bags for controlled transport to PCB waste containers at the end of each work shift. PCB Bulk Product Waste shall be stored for disposal in accordance with 40 CFR 761.65 and marked in accordance with 40 CFR Part 761.40 and 761.45.
- B. Sequence of removal shall follow the following general requirements:
1. Door systems with PCB containing caulking compounds shall be removed in their entirety for disposal as Bulk PCB Product Waste (exterior door caulk, and brick material adjacent to door five) > 50 ppm. This includes but is not limited to metal frames, glass, PCB glazing compounds, clips, anchors, panels, insulation, interior, and other materials as determined that are in contact with or contain PCB caulking or glazing compound.
 2. PCB caulking shall be removed from all doors at masonry openings and properly containerized for disposal as PCB Bulk Product Waste > 50 ppm. Surfaces from which PCB caulking has been removed shall be cleaned with solvent based cleaner and wire brush to remove all visible caulking prior to proceeding with removal of PCB Remediation Waste.
 3. Once materials have been removed and surfaces cleaned EnviroScience shall be notified. Post testing verification sampling shall be performed once visually inspected to verify removal and cleaning

3.4 BULK PCB REMEDIATION WASTE

- A. Bulk PCB Remediation Waste Materials including adjacent surfaces of exterior brick surfaces (from doors four, fourteen, and twenty-three, concrete sills, concrete sidewalks, and concrete painted floor, and platforms as Bulk PCB Remediation Waste <50 ppm. The primary waste resulting from removal of adjacent surfaces will be PCB contaminated dust and debris from cutting, and removal of surfaces. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions. No dry sweeping, dusting or blowing shall be allowed.
- B. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB remediation waste show evidence of free liquid water, pooling, or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR 761.79 (b) or disposed of as PCB Liquid Waste in accordance with 40 CFR Part 761.60 (a). All rags and other cleaning materials used to clean shall also be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be disposed of in accordance with 40 CFR Part 761.61(a)(5)(v)(A). All waste containers shall comply with 40 CFR 761.65 and shall be appropriately labeled in accordance with 40 CFR Part 761.40 and 761.45.
- C. Sequence of removal shall follow the following general requirements:
1. Removal and off-site disposal of PCB containing brick surfaces, from all locations identified as PCB Bulk Product Remediation Waste <50 ppm. In addition, removal and disposal of exterior concrete sills, concrete sidewalks, exterior concrete platforms, and floors from all locations assumed as PCB Remediation Waste < 50 ppm.
 2. Testing has confirmed <50 ppm at a depth of at least 1 inch from door caulking compound in adjacent exterior porous brick and exterior concrete sill, and exterior concrete sidewalks. Removal of porous brick and block shall be performed using mechanical tools equipped with dust controls as specified below:
 - a. Exterior porous brick veneer and interior porous concrete block shall be removed at the following intervals:
 1. 1 whole course of brick from all masonry joints in contact with PCB containing caulk compound(s) in a straight vertically cut line from foundation to steel beam at all vertical door jambs, and horizontal door headers. It is estimated that the maximum distance from opening shall be approximately 6 inches. All removed material shall be disposed of as Bulk PCB Remediation Waste <50 ppm, except brick surfaces from door five.

2. Steel lintels to remain shall be stripped of all paint and surface ground smooth or sand blasted to meet Visual Standard No. 2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers (NACE) due to the presence of rust, mill scale, and porous paint on surface.
3. Once materials have been removed and surfaces cleaned EnviroScience shall be notified. Post testing verification sampling shall be performed once visually inspected to verify removal and cleaning.

3.5 CLEANING AND DECONTAMINATION

- A. The Remediation Contractor shall be responsible for complete cleaning and decontamination of the Abatement Zone upon completion of work. The Abatement Zone will be required to meet proposed Verification Sampling limits established in Work Plan.
- B. The Remediation Contractor shall utilize HEPA vacuum and wet cleaning products to remove all visible dust and debris from all surfaces within the work area. If specialty products are utilized the Remediation Contractor shall utilize in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.
- C. Cleaning of containment barriers shall be performed prior to removal leaving critical barriers at openings, decontamination units and negative air filtration devices in place until results of post verification sampling indicate acceptable limits. Cleaning shall be performed from ceiling to floors.
- D. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with §761.60 (a).
- E. All rags and other cleaning materials used to clean shall also be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.61(a)(5)(v)(A). All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45.
- F. Equipment to be utilized in connection with the removal of PCB Bulk Product Waste, Bulk PCB Remediation waste and PCB Contaminated soil including waste collection or that will or may come in direct contact with the site contaminants shall be decontaminated prior to leaving the site to prevent migration of the contaminated residues from the project site. Decontamination shall be in accordance with 40 CFR Part §761.79 and Sub-part S procedures.

G. All non-disposable equipment and tools employed in the course of the project will be decontaminated at the conclusion of each work day through the following sequence:

1. Initial tap water rinse, to remove gross soil
2. Tap water and hexane or equivalent wash
3. Tap water rinse
4. Second tap water and hexane or equivalent wash
5. Second tap water rinse

H. The wash water and decontamination liquids shall be captured and containerized in DOT approved 55-gallon barrels for off-site disposal.

3.6 CERTIFICATION OF ABATEMENT AND SAMPLING

A. The Owner shall retain an industrial hygiene firm (Owner's Authorized Representative) to perform periodic inspections and sampling during the work. Site visits shall be scheduled based on the progress of the work and at critical time periods.

B. The Owner's Authorized Representative shall perform real time monitoring for dust particulate using Dust Trak or equivalent monitoring devices for total dust. Sampling shall be performed for background for comparison to during abatement sampling. In addition, air sampling outside of the Abatement Zone, may be performed periodically during active removal activities at the Owner's Authorized Representative's discretion for laboratory confirmation. Air samples, if collected shall be collected using low-volume pumps for analysis using analysis method TO-10A. The number, location, and frequency of samples shall be determined by the Owner's Authorized Representative.

C. It should be noted that if the results of air samples exceed established action levels or ambient background conditions for real time monitoring whichever is less the Remediation Contractor will be required to implement work stoppage to determine causes of exceeding results and as necessary utilize additional containment measures or engineering controls. Any resulting decontamination of areas beyond the Abatement Zone shall be responsibility of the Remediation Contractor.

D. The Owner's Authorized Representative shall perform post removal and decontamination visual clearance inspection; wipe sampling as necessary to determine complete removal of PCBs. Refer to the Work Plan for requirements for determination of clearance levels.

E. Once verification sampling has documented the Abatement Zone meets required criteria established in the Work Plan, the Remediation Contractor shall be permitted to remove decontamination unit, negative air filtration devices, and critical barriers. These areas shall be subjected to a visual inspection to ensure no visible dust is present.

- F. The Owner's Authorized Representative shall also collect additional wipe samples outside of the abatement zone and will analyze these samples for PCBs. If PCBs are detected in these samples a cleaning process similar to that described above shall be implemented by the Remediation Contractor.

3.7 MARKING OF WASTE CONTAINERS

- A. All waste containers must be marked with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred. All waste containers must be marked with a PCB M_I marker.
- B. All waste containers containing PCB Bulk Product Waste, Bulk PCB Remediation Waste and PCB contaminated debris, containment system components, used personnel protective equipment, personal and equipment wash water and decontamination fluids, or other wastes generated during the abatement work shall be labeled as follows:

DOT Class 9 UN3432 (solid)
Or UN2315 (liquid) PCB Waste
RQ
Waste for Disposal

Federal law prohibits improper disposal.
If found, contact the nearest police or public safety authority or
the U.S. Environmental Protection Agency.

- a. Generator's Information: _____
- b. Manifest Tracking No.: _____
- c. Accumulation Start Date: _____
- d. EPA ID No.: _____
- e. EPA Waste No.: _____
- f. Total Weight: _____
- g. Container No.: _____

HANDLE WITH CARE!

In addition, these containers must be marked with a PCB M_I marker.

- C. Such marking must be durable, in English, and printed on or affixed to the surface of the package or on a label, tag or sign; displayed on a background of sharply contrasting color; un-obscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.8 ON-SITE WASTE MANAGEMENT AND DISPOSAL OF SOLID HAZARDOUS WASTES

- A. All solid waste material, containment system components, used personnel protective equipment, and other solid wastes generated during the work, shall be placed directly

in appropriate waste receptacles immediately upon removal from its in-situ position. Suitable waste receptacles may consist of roll-off containers or DOT-approved 55-gallon barrels.

- B. The Remediation Contractor shall be responsible for all packaging, labeling, transport, disposal, and record-keeping associated with PCB or PCB contaminated waste in accordance with all federal, state, and local regulations.
- C. The Remediation Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.
- D. The Remediation Contractor shall provide to the transporter at the time of transfer appropriate shipping records or uniform waste manifests as required by the federal, state, and local regulations with a copy to the Owner and Owner's Authorized Representative.
- E. Remediation Contractor shall maintain proper follow up procedures to assure that waste materials have been received by the designated waste site in a timely manner and in accordance with all federal, state, and local regulations.
- F. The Remediation Contractor shall assure that disposal of polychlorinated biphenyls (PCBs) containing waste material is at a facility approved to accept such waste and shall provide a tracking/manifest form signed by the landfill's authorized representative.
- G. If roll-off containers are to be utilized for containerization of the abatement wastes the following shall apply:
 - 1. All roll-off containers or other similar vessels utilized shall be watertight and lined with 6-mil polyethylene sheeting or equivalent impermeable lining, and equipped with a secured and impermeable cover.
 - 2. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Remediation Contractor shall be responsible for ensuring that the cover remains securely intact until the container is removed from the site.
- H. If 55-Gallon barrels are to be utilized for waste containerization, the barrels shall consist of suitable DOT-approved 55-gallon barrels that are watertight and free of corrosion, perforations, punctures, or other damage. All barrels shall be securely covered and sealed at the conclusion of each work day.
- I. The waste containers shall remain staged at the site with a secure impermeable cover in place until the materials are transported from the site to be delivered to the designated disposal facility.
- J. A waste roll-off and barrel staging area shall be designated prior to initiation of the abatement work, and approved by the Owner's Authorized Representative. If this

area is located outside of the building, the area (or areas) shall be surrounded by a chain-link fence with a minimum height of six feet. The fence shall be labeled with a PCB M_L marker.

- K. Properly containerized waste must be transported by a licensed hauler and shipped as PCB Bulk Product Waste and Bulk PCB Remediation Waste for disposal at a permitted hazardous waste landfill which is an EPA, TSCA approved facility for PCB waste ≥ 50 ppm. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner waste generation State and waste destination State as required.
- L. Materials containing < 50 ppm will be transported to a non-hazardous solid waste disposal facility, an EPA approved PCB incineration facility. Waste manifests must show chain of custody. Provide required copies of the waste shipment records for wastes to the Owner as required.
- M. Any PCB Liquid Water Waste shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with 40 CFR Part §761.60 (a).
- N. Any chemicals, solvents or other products used during decontamination shall be properly containerized as PCB Liquid Waste. Waste must be properly decontaminated or disposed in accordance with 40 CFR Part §761.60 (a) or 40 CFR Part §761.79 (g). PCB Liquid Waste shall be transported by a licensed hauler and shipped for treatment or disposal. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.
- O. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the material.
- P. Transporters of the waste are prohibited from “back hauling” any freight after the disposition of the Owner’s waste stream until decontamination of the vehicle and/or trailer is assured.

END OF SECTION