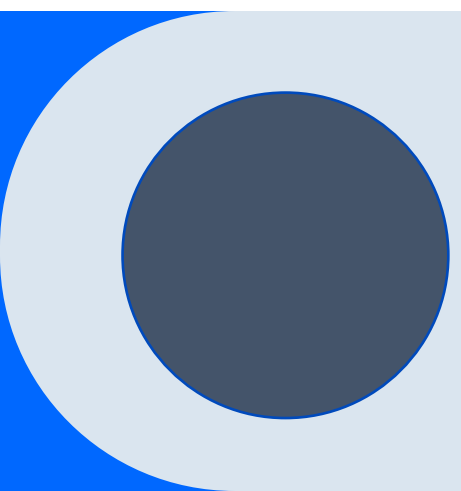





TSCA PCBs –

Regulatory Changes and Tools for Cleanup Sites

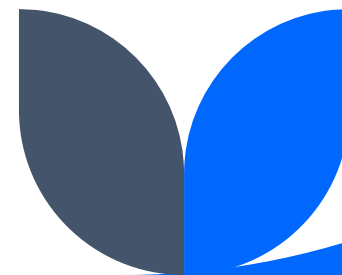


Annah Murray
US EPA R7
PCB Coordinator



Agenda

- Introduction to PCBs (3 slides)
- PCB Regulations Effective Feb. 26, 2024 (6 slides)
- Implementation (5 Slides)
- Cleanup Numbers and Options (4 Slides)
- Tools and Resources for Cleanup Sites (9 Slides)
- Questions & Discussion



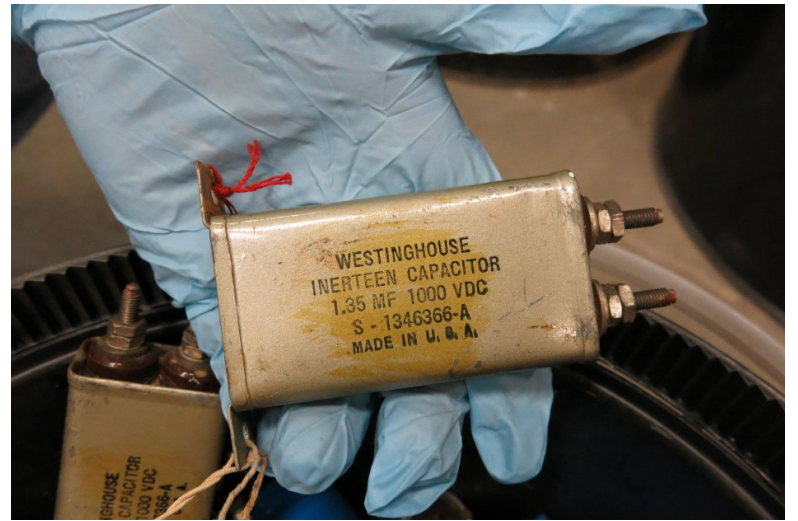


- Commercially manufactured in US from 1929 – 1979
- PCBs are not a single chemical compound but rather 209 different chemical compounds known as PCB congeners.
- Monsanto commercialized 9 different common mixtures of congeners called Aroclors (1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268).
- PCBs were used in electrical equipment (such as transformers, capacitors, switches, voltage regulators, circuit breakers), hydraulic systems, heat transfer systems, natural gas lines and lubricating oils.
- PCBs were added to products such as caulk, paint, adhesives, grout, varnishes, insulation and floor and ceiling tiles.
- PCBs are a probable carcinogen and are persistent, bioaccumulative, and toxic.



- EPA banned the manufacture, processing, distribution in commerce and use of PCBs beginning in 1979.
- EPA promulgated regulations to cover applicability, use, marking, storage, cleanup, disposal, manifesting, reporting and recordkeeping.
- The regulations authorize the use of PCBs in transformers, capacitors, switches, voltage regulators, circuit breakers, hydraulic systems, heat transfer systems, natural gas line systems and other electrical equipment.
- The PCB Regulations are found at Title 40 of the Code of Federal Regulations Part 761 ([40 CFR Part 761](#)).
- The PCB regulations are comprehensive and **prescriptive**.
- **Amendments to the PCB regulations became effective February 26 of 2024.**

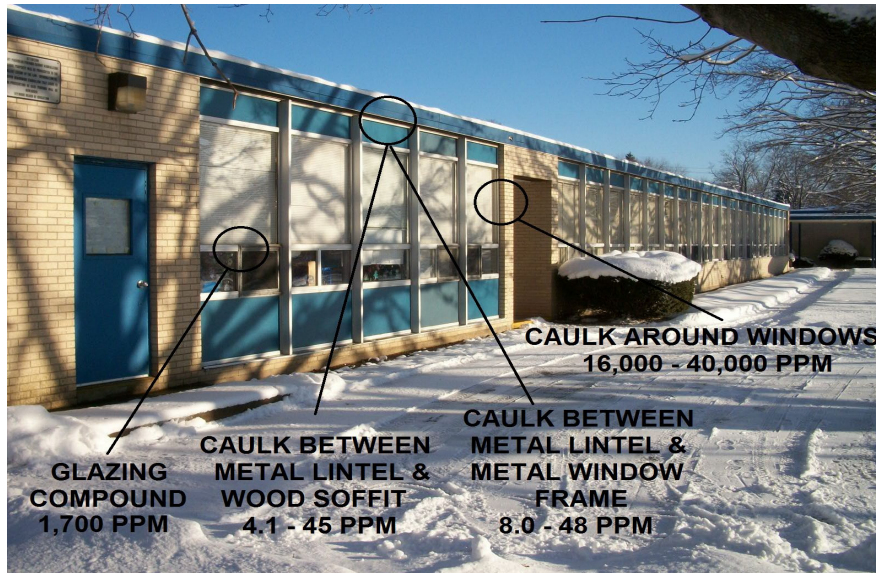




A typical pre-1979 PCB-containing fluorescent light ballast (FLB)



A typical Non-PCB containing fluorescent light ballast. The ballast has a "No PCBs" marking on the top of the ballast and the text "electronic ballast". Only magnetic fluorescent light ballasts contained PCBs.



New PCB Rulemaking Effective February 26, 2024

- ▶ On August 29, 2023, EPA finalized regulatory changes that address several key issues related to implementing the PCB Cleanup and Disposal Program under the Toxic Substances Control Act, including:
 - ▶ expanding the available options for extraction and determinative methods used to characterize and verify the cleanup of PCB waste under the federal TSCA regulations,
 - ▶ adding more flexible provisions to facilitate cleanup and protective disposal of waste generated by spills that occur during emergency situations (e.g., hurricanes or floods),
 - ▶ adding amendments to the performance-based disposal option for PCB remediation waste by adding explicit cleanup provisions, including the requirement to notify EPA and follow specific sampling protocols,
 - ▶ removing the provision allowing PCB bulk product waste to be disposed of as roadbed material to improve protectiveness of human health and the environment, and
 - ▶ harmonizing the general disposal requirements for PCB remediation waste and makes other amendments to improve the implementation of the regulations, clarify ambiguity, and correct technical errors.
- ▶ [View the final rule in the *Federal Register*.](#)

Addition of Extraction Methods

- ▶ For extraction of PCBs from solid matrices, EPA is adding:
 - ▶ **Method 3541 (Automated Soxhlet Extraction),**
 - ▶ **Method 3545A (Pressurized Fluid Extraction), and**
 - ▶ **Method 3546 (Microwave Extraction).**
- ▶ For extraction of PCBs from aqueous matrices, EPA is adding:
 - ▶ **Method 3510C (Separatory Funnel Liquid-Liquid Extraction),**
 - ▶ **Method 3520C (Continuous Liquid-Liquid Extraction), and**
 - ▶ **Method 3535 (Solid-Phase Extraction).**
- ▶ EPA is also restricting the use of EPA Method 3550C (Ultrasonic Extraction) to wipe samples only.
 - ▶ Available studies on Ultrasonic Extraction collectively demonstrate concerns about the inconsistent performance of the method and the robustness of extractions for certain matrices of interest. However, the method is appropriate for wipe samples, because PCBs do not have the same extraction kinetics or extraction efficiency limitations from wipe samples containing relatively small amounts of particulates as they may have in some types of bulk solid samples (e.g., wet clay or caulk).
- ▶ EPA is also adding Method 8082A (update to determinative method in the PCB Regulations).

Flexible Provisions for Emergency Situations

EPA is adding 2 options to increase flexibility and practicality for cleanup of spills caused by and managed in emergency situations.

▶ **Modifying the Spill Cleanup Policy**

- ▶ Permissions to use the as-found PCB concentrations in the spill materials when it is not possible to readily determine the source concentration.
- ▶ More flexible notification timeframes when adverse conditions persist.

▶ **Creating a waiver option**

- ▶ EPA is adding a provision to allow individuals to request a waiver from PCB cleanup and disposal requirements in emergency situations.
- ▶ Waiver request includes:
 - ▶ Information about the spill;
 - ▶ Description of the regulatory requirements to be waived or modified and an explanation of why compliance would be impracticable;
 - ▶ The plan for how the waste would be managed if the relief described was granted; and⁸
 - ▶ Proximity to sensitive ecosystems or populations and how those areas and potential impacts will be addressed.

Adding Cleanup Provisions to 61(b)


EPA is amending § 761.61(b) to add conditions to improve protection of human health and the environment for performance-based cleanup of PCB remediation waste.

This includes:

- Establishing cleanup levels for sites remediated under § 761.61(b);
 - Used lowest values found in the PCB regulations for bulk PCB remediation waste, porous surfaces, liquids, and nonporous surfaces.
- Limiting applicability of this option to sites that are not near sensitive populations or environments, e.g., surface waters, drinking water sources, schools/daycares.
 - List derived mainly from § 761.61(a)
- Requiring verification sampling;
 - Used existing sampling procedures from the regulations - Subpart O, P, and § 761.269.
- Applying recordkeeping requirements from the PCB Spill Cleanup Policy;
- Requiring post-cleanup notification to EPA, including:
 - Site identification information, disposal facility and shipment information, a summary of all applicable records in § 761.125(c)(5); and certification using the language in § 761.3.
- Allowing for disposal of non-liquid PCB remediation waste in RCRA Subtitle C permitted landfills.

Finalized Changes to Annual Reports

- ▶ Removing the provision to lists manifest tracking numbers.¹
- ▶ Adding the requirement to use a standard annual report form.²
- ▶ Addressing the annual report form to the Director or ORCR by mail or email instead of the Regional Administrator.
- ▶ Modifying the categories of PCB waste in the manifest requirements to align with the categories from the annual reports, and adding a sixth category; “Other”.³

 United States Environmental Protection Agency PCB ANNUAL REPORT FORM 40 CFR 761.180(b)(3)		Form Approved OMB No. XXXXX																											
1. Submitter Information	Name: _____ Job Title: _____ Phone Number: _____ Email Address: _____																												
2. Facility EPA ID Number	EPA ID Number: _____																												
3. Facility Name and Address	Facility Name: _____ Street Address: _____ City: _____ State: _____ Zip Code: _____																												
4. Reporting Calendar Year	Calendar Year: _____																												
5. Facility Type	<input type="radio"/> Commercial Storer <input type="radio"/> Disposer <input checked="" type="radio"/> Both																												
6. Technology Type (check all that apply)	<input type="checkbox"/> Incinerator <input type="checkbox"/> Chemical Dechlorination <input type="checkbox"/> Chemical Waste Landfill <input type="checkbox"/> High Efficiency Boiler <input type="checkbox"/> Scrap Metal Recovery Oven <input type="checkbox"/> Fluorescent Light Ballast Recycler <input type="checkbox"/> PCB Electrical Cable Processing for Metal Recovery <input type="checkbox"/> PCB Transformer Decommissioning <input type="checkbox"/> Pipeline and Compressor Systems Decontamination <input type="checkbox"/> Other _____																												
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	Weight (kg)																												
Total Number																													

¹§ 761.180(b)(3)(ii) to be marked as [Reserved].

²§ 761.180(b)(3)

³§ 761.207(a), § 761.180(b)(3)(iii)-(vi)

Supplemental Amendments

Improve implementation of existing requirements

- For example:
 - Request email address on notification form for streamlined processing and quick responses
 - Update several ASTM methods previously incorporated by reference to the more recent versions

Clarify regulatory ambiguity

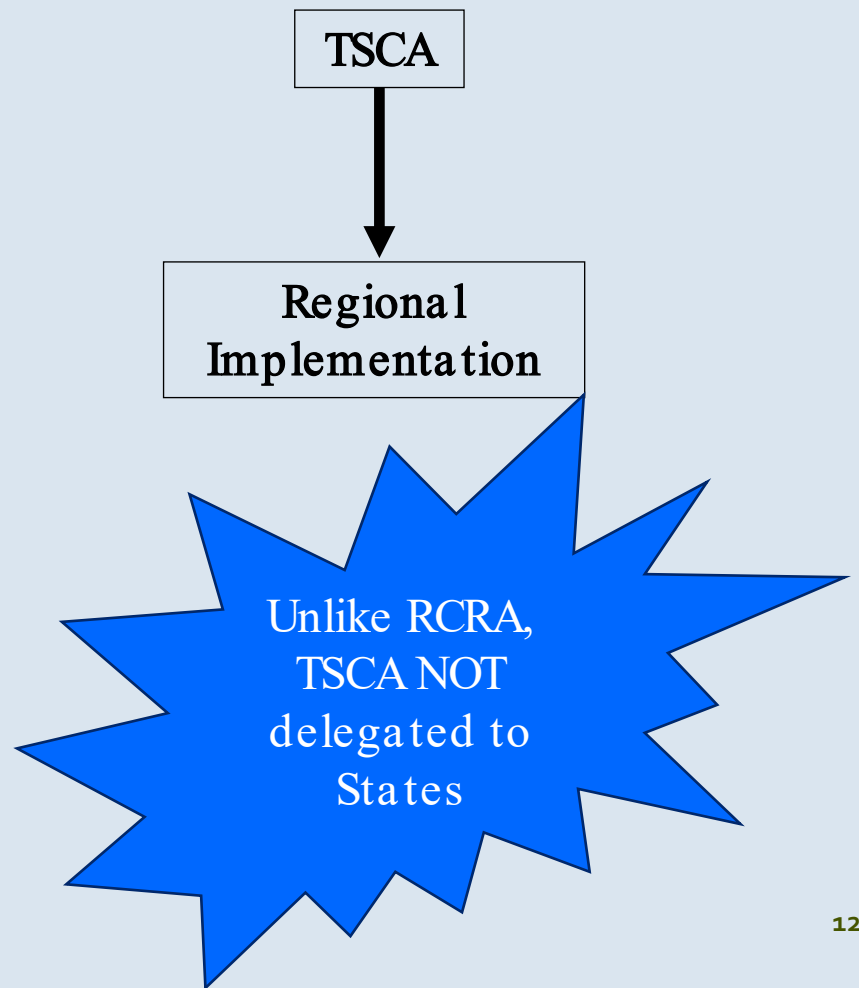
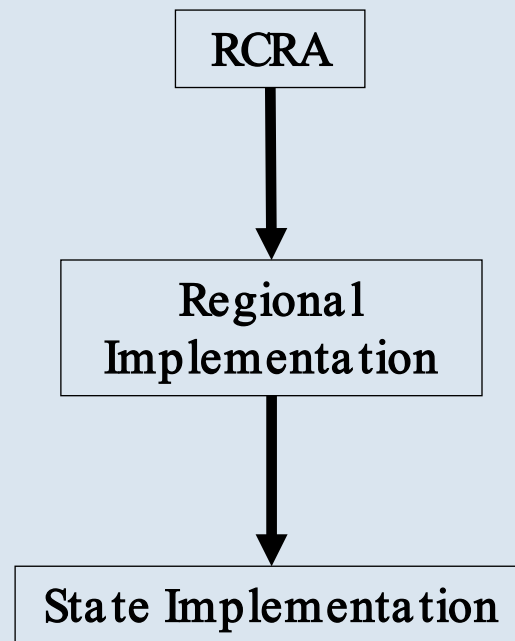
- For example:
 - Add a form for annual reports submitted by commercial storers and disposers of PCB waste
 - Add a definition for “as-found” because the as-found concentration is the basis for several regulatory requirements.

Correct technical errors in the regulations

- For example:
 - Update the mailing address for annual reports and notification of PCB activity forms
 - Change references from “he” to the gender neutral “they.”

Delegation of Regulations

- The PCB regulations and requirements are not delegable to the state.
- Must be implemented and enforced by EPA.
- PCB regulations require a separate and distinct process that often includes EPA notification and approval; delays are likely if EPA is not involved early.



Are the PCB Regulations applicable at RCRA Corrective Action sites?

Yes, for both federal and state lead cleanup sites having regulated PCB waste.

Are the PCB Regulations applicable at Brownfield sites?

Yes, for those sites having regulated PCB waste.

Are the PCB Regulations applicable at State Voluntary Cleanup sites?

Yes, for those sites having regulated PCB waste.

Contact the EPA Regional PCB Coordinator

How do I know if I have regulated PCB waste?

(And other sites to sample for PCBs)

- ▶ Sites with known releases of PCBs
- ▶ Sites that had or have electrical equipment, hydraulic or heat transfer systems
- ▶ Sites with historical operations that may or did include the use, processing or management of PCB containing equipment, materials or waste
- ▶ Scrap yards
- ▶ Train Yards and railroad tracks
- ▶ Buildings built or renovated before 1979 containing materials, such as caulk, paint, joint grout, adhesives, fluorescent light ballasts
- ▶ Soils around buildings built before 1979
- ▶ Military bases
- ▶ Natural gas compressor stations
- ▶ Automobile and Appliance shredding facilities and fluff piles
- ▶ If there is any doubt



Types of Regulated PCB Waste

PCB Liquids

- Liquids with PCB concentration of ≥ 50 ppm
- Regulated for disposal under [§761.60\(a\)](#) or decon under [§761.79](#)
- Special Note - Used oil is regulated between 2 and 49 ppm under [§761.20\(e\)](#)

PCB Items or Articles

- Manufactured articles or container that contain PCBs and whose surfaces have been in contact with PCBs.
- Examples include PCB Transformer or capacitor (≥ 500 ppm), PCB-contaminated transformer or capacitor (≥ 50 but < 500 ppm), natural gas pipelines, electric motors and pumps
- Regulated for disposal under [§761.60\(b\)](#) or decontamination under [§761.79](#)

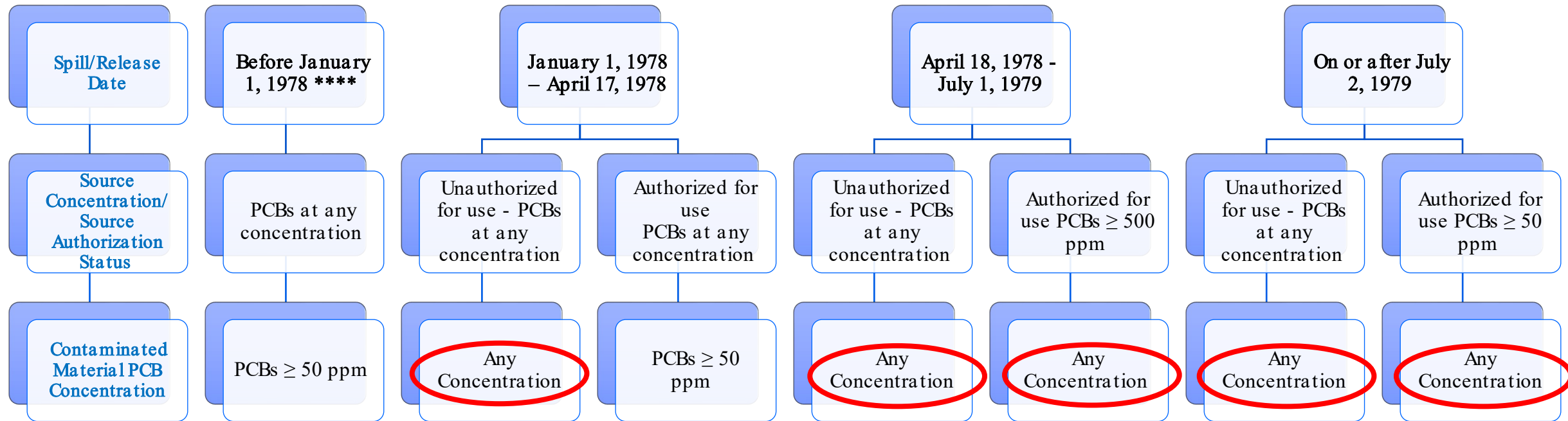
PCB Bulk Product Waste

- Manufactured non-liquid products containing ≥ 50 ppm
- Examples include caulk, paint, floor & ceiling tiles, adhesives, gaskets, fluorescent light ballasts, car and appliance fluff
- Regulated for disposal under [§761.62](#); may be disposed of in RCRA Subtitle D landfills at any concentration if state allows & landfill is able/willing to accept it

PCB Remediation Waste

- Materials contaminated from a spill or release of PCBs.
- Materials include soil, debris, sediments, gravel, dredged materials, buildings, porous surfaces like concrete or masonry and non-porous surfaces like metal
- Regulatory requirements depend on **spill date, source concentration & sample concentration**
- Regulated for cleanup and disposal under [§761.61](#)

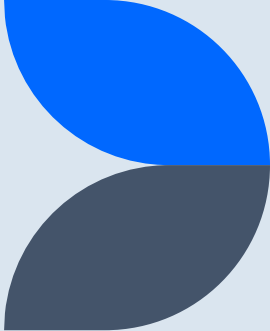
PCB Remediation Waste Under 40 CFR 761.3*



*PCB remediation waste generally means wastes containing PCBs as a result of a spill, release, or other unauthorized disposal before, on, or after the dates and at the concentrations specified in 761.3 (depicted above).

Key Takeaway Point:

Even if the material is < 50 ppm, it may still be regulated for cleanup and disposal.



Additional numbers to consider:

- OSHA <https://www.osha.gov/enforcement/directives/std-01-04-002>
 - Inhalation in 8 hours for 5 days per week to no more than 1 mg/m³ for Aroclor 1242 (PEL)
 - Inhalation in 8 hours for 5 days per week to no more than 0.5 mg/m³ for Aroclor 1254. (PEL)
 - Both standards encompass all physical forms of aerosols, vapor, mist, sprays, and PCB-laden dust particles.
- NIOSH <https://www.osha.gov/chemicaldata/121>
 - Time weighted Average over a 10-hour workday 1 ug/m³ (REL)
- EPA has published levels ([RSL Tables](#), and [ELEs for Air in Schools](#))
 - Screening Levels for common Aroclors and 12 “Dioxin-like congeners”
 - Exposure Levels for evaluating PCBs in Indoor School Air
 - EPA has the authority to require more stringent cleanup levels and conditions

PCB Cleanup Options

The PCB Regulations provide two main options for conducting cleanup of PCB remediation waste:

1. The Spill Cleanup Policy (Subpart G) – intended for small, recent (less than 72 hours old) spills that don't impact or threaten a sensitive environment.
2. Section 761.61 - Intended for cleanup up sites impacted by older and/or larger spills.
 - Contains three options for conducting a cleanup.

PCB Remediation Waste Cleanup and Disposal Options

01

Self-implementing
cleanup and
disposal, 40 CFR
761.61(a)

02

Performance-
based disposal, 40
CFR 761.61(b)

03

Risk-based
cleanup and
disposal approval,
40 CFR 761.61(c)

What is PCB FAST?

- Facility Approval Streamlining Toolbox (FAST)
- A resource for use by EPA staff and Responsible Parties
- Information / tools specific to PCB remediation waste cleanup
- Voluntary collaborative process to reduce delays
- Key Goals
 - Improve quality: PCB cleanup notifications, applications, approvals
 - Expedite EPA's TSCA PCB cleanup approvals
 - Facilitate faster cleanup and reuse
- Published on the EPA Web: EPA530-F-17-002, May 2017



PCB Facility Approval Streamlining Toolbox

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Inside Look

[Link to PCB FAST Toolkit](#)

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What tools are included?

- **Tool 1: Initial Discussion with Responsible Party Checklist**
 - You don't have to know everything about your site.
 - The goal is to engage with your EPA PCB Coordinator as early as possible.
- **Tool 2: PCB Sites Cleanup Framework**
 - A collaborative communication with EPA on a conceptual site model
 - Worksheet to guide you through some of the most important steps
- **Tool 3: TSCA Self-Implementing PCB Cleanups Checklist – 61(a)**
 - Checklist to help get to a complete notification
 - With key clarifications and special considerations all in one place
- **Tool 4: TSCA Risk-Based PCB Cleanups Checklist – 61(c)**
 - Checklist for a complete application
 - Additional information section of considerations EPA may request further information on.

[Link to PCB FAST Toolkit](#)

Tool 3 – TSCA self implementing cleanups checklist – 761.61(a)

1. Part 1 Checklist: Information Required in 40 CFR 761.61(a)(3) to Include in Notification

Pre-Cleanup Site Characterization

- The nature of the contamination, including kinds of materials contaminated. (40 CFR 761.61(a)(3)(i)(A))
- A summary of the procedures used to sample contaminated and adjacent areas and a table or cleanup site map showing PCB concentrations measured in all pre-cleanup characterization samples. The summary must include sample collection and analysis dates. The EPA Regional Administrator may require more detailed information including, but not limited to, additional characterization sampling or all sample identification numbers from all previous characterization activities at the cleanup site. (40 CFR 761.61(a)(3)(i)(B))
- The location and extent of the identified contaminated area, including topographic maps with sample collection sites cross referenced to the sample identification numbers in the data summary from paragraph (a)(3)(i)(B) of this section. (40 CFR 761.61(a)(3)(i)(C))

PCB Cleanup Plan

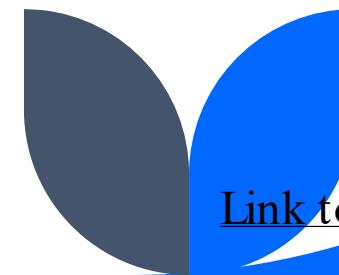
- A cleanup plan for the site, including schedule, disposal technology, and approach. This plan should contain options and contingencies to be used if unanticipated higher concentrations or wider distributions of PCB remediation waste are found or other obstacles force changes in the cleanup approach. (40 CFR 761.61(a)(3)(i)(D))

Written Certification

- A written certification signed by the owner of the property where the cleanup site is located and the party conducting the cleanup, that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site are on file at the location designated in the certificate, and are available for EPA inspection. Persons using alternate methods for chemical extraction and chemical analysis for site characterization must include in the certificate a statement that such a method will be used and that a comparison study which meets or exceeds the requirements of Subpart Q of this part, and for which records are on file, has been completed prior to verification sampling." (40 CFR 761.61(a)(3)(i)(E))

Two parts

1. Information required in 40 CFR Part 761.61(a)(3)
2. Recommended Additional Information to Include in Cleanup Plan



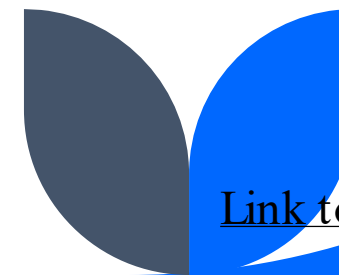
Tool 3 – Recommended Additional Information to Include in Cleanup Plan

b. PCB Cleanup Plan

- Additional site characterization: Description of additional site characterization to be conducted, if determined to be necessary. This site characterization should follow a Sampling and Analysis Plan approved by EPA
- PCB cleanup site: Description and identification of the cleanup site in site maps or figures to scale consistent with the definition of cleanup site. 40 CFR 761.3 defines cleanup site: “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.”
- Sampling and analysis plan (SAP) developed using data quality objectives and a comprehensive conceptual site model: At a minimum, EPA recommends the SAP describe the: (1) laboratory methods for sample extraction, (2) procedures for cleanup of sample extracts, (3) procedures for extract analysis, (4) sample collection methods for additional characterization, (5) sample collection methods for cleanup verification samples, and (6) types of quality control samples that will be used for the analyses such as laboratory control samples, laboratory control sample duplicates, matrix spikes, matrix spikes duplicates, surrogate recoveries, method blanks, and laboratory acceptance criteria for all these quality control samples. In addition, the SAP should include tables summarizing the number and types of samples (including field and laboratory quality control samples) that will be taken, sample identification numbers, and sample locations; and figures and maps depicting sampling locations and cross referencing the sample identification numbers included in the tables
- PCB cleanup levels to be applied to the site:
 - Description of cleanup levels to be applied in accordance with 40 CFR 761.61(a)(4)(i) through (iv)
 - Justification of cleanup levels including discussion of impacts on human and ecological receptors and habitat that may be affected by PCB contamination if cleanup levels more stringent than prescribed in 40 CFR 761.61(a)(4)(i) through (iv) need to be applied to the site
 - Depending on site-specific circumstances, EPA may require more stringent cleanup levels consistent with 40 CFR 761.61(a)(4)(vi) or require that cleanup be conducted under 40 CFR 761.61(c) (risk-based PCB cleanup option)

Part 2.

- a. Pre-Cleanup Site Characterization
- b. PCB Cleanup Plan
- c. Certification
- d. Decon. Standards
- e. Other Recommended Info.



TOOL 4 - TSCA Risk-Based PCB Cleanups Checklist

01

Introduction

General, Framework Meetings, Applicability, Disclaimers, and Clarifications

02

Before Submitting a PCB Risk-Based Application

Current Conditions Report and Data Gaps

03

Checklist for Risk-Based Approval Application Content

Checklist and Recommended Additional Information

[Link to PCB FAST Toolkit](#)

New PCB Technical Guidance

Region 7 Web Page

- ▶ [Technical Guidance for Determining the Presence of Manufactured PCB Products in Buildings and Other Structures Document](#)
 - ▶ Technical guidance to assist property owners or operators, their contractors, and analytical labs in determining the presence of manufactured PCB products in buildings or other structures.
 - ▶ Presents a statistically-based sampling approach to potentially determine the presence of PCBs

- ▶ <https://www.epa.gov/pcbs/epa-region-7-polychlorinated-biphenyls>

On the page:

- [Regional Contacts](#)
- [PCB Regulations](#)
- [PCB Toxicological Information](#)
- [Regional Topics](#)
 - [PCBs in Building Materials](#)
 - [PCBs and Remediation Waste](#)
 - [PCBs and Used Oil](#)
 - [PCBs and e-Manifest](#)
 - [PCBs and X-ray Machines](#)
- [Region 7 Final Approvals](#)

Resources

A more complete list of PCB guidance can be found at the EPA website.

Your best resource
is your EPA
Regional PCB
Coordinator

❖ Sampling Guidance

<https://www.epa.gov/sites/default/files/2015-08/documents/subpartmopr.pdf>

❖ Cleanup and Disposal Options

<https://www.epa.gov/pcbs/managing-remediation-waste-polychlorinated-biphenyls-pcbs-cleanups#cleanup>

❖ Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act

<https://www.epa.gov/sites/default/files/2015-08/documents/pcb-guid3-06.pdf>

Resources

A more complete list of PCB guidance can be found at the EPA website.

Your best resource
is your EPA
Regional PCB
Coordinator

- ❖ **PCBs in Fluorescent Light Ballasts Fact Sheet**
<https://www.epa.gov/sites/default/files/2020-07/documents/pcb-flb-factsheet-final-july-2020.pdf>
- ❖ **PCBs in Used Oil Fact Sheet**
https://www.epa.gov/system/files/documents/2022-04/pcbs_in_used_oil_fact_sheet_corrected2.pdf
- ❖ **PCBs in Building Materials Fact Sheet**
https://www.epa.gov/sites/default/files/2021-05/documents/final_pcb_buildings_fact_sheet_05-10-2021_to_upload.pdf

Thank you

Anna h Murray

Murray.Annah@EPA.gov

913-551-7413

<https://www.epa.gov/pcbs>