

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Perform all planning, administration, execution, and cleaning necessary to safely remove Polychlorinated Biphenyls (PCBs) –containing bulk materials as indicated on the Work Order.
- B. The procedures employed by the Contractor shall not create the potential for contaminating surrounding areas or materials with PCBs. Dust generation will be kept to a minimum. Dry scraping, dry sanding, or dry grinding on PCB-containing materials will not be permitted without a full enclosure.
- C. This Section addresses removal of PCB-containing bulk materials such as window caulking door frame caulking and sealants, caulking on roofing, or window glazing compound.
- D. The Contractor shall be responsible for removing and containerizing:
 - 1. TSCA PCB-containing bulk materials
 - 2. Non-TSCA PCB-containing bulk materials

1.2 RELATED WORK DESCRIBED ELSEWHERE

- A. Section 02 80 00 “Facilities Remediation”
- B. Section 02 82 00 “Asbestos Abatement”
- C. Section 02 83 00 “Heavy Metal-Related Activities”
- D. Section 02 84 00 “PCB and Mercury Lamp Removal”
- E. Section 02 85 00 “Fugitive and Silica Dust Control Procedures”
- F. Section 02 87 00 “Water Loss Response”
- G. Section 02 88 00 “Biological Contaminants”
- H. JOC Abatement Design Scope for this Work Order

1.3 WORK INCLUDED

- A. The work of this Project includes the following:
 - 1. Provide a detailed Work Plan related to PCB-containing bulk materials for all trades performing work involving the segregation, management, containerization, and clean-up of these materials.
 - 2. Remove PCB-containing bulk materials that will be impacted by the Work Order:
 - 3. Containerize all TSCA PCB-containing bulk materials and PCB-contaminated items removed for the Work Order in Owner-provided disposal containers. Mark and label each disposal containers with a TSCA PCB label.
 - 4. Containerize all non-TSCA PCB-containing bulk materials removed for the Work Order in Owner-provided disposal containers. Mark and label each disposal container.
 - 5. Owner shall manage the handling, transportation, and disposal of PCB-containing bulk materials.

1.4 APPLICABLE REGULATIONS

- A. The applicable sections, latest editions and addenda of the following government regulations, codes, industry standards and recommended practices, form a part of these Specifications.
 - 1. U.S. Environmental Protection Agency (EPA)
 - a. 40 CFR 761: PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
 - b. 40 CFR 260 through 268: Resource Conservation and Recovery Act Regulations
 - c. 40 CFR 273: Standards for Universal Waste Management
 - 2. U.S. Department of Transportation (DOT)
 - a. 49 CFR 100 through 180: Hazardous Materials Transportation Act Regulations
 - 3. National Electric Code (NEC)
 - a. National Fire Protection Association (NFPA) 70
 - 4. National Electrical Manufacturers Association (NEMA)
 - a. Various Standards
 - 5. Washington State Department of Labor & Industries (L&I)
 - a. WAC 296-800: Safety and Health Core Rules
 - 6. Washington State Department of Ecology (Ecology)
 - a. WAC 173-303: Dangerous Waste Regulations
 - b. WAC 173-303-573: Universal Waste Regulations
 - c. WAC 173-350: Solid Waste Handling Standards
- B. Refer to the following EPA guidance documents on the internet for information on PCB Caulking Removal:
 - 1. Steps to Safe PCB Abatement Activities: <http://www.epa.gov/pcbsincaulk/guide/guide-sect4.html>
 - 2. Summary of Tools and Methods for Caulk Removal: <http://www.epa.gov/pcbsincaulk/guide/guide-appendix.html>
- C. All other applicable federal, state and local regulations and industry standards.

1.5 SAFETY PROCEDURES AND WORKER PROTECTION

- A. Work Area Protection and Marking: Prior to commencing any PCB-related work activities, The Contractor shall provide barricades and warning signs to clearly identify and effectively guard against unauthorized entry into the Work Area.
- B. Protective Clothing and Equipment: At all times when PCB materials in any volume are not sealed in drums, containers or electrical equipment, workers shall wear:
 - 1. Disposable non-porous protective gloves
 - 2. Disposable whole body protective clothing impermeable to PCBs

3. Respiratory protection (NIOSH/MSHA-approved) against organic vapors and particles (at least the level of particulate protection required at that stage of work for asbestos protection)
4. Eye protection
- C. The Contractor shall provide protective clothing, eye protection, and respiratory protection as required for the Owner, Environmental Consultant, and regulatory personnel monitoring work activities within the Work Area.
- D. Personnel Protection and Procedures: The PCB Work Area shall not be unattended after procedures have been implemented and shall be attended until all PCB-containing materials and incidentals have been sealed in approved containers. During procedures and at all times when PCB-containing materials in any volume are not sealed in drums or containers, all personnel entering the Work Area must don protective clothing and equipment listed herein. Upon exiting the Work Area, all disposable protective clothing shall be placed in open-top drums, sealed, and secured at the site. If there is no immediate transportation off-site, waste containers shall be stored in the Work Area or secured on-site until shipment.

PART 2 - PRODUCTS

2.1 MATERIAL AND EQUIPMENT

- A. Storage Containers
 1. All TSCA PCB-containing bulk materials and non-TSCA PCB-containing bulk materials shall be stored in sealed waste containers in accordance with applicable regulations and the Owner's protocols. The Owner shall provide waste containers for TSCA and non-TSCA PCB-containing bulk materials.
 2. All PCB solid wastes and items, including disposable items used in the course of the work (i.e., rags, sorbents and protective clothing), shall be stored in sealed waste containers in accordance with applicable regulations and the Owner's protocols.
- B. Solvents, Sorbents, and Cleaners
 1. Solvents: Diesel fuel, deodorized kerosene, or other solvents recognized for a high degree of PCB solubility
 2. Sorbents: Material recognized for a high degree of absorption
 3. Liquid Cleaners: Concentrated liquid alkaline base cleaner
 4. Unless there is a spill, the Work Plan shall be amended to limit and avoid this type of cleanup.

PART 3 - EXECUTION

3.1 PROCEDURES FOR WORK AREA PREPARATION AND PERSONAL AND EQUIPMENT CLEAN-UP/DECONTAMINATION

- A. The Contractor shall prepare the Work Area as follows:
 1. Establish the demarcated Work Area using construction hazard warning tape as described.
 2. Place drop cloths in the Work Area where PCB-containing materials will be disturbed or impacted. Use 6-mil poly sheeting duct taped to the floor.

3. Ensure that wash facilities or supplies (e.g. sink with soap and water or baby wipes) are available at the site for employee decontamination.
 4. Ensure that the appropriate personal protective equipment (PPE) is available.
 5. Ensure that waste containers are available, intact, and appropriately labeled.
- B. The Contractor shall clean-up PCB-Containing Dust and Debris and decontaminate the Work Area and equipment. The Contractor shall:
1. Remove all drop cloths and collection material from the demarcated area taking care to contain any debris. Prevent runoff from entering drains.
 2. Use a HEPA vacuum to clean-up any PCB-containing debris not contained by the drop cloths.
 3. Discard all contaminated protective clothing discarded as PCB-contaminated waste.
- C. Worker Protection
1. Establishing the Demarcated Work Area
 - a. Demarcate the Work Area with red or yellow construction hazard warning tape during the exposure assessment phase of the project. The demarcated area will be established in areas where the potential for exposure to PCBs is at or above the Permissible Exposure Limit (PEL). The demarcation area will be established a minimum of ten (10) feet outside of the perimeter of tasks covered by this Work Plan. The demarcated area will be of greater size if deemed necessary by the On-Site Safety Supervisor due to specific environmental, geological, or site configuration circumstances.
 - b. If at any time during the project the PEL is exceeded, signs will be posted stating:

WARNING
PCB WORK AREA
POISON
RESPIRATORY PROTECTION REQUIRED
NO SMOKING OR EATING
 2. Access to Demarcated Area
 - a. During the work, no employee will be allowed to enter the demarcated area without complying with the provisions of Worker Protection.
 - b. While within the demarcated area all eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics is strictly prohibited.
 3. Personal Protective Equipment
 - a. Until the exposure assessment determines worker exposure levels are below the 8-hour TWA PEL of 0.5 mg/m³, appropriate personal protective clothing and equipment is required. This includes, but not be limited to:
 - 1) Coveralls or similar chemically resistant full-body work clothing
 - 2) Nitrile gloves or leather gloves while using power tools
 - 3) Hard hat
 - 4) Shoes or disposable shoe coverlets
 - 5) Respiratory protection
 - a) Minimum respiratory protection for manual removal will consist of a tight-fitting half-face, negative pressure respirator equipped with high

efficiency particulate air (HEPA) filters. All respiratory fit testing and respiratory protection training will be performed in accordance with WAC 296-842, Respirators.

4. Decontamination

- a. All contaminated protective clothing will be discarded as regulated waste. Workers will be required to wash their hands and face before leaving the Work Area and eating, drinking, smoking, or applying cosmetics.

3.2 PREPARATION OF INDOOR WORK AREAS

- A. Physically define areas that include PCB-containing bulk materials to be removed. These shall be considered the Work Area.
- B. Place warning signs at limits of Work Area and place drop cloths.
- C. Clean any existing dust or debris from the floor and walls and other surfaces in the immediate location of the Work, prior to commencing Work, by damp-mopping or by use of a HEPA filtered vacuum.
- D. Seal all openings, supply and exhaust vents, and convectors within the Work Area and ten feet beyond with 6-mil polyethylene sheeting secured and completely sealed with duct tape or painters tape. Have Owner disable HVAC that conveys air into or out of the Work Area.
- E. When directed by the Owner or Environmental Consultant, the Contractor shall seal doorways and windows with polyethylene sheeting.
- F. Maintain emergency and fire exits from the Work Areas, or establish alternative exits satisfactory to fire officials.
- G. Notify Environmental Consultant for observation of the preparation of Work Area before proceeding with any disturbance of PCB-containing bulk materials.

3.3 PREPARATION OF WORK AREAS FOR OUTDOOR PROJECTS

- A. Prepare the Work Areas and confer with Environmental Consultant regarding appropriate placement of signs and labels, for the removal of the PCB-containing bulk materials.
- B. Restrictions: Use of mechanical methods including, but not limited to power sanding, grinding, sand-blasting, etc. shall be performed using wet methods and HEPA equipped tools and equipment or within a containment.
- C. Housekeeping: Maintain all surfaces as free as practicable of accumulations of dust and perform clean-up of Work Area as necessary.
- D. Install filter fabric immediately adjacent to building out to grass areas or concrete or asphalt. Ensure filter fabric covers any bare soil areas that may be impacted by the work.
- E. Install reinforced polyethylene sheeting drop cloths extended out from filter fabric for appropriate heights. Weight polyethylene sheeting so it does not become windblown. This requirement may be waived depending on removal method.
- F. Install wind screens as appropriate, to reduce the chances of dust being spread.
- G. Workers shall don appropriate protective gear.
- H. The procedures employed by the Contractor shall not create the potential for contaminating surrounding areas or materials with PCBs. Dust generation shall be minimized at all times by employing wet methods and using HEPA shrouded equipment.

- I. On a daily basis, HEPA vacuum to remove any debris and also wet-wipe to remove all dust on polyethylene sheeting.
- J. Change out filter fabric as appropriate.
- K. Capture and filter water runoff with use of spill pillows and socks and wet/dry HEPA vacuums. Cover storm drains with water filters as a secondary measure.
- L. Contractor shall take steps to ensure that the interior of the building is not contaminated by outside work. When working adjacent to windows or doors or exterior building intakes those items shall be sealed by using duct tape and polyethylene sheeting. For exterior building intakes, prior to covering, coordinate shutdown of intakes in accordance with Section 01 50 00 "Temporary Facilities and Controls".
- M. If Environmental Consultant finds dust inside the building that is attributed to exterior work, Contractor shall be responsible for clean-up, by use of wet methods and HEPA vacuums, of said dust.
- N. Visible emissions will be grounds for Environmental Consultant or Owner to request that Work practices be stopped and revised.

3.4 REMOVAL METHODS

- A. The removal methods for PCB-containing bulk materials such as caulking, sealants, weather stripping, and glazing compounds include the use of manual and mechanical methods. Manual methods include the use of tools and equipment that limit the generation of dust. Such tools include utility knife, hammer and chisel, ripping chisel, and putty knife. Mechanical methods include the use of tools and equipment that generate dust and may also cause the PCB material to heat up and volatilize PCBs. If using utility knife, chisels, or other non-mechanical device and the caulking does not readily reduce to powder or dust, a containment is not required. If using mechanical methods such as disk grinding (or the condition of the material is very poor), a containment or tools equipped with HEPA filters is required.
- B. Contractor shall refer to the JOC Abatement Design Form for the Work Order for specific requirements for removal of PCB-containing bulk materials.

3.5 FINAL CLEAN-UP

- A. These procedures will be used following the removal of PCB-containing bulk materials.
- B. After the removal of material, HEPA vacuum all surfaces (vertical and horizontal) where the material was removed and five feet around.
- C. After HEPA vacuuming, wipe the surfaces with a clean cloth using a soap and water solution (TSP may be used). Contractor shall be methodical about the cloth, folding it often to get a clean surface. Contractor shall change the cloth often to prevent cross-contamination. Contractor shall provide a bucket of soap and water and a separate rinse water bucket.
- D. Completion of the wet wiping will be achieved when a clean rag can be wiped over the surfaces and no visible dust or dirt is apparent on the cloth. Once this is achieved, a wipe down will be performed using a spray-bottle with an Owner-approved degreaser and clean cloth. Final wipe down using TSP or other heavy duty cleanser.
- E. Final visual inspection will be performed by the Owner or Environmental Consultant.

3.6 POST REMOVAL SAMPLING

- A. The Owner may perform air or wipe sampling following the completion of the bulk material removal and visual inspection.
- B. Acceptable post removal air monitoring results will be less than pre-removal levels or use EPA school criteria. Acceptable post removal wipe sampling will be 10 micrograms/100 cm² or pre-removal levels.
- C. If the post wipe or air samples fail to achieve acceptable clearance levels, the Contractor will re-clean the area. The Work Area will remain restricted until acceptable clearance levels are obtained.

3.7 WASTE MANAGEMENT

- A. PCB waste will be removed and containerized according to the work plan. Once drums are full and the abatement is complete, the Contractor shall place them in a secured location for the Owner transportation and disposal.

3.8 RECORDKEEPING

- A. The documentation for each removal will include the following:
 - 1. Daily Inspection Report (DIR) which includes who performed the work, engineering controls used, and removal procedures, visual inspection and clearance form,
 - 2. Waste manifest
 - 3. Any post-removal wipe or air sampling
- B. Records will be maintained by the Owner.

CERTIFICATE OF COMPLETION

CONTRACTOR CERTIFICATION OF VISUAL INSPECTION

In accordance with the Work Plan, the Contractor's supervisor/competent person hereby certifies that he/she has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris, or loose residue.

Check the one of the following and provide comments:

Residual PCB-containing material remains in the work area:

Comment:

No residual PCB-containing material remains in the work area:

Identity of Work Area: _____

by: (Signature of Supervisor/Competent Person) _____ Date _____

(Print Name/Title) _____ Certificate # _____ Expiration Date _____

OWNER'S CERTIFICATION OF VISUAL INSPECTION

In accordance with the Work Plan, the Owner hereby certify that they have visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and have found no dust, debris, or loose residue.

Identity of Work Area: _____

by: (Signature) _____ Date _____ Pass / Fail (see punchlist)

(Print Name/Title) _____ Certificate # & Expiration Date _____

ADDITIONAL CLEARANCE INFORMATION

Refer to JOC Abatement Design Form for additional clearance requirements for the Work Order.

If air monitoring is performed, complete the following:

The Owner or Contractor (circle one) hereby certifies that he/she has conducted air clearance sampling in accordance with EPA methods and this sampling is valid to the best of his/her knowledge and belief. Chain of custody and final laboratory results must be attached.

Identity of Work Area _____ Air Sample Identification #: _____

Flow Rate: _____ Volume _____

Air Sampling Results: _____ Analyzed By: _____ Time Sample Taken: _____

If wipe sampling is performed, complete the following:

The Owner or Contractor (circle one) hereby certifies that he/she has conducted wipe sampling in accordance with EPA Methods and this sampling is valid to the best of his/her knowledge and belief. Chain of custody and final laboratory results must be attached.

Identity of Work Area _____ Sample Identification #: _____

Wipe Result: _____

Analyzed By: _____ Time Sample Taken: _____

OWNER APPROVAL FOR RE-OCCUPANCY

by: (Signature) _____ Date _____

END OF SECTION