



Hazardous Material Management for Construction Projects Guidelines

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I. INTRODUCTION

UNC Environment, Health and Safety (EHS) will provide oversight and review documentation of the waste management activities for all construction wastes generated by contractors and consultants. This includes but is not limited to the waste determination and includes sampling and testing, storage, transportation, and ultimate disposal of construction wastes.

All wastes generated from construction demolition must be pre-determined as to waste type prior to storage and disposal to comply with all state and federal regulations. If a waste is determined to be a hazardous waste, PCB waste, universal waste or non-hazardous waste (including recyclables), contractors and consultants must follow the construction waste management processes provided in this document. If the project team is unsure if a waste fits one of the above categories, the team should consult with EHS for further waste determination guidance.

Prior to accumulating wastes and at the close of each project, all vendors must provide a detailed list of wastes to be accumulated during the project and updated if project scope changes. Furthermore, EHS must approve the shipping of all wastes generated on a construction site prior to the waste leaving site. EHS is considered the generator of all wastes on campus projects and, therefore, must sign all transport documents, such as hazardous waste manifests. EHS will also retain records of all documentation for wastes generated at UNC and must receive these documents prior to project closeout.

II. PROJECT TYPES

Based upon building history, drawings and construction, solid waste assessments must be completed prior to the start of any project regardless of project type. Therefore, all renovation projects must be reviewed by EHS prior to the start of construction. Project review for construction wastes can sometimes take up to 90 days depending on project complexity and waste type. Sometimes waste determinations, such as for PCBs in caulk, can take longer. Therefore, waste determinations must begin very early in the project planning process. Some waste types, such as hazardous wastes, must be determined through testing or generator knowledge to assure proper storage and disposal. The two basic types of projects at UNC are “Large Capital Projects” and “Smaller Projects.” EHS solid waste assessment involvement in each construction project type is described below:

A. Large Capital Projects

EHS can provide information on preliminary building hazardous waste assessments, including lead assessments. However, a complete hazardous waste assessment must be completed as part of the building renovation or demolition by a contractor certified to perform hazardous waste and, specifically, lead assessments.



B. Smaller Projects

EHS can perform sampling and testing to assess solid wastes, including hazardous wastes. Prior to the start of projects, EHS can analyze surfaces for lead content, mercury contamination, PCBs (caulking) and asbestos. Facilities Services should complete the applicable forms, “[Request for Lead-Based Paint Inspection](#)” or “[Asbestos Inspection Request Form](#),” and the project scope will determine if additional testing for mercury, PCBs and other waste determinations are needed. Some wastes require additional laboratory analysis to determine if a material is a hazardous waste which requires the project to provide a completed EHS project funding document. Ask EHS for the latest version of the funding document. See Construction waste process maps to determine if the project wastes need additional analysis. (Attachments 1 - 4)

III. HAZARDOUS WASTE REGULATIONS AND STANDARDS

Architects and contractors are responsible for complying with all applicable regulations about removal, storage, transportation and disposal of construction wastes. For clarification of regulations or any questions regarding this document, please contact EHS.

IV. RECORDKEEPING

Recordkeeping for each project’s wastes are the sole responsibility of the project’s contractors and consultants. Prior to accumulating wastes and at the close of each project, all vendors must provide a detailed list of wastes (e.g. hazardous, universal) to be accumulated during the project and updated if project scope changes. All solid waste records must be submitted to EHS upon completion of the project including but not limited to: Hazardous waste manifests (and Land Disposal Restrictions (LDRs), bills of lading, land fill receipts, hazardous waste determinations and recycling receipts. Records must be kept for all hazardous wastes, universal wastes, asbestos, lead-contaminated building components, PCB wastes, and recycled materials such as non-PCB ballasts.

EHS must be present and sign all hazardous waste manifests, LDRs, and lead-contaminated building component shipments prior to a shipment.

See the [Environmental Demolition and Remediation Project Specifications](#) for full abatement guidelines.

V. HAZWASTE TYPES AND STORAGE REQUIREMENTS

The handling of all hazardous wastes by contractors and consultants must be in accordance with State and Federal regulations. If you are unsure if you have a hazardous waste, contact EHS prior to waste accumulation. If the project scope anticipates greater than 55 gallons of hazardous waste collection and storage, additional storage arrangements may be required due to hazardous waste storage requirements. See Attachments 1 - 4 for the chemical waste disposal process map.



Contractors shall contact an EHS approved hazardous waste disposal vendor for shipping and disposal needs. EHS will provide an up-to-date approved vendor list upon request. All construction wastes, including hazardous wastes, must be sent to an approved facility within the United States for disposal, recycle, or retort. This includes but is not limited to the materials discussed in this chapter.

A. Mercury Containing Lamps:

The contractor shall remove and handle fluorescent tubes, high intensity discharge bulbs and U-Tubes in a manner which will minimize occurrences of lamp breakage. **The use of a device for the crushing and disposal of fluorescent light bulbs is prohibited.** The following procedure is to be used for all Universal Waste Lamps:

1. Lamps should be placed in manufactured boxes that are non-leaking and have lids.
2. When you put the first lamp in the box, a Universal Waste label shall be placed on the outside of the box. Fill in contents (“Waste Lamps”) and date sections of the label.
3. When not actively putting lamps in the box, the lid shall be closed and sealed.
4. Boxes should be stored in areas and in ways that do no damage to the contents or the box. Store lamp boxes indoors and away from water.
5. **EHS does not approve of the use of a mercury lamp crushers or disposal facilities that use such methods.**
6. Any mercury containing lamp (e.g. fluorescent lamp, HID, CFL, U-tube) that is unintentionally broken, shall be placed into a Department of Transportation (DOT) UN rated poly drum. Broken lamps are Hazardous Waste and should be treated as such due to the possible release of mercury vapors. When not actively adding to the drum, the lid shall be on, and secure. Also, the drum should be labeled “Hazardous Waste: Mercury Debris” with the origination date. Follow the guidance for “Mercury Contaminated Materials” in Section B of this document for proper management of this waste type.
7. When drums or boxes become full, schedule waste pickup or to sign bill of lading/ hazardous waste manifests with EHS.

B. Mercury Contaminated Materials

All mercury contaminated materials must be managed as hazardous waste. Broken mercury lamps, broken thermometers or other mercury containing devices, or any mercury contaminated item (e.g. carpet, sink traps) are hazardous wastes. EHS or the project team may need to test these items to determine the proper disposal method.



All sink traps located within research buildings are suspected to be mercury contaminated. Immediately contact EHS if and/or when these items are discovered. See [Environmental Demolition and Remediation Project Specifications](#) for mercury abatement procedures.

Handling and storage of mercury contaminated wastes on campus will follow the guidance listed below and all applicable State and Federal regulations. **Attachment 1** shows the process map for mercury wastes.

1. Samples from suspected mercury contaminated materials such shall be taken prior to demolition and sent for TCLP analysis. If it is unreasonable to wait for testing, label drums as “Hazardous Waste: mercury debris awaiting analysis” with the date. An EHS representative shall be present for any sampling activities. Storage of materials awaiting analysis should follow hazardous waste regulations and be determined/ shipped within two weeks to a disposal facility.
2. All sampling results for small projects shall be sent to EHS for proper waste determination. For large projects, EHS shall review waste determinations prior to waste shipment.
3. Mercury contaminated waste is considered hazardous waste and shall be stored in a DOT UN rated container with the lid closed, unless adding contents to the container.
4. Containers must be labeled as “Hazardous Waste: Mercury”, dated, and locked indoors in an area away from public access that is also at or near the point of generation (i.e. within the room where debris came from or within the construction area).

C. Ballasts: PCB and Non-PCB Ballast

A ballast is a Non-PCB ballast only if the label clearly states that it is non-PCB, or if the ballast is an electronic ballast with no conducting oils. Non-PCB Ballasts will have the words “Non-PCB Ballast” or “No PCBs” written on the ballasts. These ballasts should be placed into a separate DOT UN-rated drum, prior to recycling. All other ballasts will be considered to contain PCBs. When planning for PCB ballast storage, keep in mind that a full ballast drum weighs approximately 700 pounds.

Management of ballast wastes from campus projects will follow the guidance listed below and all applicable State and Federal regulations. **Attachment 2** shows the process map for ballast wastes.

Non-PCB Ballast:

1. Non-PCB ballasts will be recycled and must be placed in a DOT UN rated **metal** container and labeled “Non-PCB Ballast Only”.



2. Schedule with EHS to arrange transport to our facility for recycling unless otherwise arranged with the project team.

PCB Ballast:

1. PCB Ballasts shall be placed into DOT UN rated drums for storage and shipped with a Hazardous Waste Manifest.
2. The lid on the drum shall be secured and closed unless actively adding to the drum.
3. The drum must be labeled with a PCB label as required in the applicable regulation. (See **Attachment 2A**)
4. Storage areas for PCB Ballasts must be indoors in a locked area, under the control of the contractor and have PCB warning signage on the entryway as required in the applicable regulation.
5. PCB Ballast must be transported to the ultimate disposal facility or UNC's Treatment, Storage and Disposal Facility (TSDF) within one month of the date on the label. Please provide two weeks' notice to EHS if PCB waste is to be transported to the TSDF.
6. Leaking ballasts must be placed in containers with absorbent material compatible with PCBs and kept separate from non-leaking ballasts.

D. PCBs in Caulk and Building Materials (Bulk Waste and Abatement)

For contractors working in buildings constructed or remodeled between 1950 and 1979, it is important to ensure that PCB abatement activities are conducted safely and in accordance with State and Federal guidelines.

After materials have been identified and abatement commences, all materials that will be disposed as PCB bulk waste or abatement waste, should be contained and transported to a designated storage area. Disposal methods are determined based on the unique abatement plan for the project or job and should be followed completely. Management of PCB bulk wastes from campus projects will follow the guidance listed below and all applicable State and Federal regulations. **Attachment 3** shows the process map for PCB bulk wastes and abatement.

UNC procedures for management of PCB wastes on campus are provided below:

1. After the abatement plan is finalized and reviewed by all parties, including EHS, waste that is determined to be PCB bulk waste (PCBs >50ppm) or all non-liquid and liquid cleaning



materials (e.g. PPE, rags, mops, cleaning solutions) must be disposed of by a UNC approved vendor as PCB waste.

2. Marking: All containers shall be marked using PCB Marking with date of inception.
3. Contractors have up to one year to dispose of containers from the date it was determined to be PCB waste and the decision was made to abate the material. If the plan calls for temporary storage, PCB bulk waste must be transported to a TSDF or the ultimate disposal facility within 30 days of the date on the container.
4. Temporary Storage: Store indoors, away from rain or water, and in a locked area or container that provides limited access to the project team.
5. Containers with free liquids must have absorbents placed in containers and absorbent material must be DOT UN rated and compatible with PCBs.
6. Transportation: EHS will review and sign all waste profiles, manifests, and all other transportation documents.

*Please note that PCB bulk waste removal and abatement takes additional time (up to 90 days) to plan and may involve plan review by Federal or State agencies.

E. Asbestos

See the [Environmental Demolition and Remediation Project Specifications](#) for Asbestos Abatement.

F. Lead Paint and Leaded Building Components

The handling of all hazardous wastes by contractors and consultants must be managed and disposed of according to State and Federal regulations. It is important to first determine if the abatement or renovation project will generate hazardous wastes. For abatement projects, see the [Environmental Demolition and Remediation Project Specifications](#) on Lead Paint abatement. Depending on project type, EHS or contractors may need to test potential hazardous materials to determine the proper disposal mechanism. Immediately contact EHS before handling suspected lead paint.

If lead paint is abated and debris is determined to be hazardous, contractors shall contact an EHS approved hazardous waste disposal vendor for shipping, and disposal needs. Lead paint abatement wastes must be sent to an approved facility within the U.S. Lead paint waste cannot be shipped out of the country for disposal or recycling. This applies to lead paint abatement wastes, PPE, or lead-contaminated building components. Building components are specific



design or structural elements or fixtures of a building that are distinguished from each other by form, function, and location. Lead-contaminated building components can be sent to C&D landfills within the U.S.

Handling and storage of lead paint wastes, including building components, on campus will follow the guidance listed below and all applicable State and Federal regulations. **Attachment 4** shows the process map for lead paint wastes and lead-contaminated building components at UNC.

1. Prior to the start of a project, contractors should test potentially lead containing materials for hazardous characteristics. All sampling results must be sent to EHS for proper waste determination.
2. Lead Paint abatement waste (e.g. chips, dusts, contaminated PPE) from scraping, grinding, and/or peeling which is determined to be hazardous waste shall be stored in a DOT UN rated container with the lid closed.
3. This container must be labeled as “Lead Paint Waste” and locked in an area away from public access that is at or near the point of generation (e.g. within the room where paint came from).
4. Building components, that can still be distinguished as components, are not subject to hazardous waste rules and should be sent to a C&D landfill. Before shipment, ensure, in writing, that the disposal facility will accept the material. Provide a copy of the written correspondence to EHS.
5. All building components must be stored in a locked completely enclosed container that is not subject to outside elements or the public. Containers must be labeled with the contents.

G. Miscellaneous chemicals

Any chemicals found during demolition will be handled as hazardous waste until proven through laboratory analysis or generator knowledge to be non-hazardous. Examples include cylinders, bottles, cans with liquid, spill clean-up materials, etc. Call EHS immediately if chemicals are found during demolition.

** When in doubt, contact EHS at 919-962-5507.

** Do not ship any Hazardous/Universal Wastes without EHS notification and approval. Remember, EHS must sign all transportation documentation.



VI. WASTE DETERMINATION

Waste determinations will depend on project type on a case by case basis. UNC is the waste generator for all projects at UNC. See Attachments 1 - 4 for a detailed waste determination process map.

VII. ENVIRONMENT, HEALTH AND SAFETY CONTACT

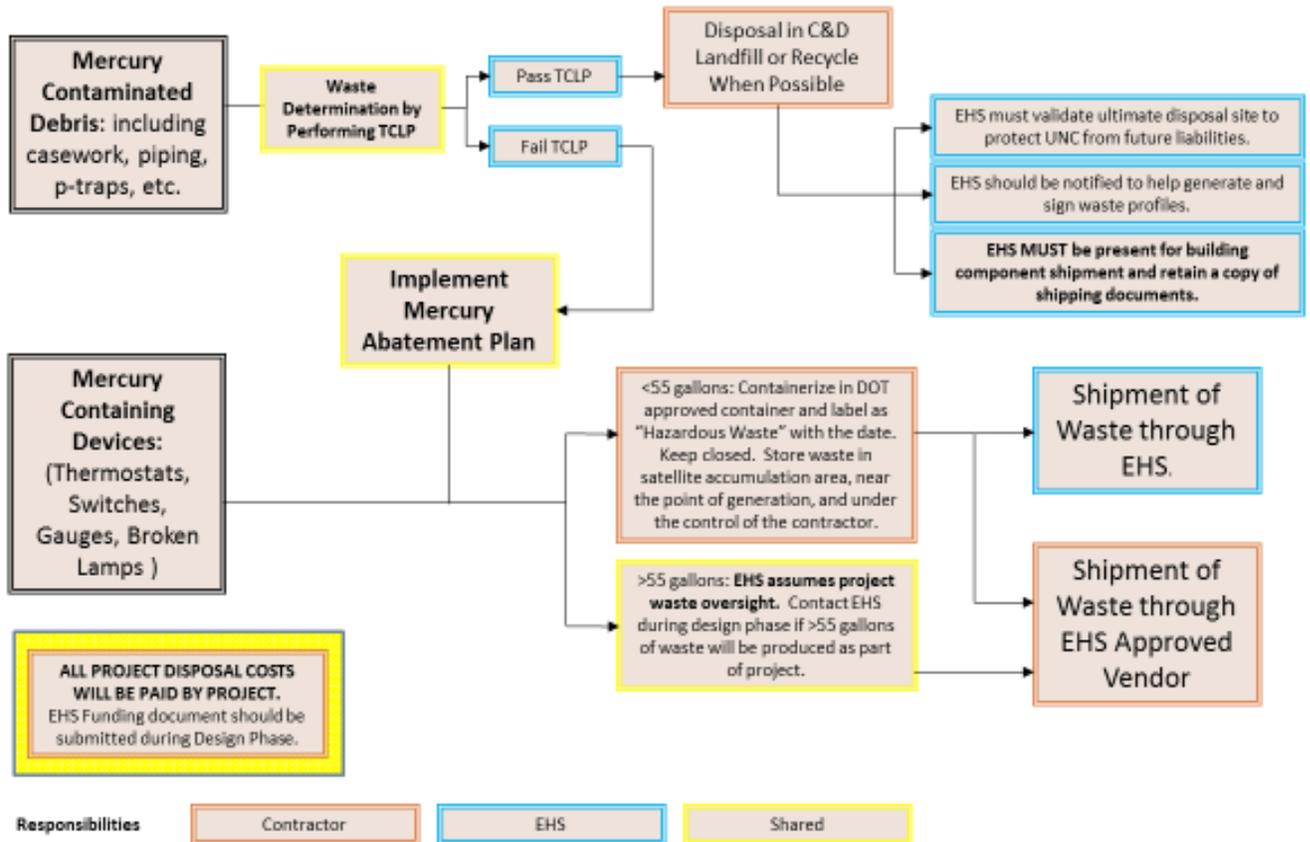
Contact the UNC Department of Environment, Health and Safety at: <http://ehs.unc.edu/staff/>

VIII. APPENDIX

All attachments can be found at: <http://ehs.unc.edu/environmental/>

Attachment 1:

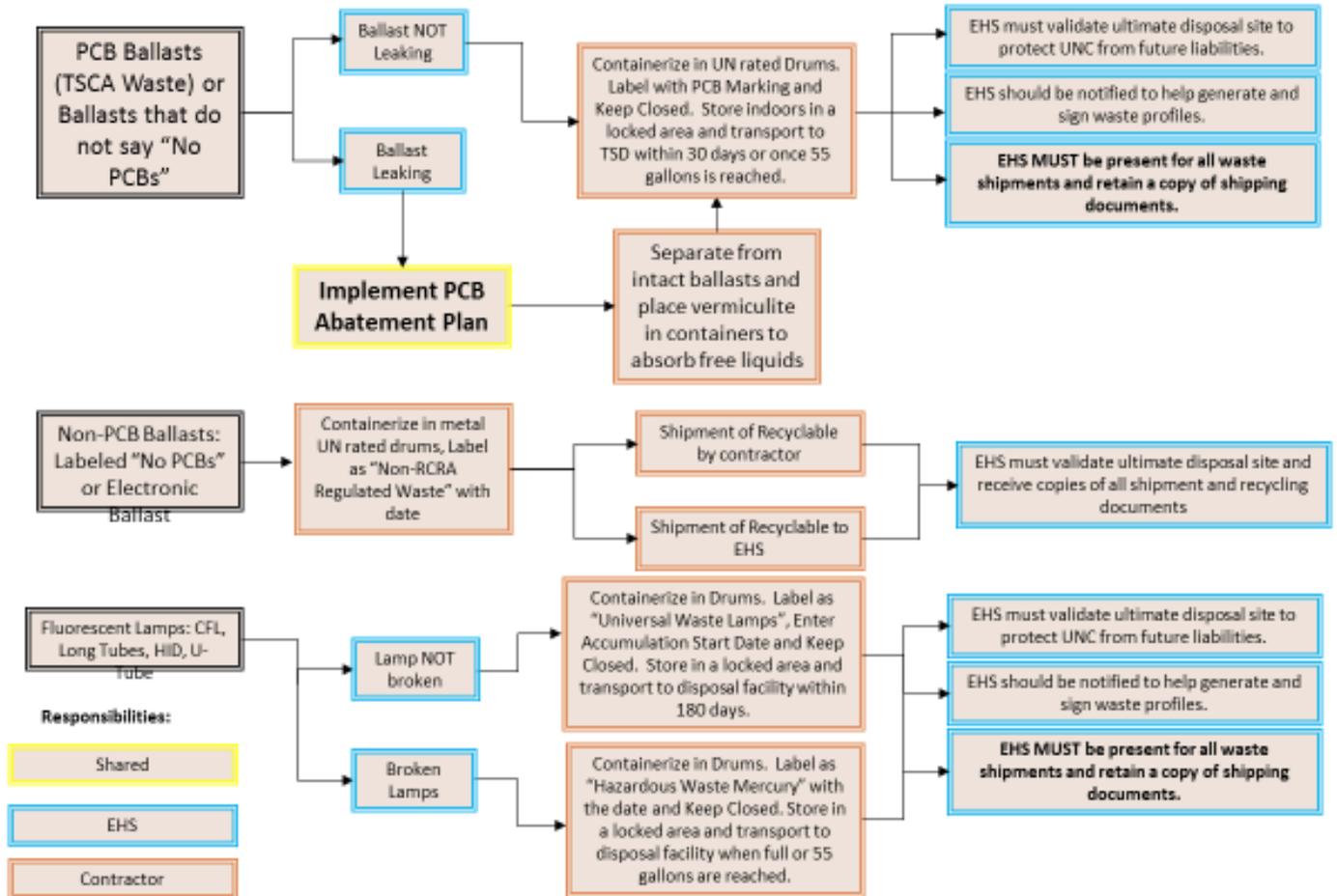
Construction Waste Process: Mercury



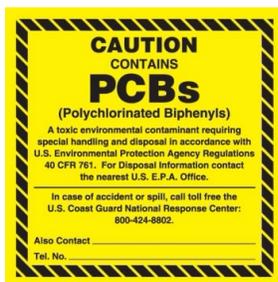


Attachment 2:

Construction Waste Process: Ballasts and Lamps



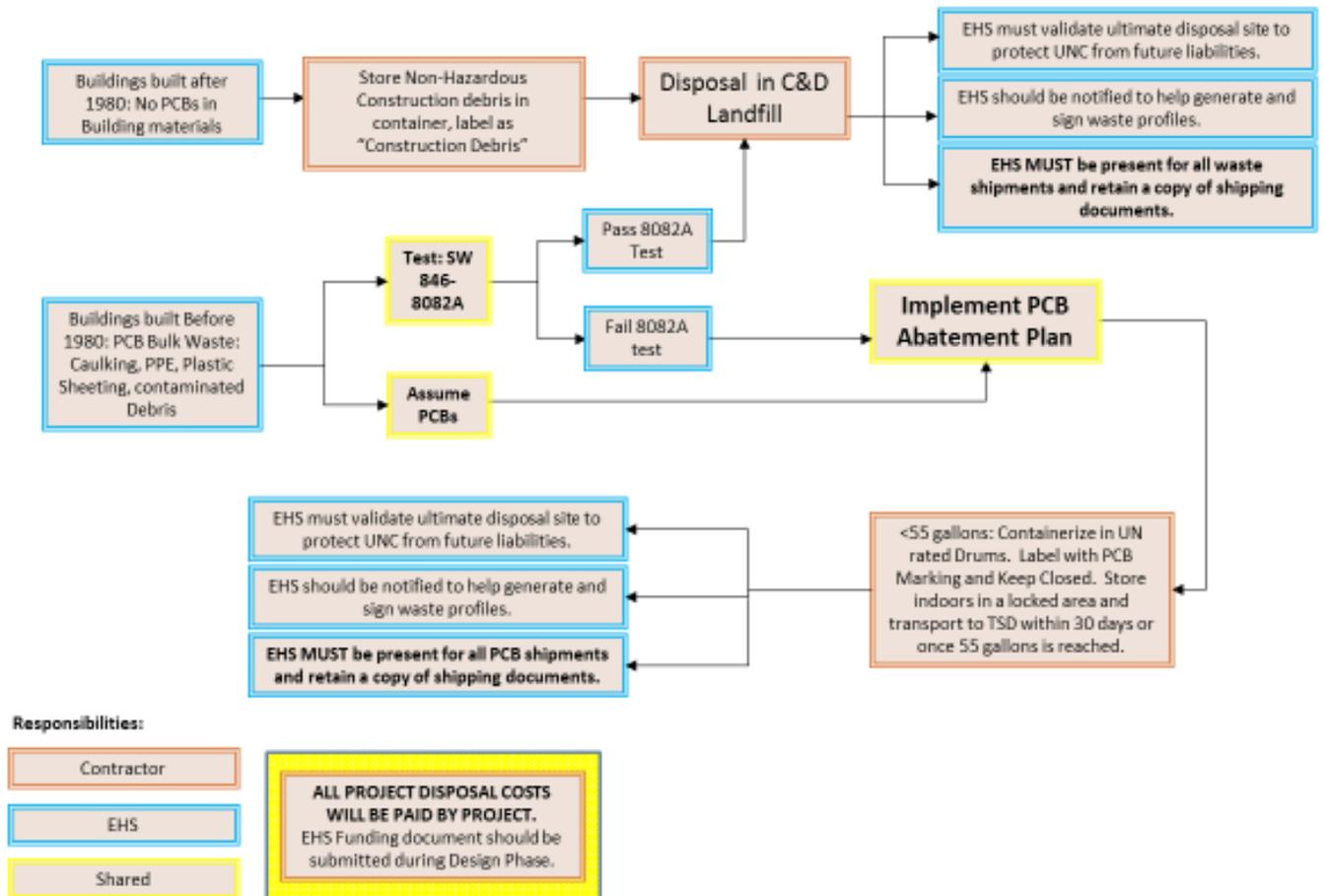
Attachment 2A:





Attachment 3:

Construction Waste Process: PCB Bulk Waste (Caulk)





Attachment 4:

Construction Waste Process: Lead Based Paint

