

# PCB Remediation Under TSCA: A Field Playbook for Defensible Decisions

Presented to:

**REGFORM**  
Regulatory Environmental Group  
For Missouri

Nick Godfrey, Principal



**Environmental  
Works, Inc.**

COMPREHENSIVE ENVIRONMENTAL SOLUTIONS

# AGENDA

Monday Mayhem → Calm Cleanup



# WHY THIS TALK EXISTS

Monday Mayhem → Calm Cleanup

Monday mayhem is *real*

Calm cleanup is possible

Multiple scenarios, one  
*playbook*

**SURPRISE**



**CONTROL**

# TOXIC SUBSTANCES CONTROL ACT

EPA'S PCB Regulations live here

## TSCA PCBs: 40 CFR Part §761

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761>

<b>Part 761</b> Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions	761.1 – 761.398
<b>Subpart A</b> General	761.1 – 761.19
§ 761.1 Applicability.	
§ 761.2 PCB concentration assumptions for use.	
§ 761.3 Definitions.	
§ 761.19 Incorporation by reference.	
<b>Subpart B</b> Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items	761.20 – 761.35
§ 761.20 Prohibitions and exceptions.	
§ 761.30 Authorizations.	
§ 761.35 Storage for reuse.	
<b>Subpart C</b> Marking of PCBs PCB Items	761.40 – 761.45
§ 761.40 Marking requirements.	
§ 761.45 Marking formats.	
<b>Subpart D</b> Storage and Disposal	761.50 – 761.79
§ 761.50 Applicability.	
§ 761.60 Disposal requirements.	
§ 761.61 PCB remediation waste.	
§ 761.62 Disposal of PCB bulk product waste.	
§ 761.63 PCB household waste storage and disposal.	
§ 761.64 Disposal of wastes generated as a result of research and development activities.	
§ 761.65 Storage for disposal.	
§ 761.66 Emergency situations.	
§ 761.70 Incineration.	
§ 761.71 High efficiency boilers.	
§ 761.72 Scrap metal recovery ovens and smelters.	
§ 761.75 Chemical waste landfills.	
§ 761.77 Coordinated approval.	
§ 761.79 Decontamination standards and procedures.	
<b>Subpart E</b> Exemptions	761.80
§ 761.80 Manufacturing, processing and distribution in commerce exemptions.	
<b>Subpart F</b> Transboundary Shipments of PCBs for Disposal	761.91 – 761.99
§ 761.91 Applicability.	
§ 761.93 Import for disposal.	
§ 761.97 Export for disposal.	
§ 761.99 Other transboundary shipments.	
<b>Subpart G</b> PCB Spill Cleanup Policy	761.120 – 761.135
§ 761.120 Scope.	
§ 761.123 Definitions.	
§ 761.125 Requirements for PCB spill cleanup.	
§ 761.130 Sampling requirements.	
§ 761.135 Effect of compliance with this policy and enforcement.	
<b>Subpart J</b> General Records and Reports	761.180 – 761.193
§ 761.180 Records and monitoring.	
§ 761.185 Certification program and retention of records by importers and persons generating PCBs in excluded manufacturing processes.	
§ 761.187 Reporting importers and by persons generating PCBs in excluded manufacturing processes.	
§ 761.193 Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs.	
<b>Subpart K</b> PCB Waste Disposal Records and Reports	761.202 – 761.219
§ 761.202 EPA identification numbers.	
§ 761.205 Notification of PCB waste activity (EPA Form 7710-53).	
§ 761.207 The manifest—general requirements.	
§ 761.208 Obtaining manifests.	
§ 761.209 Number of copies of a manifest.	
§ 761.210 Use of the manifest—Generator requirements.	
§ 761.211 Manifest system—Transporter requirements.	
§ 761.212 Transporter compliance with the manifest.	
§ 761.213 Use of manifest—Commercial storage and disposal facility requirements.	
§ 761.214 Retention of manifest records.	
§ 761.215 Manifest discrepancies.	
§ 761.216 Unmanifested waste report.	
§ 761.217 Exception reporting.	
§ 761.218 Certificate of disposal.	
§ 761.219 One-year exception reporting.	
<b>Subpart M</b> Determining a PCB Concentration for Purposes of Abandonment or Disposal of Natural Gas Pipeline, Selective Sample Sites, Collecting Surface Samples, and Analyzing Standard PCB Wipe Samples	761.240 – 761.257
§ 761.240 Scope and definitions.	
§ 761.243 Standard wipe sample method and size.	
§ 761.247 Sample site selection for pipe segment removal.	
§ 761.250 Sample site selection for pipeline section abandonment.	
§ 761.253 Chemical analysis.	
§ 761.257 Determining the regulatory status of sampled pipe.	
<b>Subpart N</b> Cleanup Site Characterization Sampling for PCB Remediation Waste in Accordance with § 761.61(a)(2)	761.260 – 761.274
§ 761.260 Applicability.	
§ 761.265 Sampling bulk PCB remediation waste and porous surfaces.	
§ 761.269 Sampling non-porous surfaces.	
§ 761.269 Sampling liquid PCB remediation waste.	
§ 761.272 Chemical extraction and analysis of samples.	
§ 761.274 Reporting PCB concentrations in samples.	
<b>Subpart O</b> Sampling to Verify Completion of Soil Remediation Using and On-Site Disposal of Bulk PCB Remediation Waste and Porous Surfaces in Accordance With § 761.61(a)(6)	761.280 – 761.290
§ 761.280 Application and scope.	
§ 761.283 Determination of the number of samples to collect and sample collection locations.	
§ 761.286 Sample size and procedure for collecting a sample.	
§ 761.289 Compositing samples.	
§ 761.292 Chemical extraction and analysis of individual samples and composite samples.	
§ 761.295 Reporting and recordkeeping of the PCB concentrations in samples.	
§ 761.298 Decisions based on PCB concentration measurements resulting from sampling.	
<b>Subpart P</b> Sampling Non-Porous Surfaces for Measurement-Based Use, Reuse, and On-Site or Off-Site Disposal Under § 761.61(a)(6) and Decontamination Under § 761.79(b)(3)	761.300 – 761.316
§ 761.300 Applicability.	
§ 761.302 Proportion of the total surface area to sample.	
§ 761.304 Determining sample location.	
§ 761.306 Sampling of meter square surface by random selection of tiles.	
§ 761.308 Sample selection by random number generation on any two-dimensional square grid.	
§ 761.310 Collecting the sample.	
§ 761.312 Compositing of samples.	
§ 761.314 Chemical analysis of standard wipe test samples.	
§ 761.316 Interpreting PCB concentration measurements resulting from this sampling scheme.	
<b>Subpart Q</b> Self-Implementing Alternative Extraction and Chemical Analysis Procedures for Non-liquid PCB Remediation Waste Samples	761.320 – 761.326
§ 761.320 Applicability.	
§ 761.322 Sample preparation.	
§ 761.326 Conducting the comparison study.	
<b>Subpart R</b> Sampling Non-Liquid, Non-Metal PCB Bulk Product Waste for Purposes of Characterization for PCB Disposal in Accordance With § 761.62, and Sampling PCB Remediation Waste Destined for Off-Site Disposal, in Accordance With § 761.61	761.340 – 761.359
§ 761.340 Applicability.	
§ 761.345 Form of the waste to be sampled.	
§ 761.346 Three levels of sampling.	
§ 761.347 First level sampling—waste from existing piles.	
§ 761.348 Contemporaneous sampling.	
§ 761.350 Subsampling from composite samples.	
§ 761.353 Second level of sample selection.	
§ 761.355 Third level of sample selection.	
§ 761.356 Conducting a leach test.	
§ 761.357 Reporting the results of the procedure used to simulate leachate generation.	
§ 761.358 Determining the PCB concentration of samples of waste.	
§ 761.359 Reporting the PCB concentrations in samples.	
<b>Subpart S</b> Double Wash/Rinse Method for Decontaminating Non-Porous Surfaces	761.360 – 761.378
§ 761.360 Background.	
§ 761.363 Applicability.	
§ 761.366 Cleaning equipment.	
§ 761.369 Pre-cleaning the surface.	
§ 761.372 Specific requirements for relatively clean surfaces.	
§ 761.375 Specific requirements for surfaces coated or covered with dust, dirt, grime, grease, or another absorbent material.	
§ 761.378 Decontamination, reuse, and disposal of solvents, cleaners, and equipment.	
<b>Subpart T</b> Comparison Study for Validating a New Performance-Based Decontamination Solvent Under § 761.79(b)(4)	761.380 – 761.396
§ 761.380 Background.	
§ 761.383 Applicability.	
§ 761.386 Required experimental conditions for the validation study and subsequent use during decontamination.	
§ 761.389 Testing parameter requirements.	
§ 761.392 Preparing validation study samples.	
§ 761.395 A validation study.	
§ 761.396 Reporting and recordkeeping.	

## Today's Focus: High-Level Overview

Source | History | Pathway

Manufactured product or contaminated media?

What do we know about the releases over time? [Hint: pre-April 1978?]

How did it become contaminated?

# PCB WASTES

Defined in §761.3

## Key Distinctions:

Each Defined in §761.3

- **PCB Remediation Waste**  
Impacted media
- **PCB Bulk Product Waste**  
Manufactured Product - Primarily  
buildings from 1950-1970
- **Excluded PCB Product**  
Difficult to prove in most cases

## Is it a PCB Remediation Waste:

- **As-found concentration  $\geq 50$  ppm** **yes**
- **Pre-April 1978 disposal  $< 50$  ppm** **no**

### **Warning!**

- **Disposal after July 1979?**
- **Source was  $\geq 50$  ppm**
- **Any As-found concentration qualifies**

# PCB Partitioning and Secondary Source Formation in Building Materials

40 CFR 761.61(a)

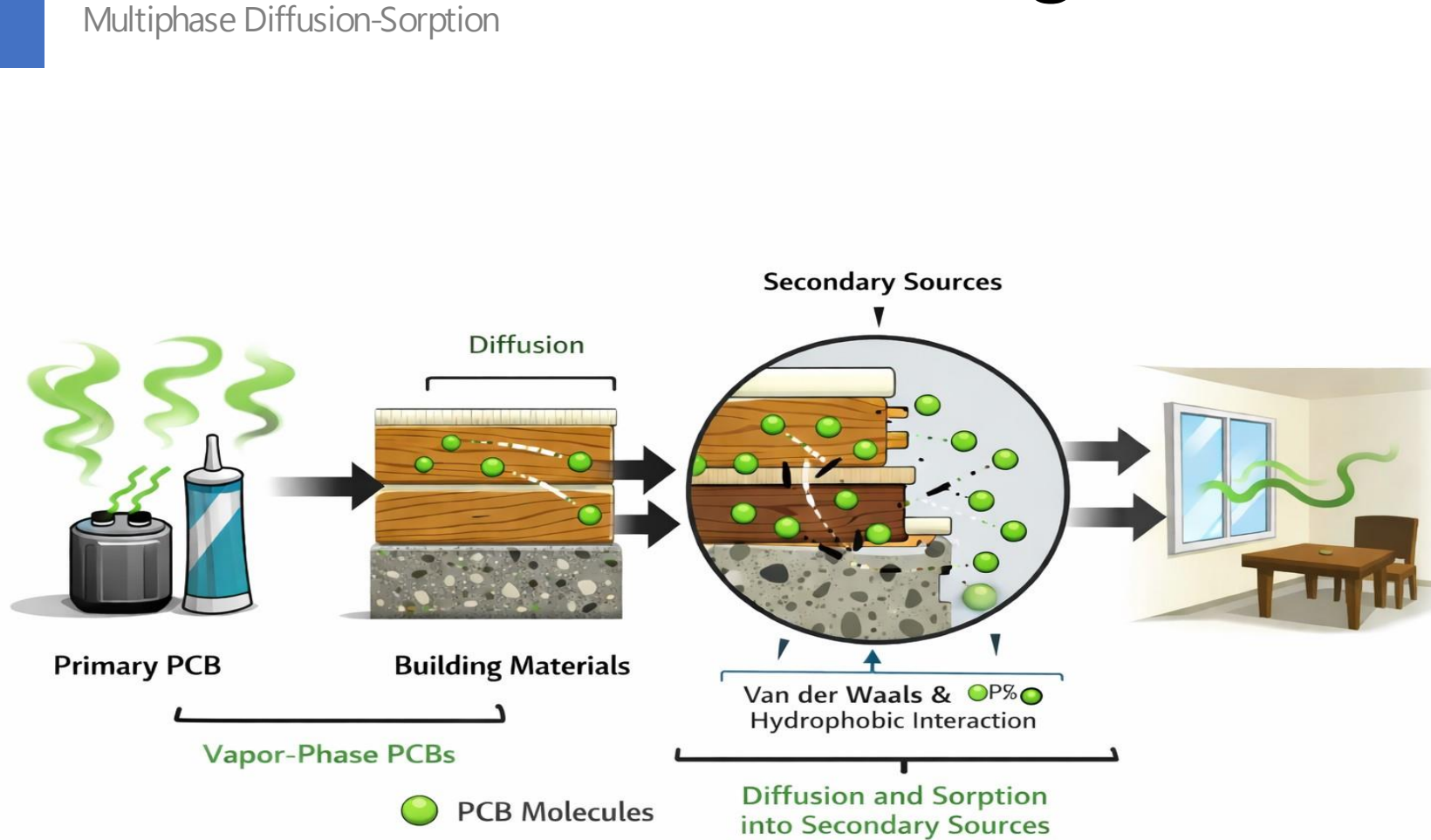
Primary Source Material -  
>50 ppm –caulk, paint, sealants, transformer oils etc.

40 CFR 761.61(a)

Secondary Source - Impacted Materials

=

<50 ppm treated  
> 50 ppm



# PCB Partitioning and Secondary Source Formation in Building Materials

Multiphase Diffusion-Sorption



40 CFR 761.61(a)

The Presence of a Primary Source

- **GREATER THAN OR EQUAL TO 50 ppm**
- **AUTOMATICALLY SUBJECTS CONTAMINATED SECONDARY MATERIALS TO TSCA REGULATION**

# REMEDIATION WASTE REGULATORY ROUTES

761.61(a), (b), (c)

## Primary TSCA Regulatory Options:

### 1) Self-implementing cleanup and disposal

§761.61(a)

### 2) Performance-based disposal

§761.61(b)

### 3) Risk-based disposal

§761.61(c)

## Key Distinctions:

Each Defined in §761.3

- **PCB Remediation Waste**
- **PCB Bulk Product Waste**
- **Excluded PCB Product**

Difficult to prove in most cases

# THE FIRST 48 HOURS - PCB REMEDIATION WASTE

Control beats perfect information

1

Stabilize + Bucket

2

Route it  
§761.61 (a/b/c)

3

Separate waste

4

Calendar deadlines

5

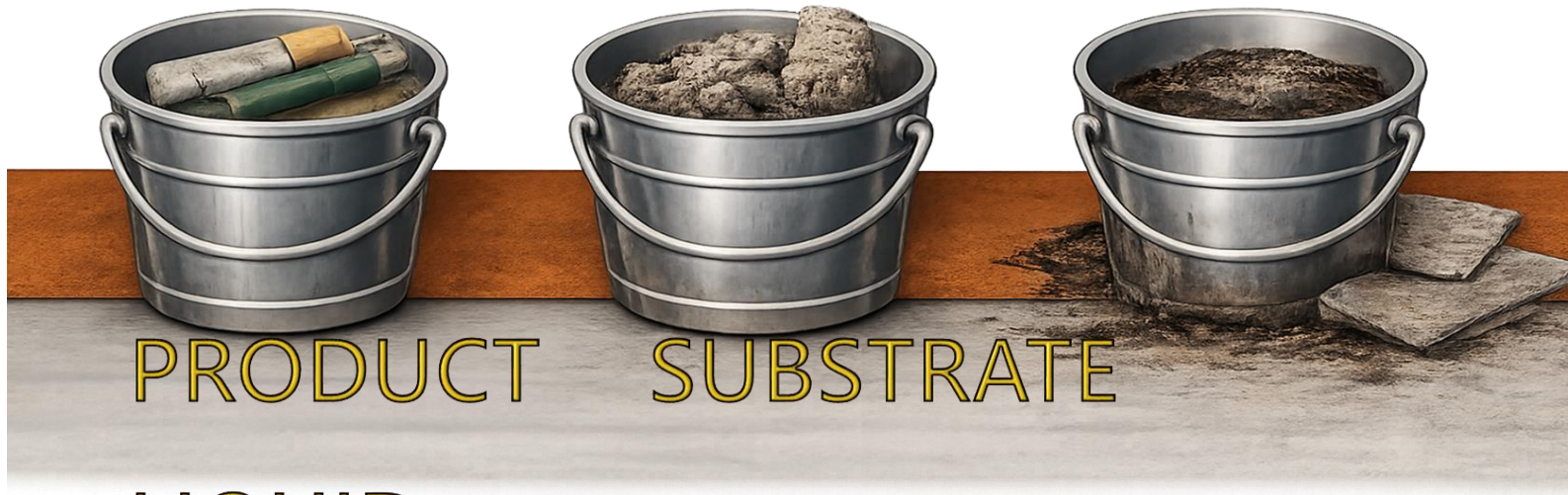
Defensible record

*Result: protected occupants, protected owners, protected schedule.*

# TRIAGING THE PCB ISSUE – STEP 1

Field sorting to prevent early waste handling errors

What physically *holds or carries* the PCB right now?



PRODUCT SUBSTRATE

LIQUID

Sort first | Solve second

# TRIAGING THE PCB ISSUE – STEP 2

Routing to the correct Part 761 pathway

Field Bucket (Physical Triage)	Applicable Part 761 Route	CFR Reference
Product	<b>Bulk Product Waste</b>	761.62
	Disposal Requirements Route	761.60
	Storage for Disposal Route	761.65
Substrate	<b>Remediation Waste</b>	<b>761.61 (a)/(b)/(c)</b>
	Bulk Product Waste Route (Only if designated together with product)	761.62
	Disposal Requirements Route	761.60
	Storage for Disposal Route	761.65
Free Liquids (If Present)	<b>Spill Cleanup Policy</b>	<b>Subpart G</b>
	Disposal Requirements Route	761.60
	Storage for Disposal Route	761.65

# CHOOSE THE CLEAN UP ROUTE

PCB Remediation Waste

## PCB Remediation Waste “Routes”

- **Self-Implementing Cleanup & Disposal** 761.61(a)  
*Highly prescriptive, limited media  
Notification and Standards Apply*
- **Performance-Based Disposal** 761.61(b)  
*(b)(1): Limited situational/media applicability  
(b)(2): Used for disposal only situations*
- **Risk-Based Disposal** 761.61(c)  
*Broad media applicability; EPA approval required*

## PCB FACILITY APPROVAL STREAMLINING TOOLBOX

### A Framework for Streamlining PCB Site Cleanup Approvals

Lean Transference Package

EPA530-F-17-002

May 2017

- 1 Frame Note**  
What Happened, What Carries PCBs, Proposed Lane
- 2 EPA Alignment Call**  
Confirm endpoints + verification approach
- 3 Complete Package (FAST Tool 4)**  
Waste routing + QC + figures + schedule
- 4 Written Approval Before Remediation (61(c))**  
Obtain pre-approval under (c). Prevent pivots.

# THE CLOCKS THAT CONTROL THE SCHEDULE

Put tasks, times and owners on the calendar

## One-page schedule tracker (assign owners, set dates)

CLOCK	TIME	TRIGGER	OWNER	DATE
PRE-CLEANUP NOTICE	30d	761.61(a) Notification (30 days) EPA response window: 30 days	PM	___/___/___
COMPLETION NOTICE	30d	After shipments complete 761.61(b)	Consultant	___/___/___
STORAGE LIMIT	1y	Waste determination and date of removal for disposal	Waste lead	___/___/___
SPILL START	24h	Discovery of fresh release	Site lead	___/___/___

# THREE SCENARIOS, SAME MOVES

Different stories. Same playbook.

## Renovation Surprise

Suspect caulk/paint  
Occupied or soon occupied  
Schedule already locked

## Monday Vandalism

Oil release found after weekend  
Pathways matter (drains)  
“ Is this a spill clock?”

## Long - vacant Legacy

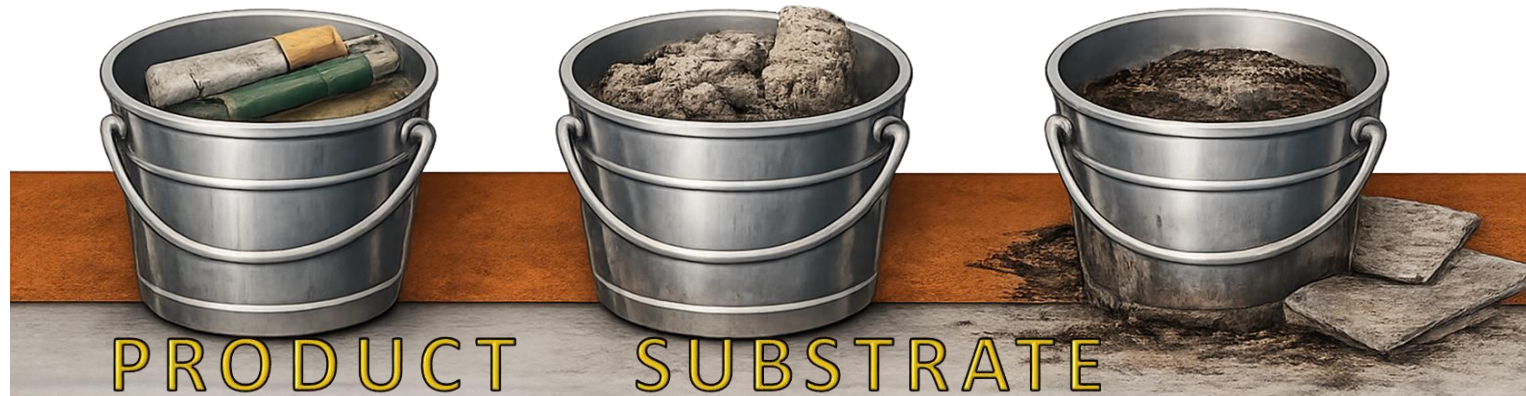
Ballasts + stains + debris  
Multiple materials in play  
Easy to mix streams

***Goal: recognize the pattern and repeat the moves.***

# WASTE STREAM SEPARATION

Common Error-Prone Part of TSCA Compliance

**DO NOT MIX AT  
GENERATION**



**LIQUID**  
PCB-Containing  
Products | Caulk | Paint  
PCB  
Items/Equipment:

PCB-Impacted Media  
Concrete | Soil  
Sediment | Debris

Free PCB Liquids  
Oil | Water

# CLOSE OUT THAT SURVIVES TURN OVER

*If the building changes hands, the closeout still stands*

- One verification table per area
- Tie photos, locations, and shipments
- Send notices on time
- Simple owner O&M when controls remain

Verification Table (Example)

AREA	SAMPLES	RESULT	LINKS
Area A	n=__	Pass	Photos Log Manifest
Area B	n=__	Pass	Photos Log Manifest
Area C	n=__	Pass	Photos Log Manifest
Area D	n=__	Pass	Photos Log Manifest

*Deliverables:  
Clean table + Linked evidence + Simple O&M*

# FIVE MOVES YOU CAN USE TOMORROW

Stabilize & Bucket • Lane • Waste Separation • Clocks • Record

## Stabilize + Bucket

1

Secure area

Stop spread

Bucket the wastes

## Choose route

2

761.61(a)

761.61(b)

761.61(c)

## Separate waste

3

No mixing wastes

Preserve disposal options

## Calendar deadlines

4

Pre-cleanup notice

Completion notice

Storage limit

Spill start

## Defensible record

5

Photos + locations

Waste tags

Decisions

*Result: protected occupants, protected owners, protected schedule.*

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

## History

- 1941 U.S. Army Quartermaster Depot (WWII)
- Chemical Resistant Clothing Manufacturing
- Drycleaner Plant Onsite
- Lithographic Chemicals and Paints and Dyes
- Timeline for Operation 1940s-1990s

## Building

- 178,000 SF
- 2 Stories + Basement
- Vacancy 2002 to ~2018











## Case Study 1: Former Hardesty Federal Complex

Legacy Residues Triggered by Vandalism







**WESTINGHOUSE**  
5-1759039  
HIGH P.T. BALLAST FOR TWO 40 WATT  
RAPID START LAMPS IN SERIES  
110 V 60 CY 0.85 AMP  
17 NORMAL WATTS LOSS  
WESTINGHOUSE ELECTRIC CORPORATION  
MADE IN U.S.A.

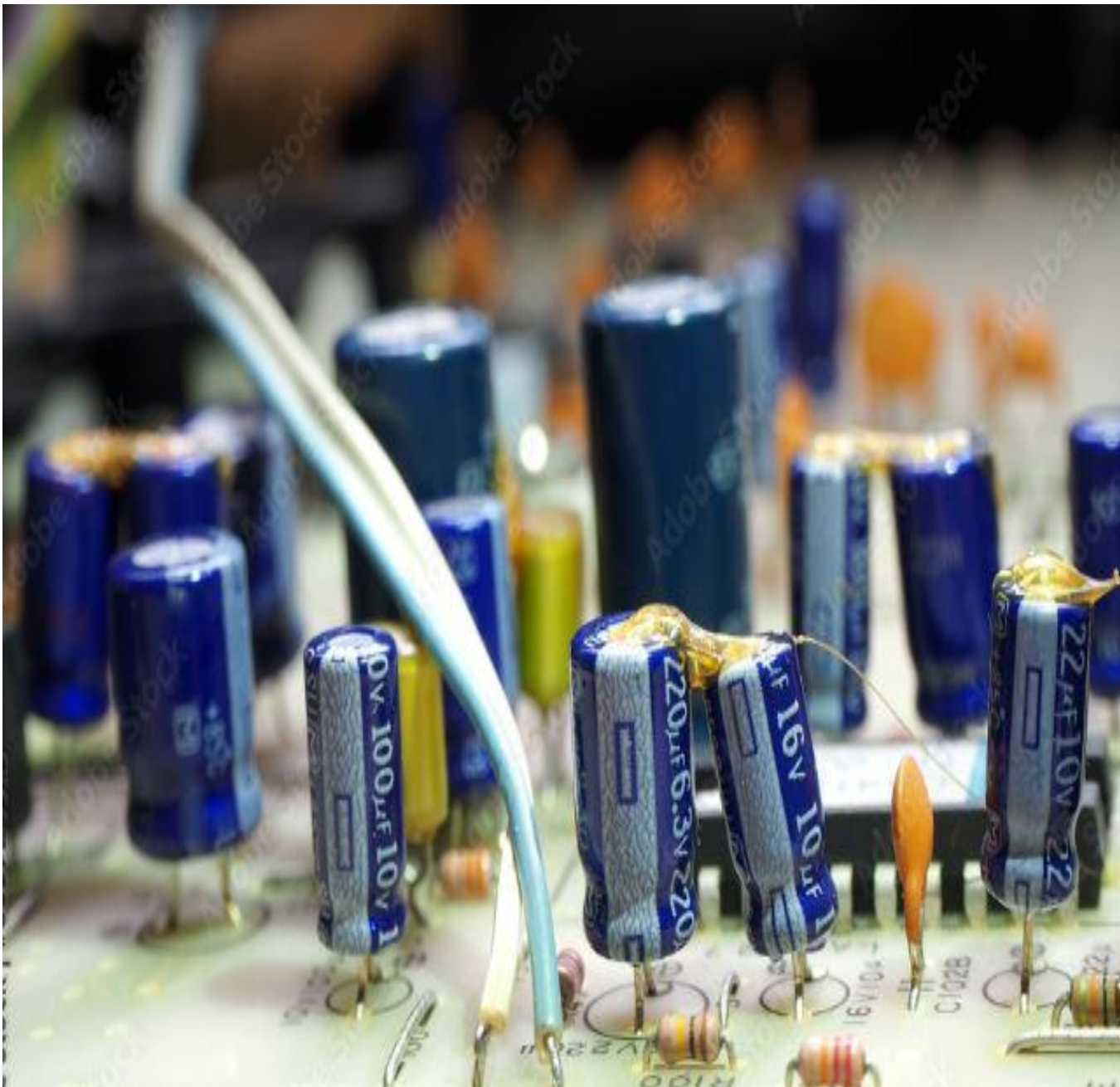


**WESTINGHOUSE**  
**U M I V E R S A L**  
**THERM-O-MATIC-2**  
**RAPID START BALLAST**  
FOR TWO F40W T12/U.S. LAMPS  
CLASS P  
120 Volts  
60 Hertz  
UNIVERSAL MFG. CORP.  
MADE IN U.S.A.



**UNIVERSAL**  
**THERM-O-MATIC**  
RAPID START BALLAST  
FOR TWO F40W T12/RS LAMPS  
HIGH POWER FACTOR  
CLASS P  
120 volts  
60 hertz  
UNIVERSAL MFG. CORP.  
MADE IN U.S.A.





## PCB-Containing Components in a Fluorescent Light Ballast

**Capacitor** - Small metal can inside ballast casing that stores the electrical charge.



**Potting Material (Tar/Asphalt/Resin)**  
**Black, sticky material that surrounds internal parts.**

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model



**Time to Pump the Breaks – Or At Least Notify- Right?**

**But Who? Owner, Building Representative, City?**

**Always Come with " The Why" and "The Significance"**

# EPA'S FAST TOOLBOX

Fewer review cycles | Less rework

## PCB FACILITY APPROVAL STREAMLINING TOOLBOX

A Framework for Streamlining PCB Site Cleanup Approvals

Lean Transference Package

EPA530-F-17-002

May 2017

**Emergency RFP Solicited and Awarded**

**Engage FAST TOOLBOX**

**Risk-Based Pathway for PCB Remediation  
Waste**

### 1 **Frame Note**

What Happened, What Carries PCBs, Proposed Lane

### 2 **EPA Alignment Call**

Confirm endpoints + verification approach

### 3 **Complete Package (FAST Tool 4)**







Waste routing + QC + figures + schedule

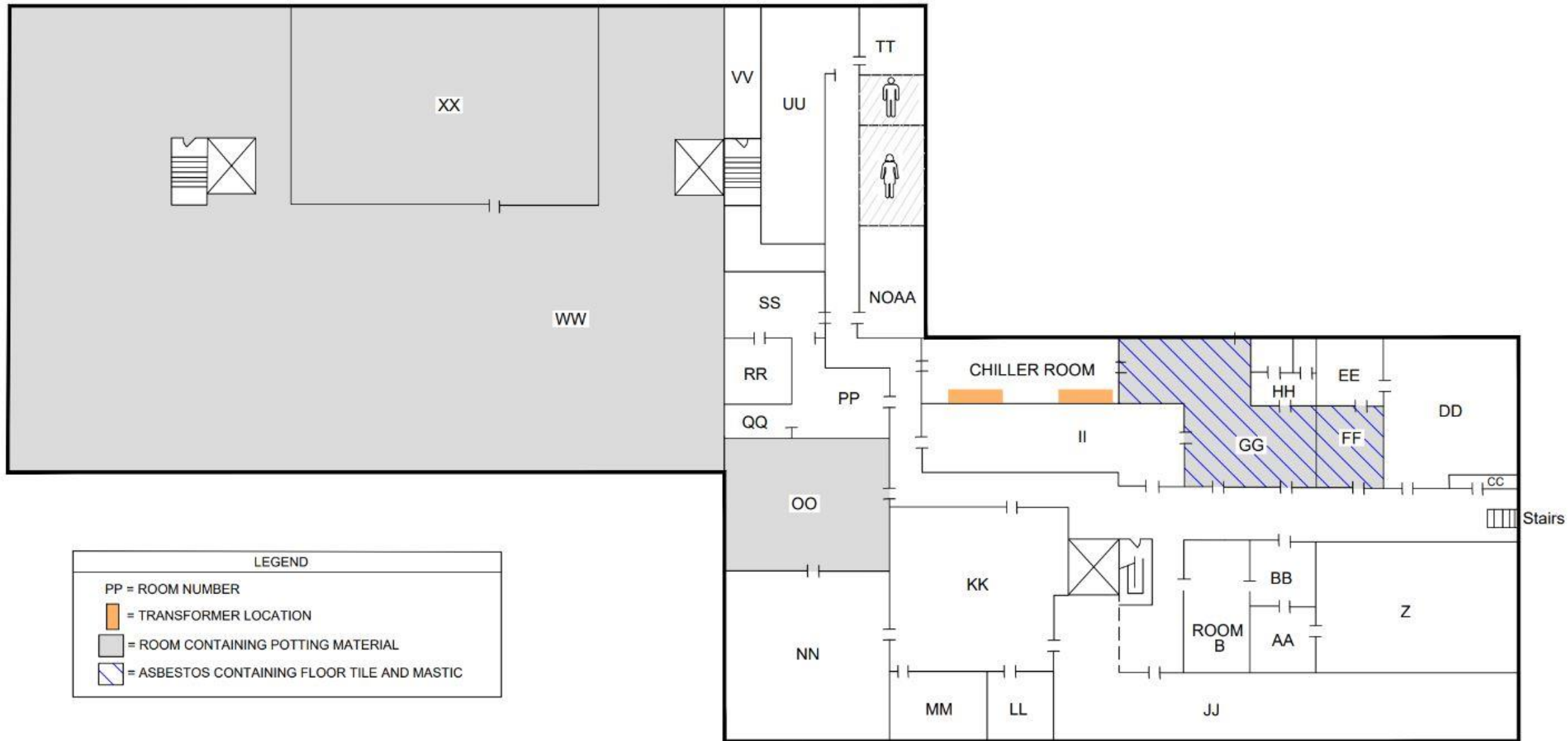
### 4 **Written Approval Before Remediation (61(c))**

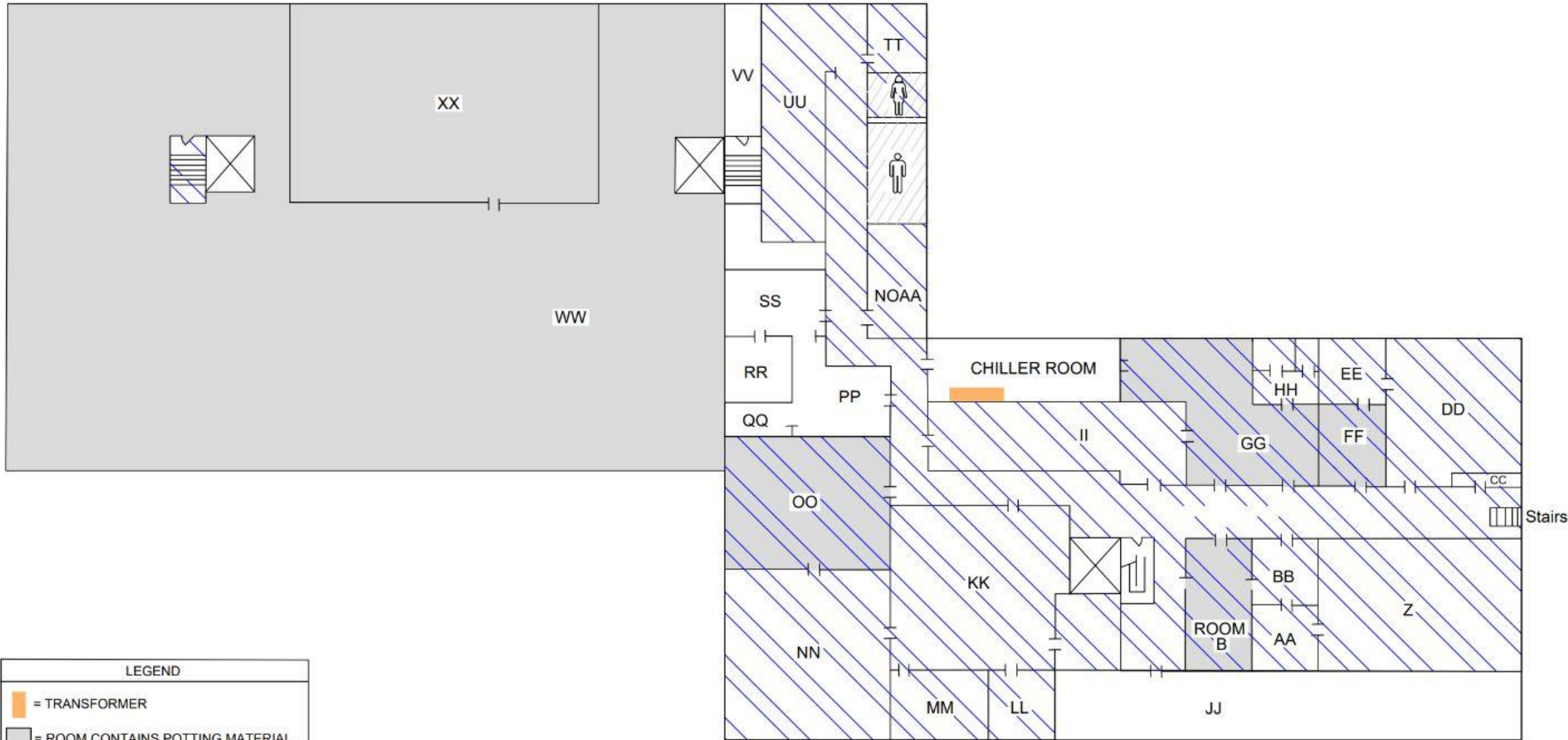
Obtain pre-approval under (c). Prevent pivots.





LEGEND	
	TRANSFORMER
	= ROOM CONTAINING POTTING MATERIAL
	= ASBESTOS CONTAINING FLOOR TILE AND MASTIC BENEATH CARPET
	= ASBESTOS CONTAINING FLOOR TILE AND MASTIC
	= ASBESTOS CONTAINING BLACK MASTIC BENEATH CARPET
	= REST ROOM





LEGEND	
	= TRANSFORMER
	= ROOM CONTAINS POTTING MATERIAL
	= ASBESTOS CONTAINING FLOOR TILE AND MASTIC
	= REST ROOM











## Risk-Based Cleanup Summary

- Removal of all piles FLB materials
- Vacuuming of carpet and floor tiles
- Abatement of ACMs
- Double-wash and Double-rinse 23 Spill Area Rooms
- Removal of Intact FLBs
- Decommissioning
- Confirmation Testing
- Waste Characterization and Disposal
  - PCB Remediation Waste
  - PCB Product Waste
  - Universal Waste

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

**Notification-** Stakeholders,  
Property Managers, Owner

**Security-** Take Security Serious

**Control Site Conditions-**  
Cross-Contamination Control

**Notify Agency-** 24 hrs

**Be Prepared to Mix and Repeat!!**



Stabilize

Bucket

Rout It

Segregate Waste

Verify + Closeout

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

**Ballasts** - Potting material, capacitors.  
Intact or Not Intact

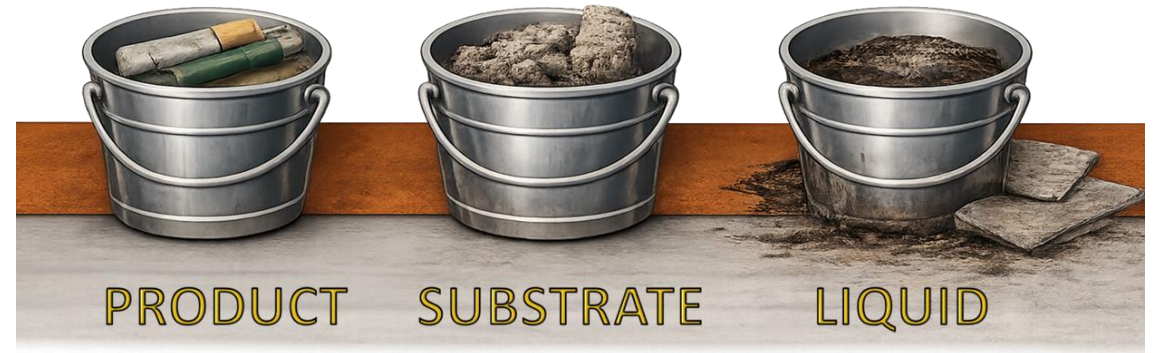
**Transformers**- Intact or Not Intact

**Inventory**- Not Complete

**Occupancy**- Current and Future Use

**Other Waste**- Hazardous Substances

**Use CFR 761.60 Disposal to Guide**



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

- **Self-Implementing Cleanup & Disposal 761.61(a)**

*Highly prescriptive, limited media  
Notification and Standards Apply*

- **Performance-Based Disposal 761.61(b)**

*(b)(1): Limited situational/media applicability  
(b)(2): Used for disposal only situations*

- **Risk-Based Disposal 761.61(c)**

*Broad media applicability; EPA approval required*



Stabilize

Bucket

Route It

Segregate Waste

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# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

PCB Product Waste

PCB Remediation Waste

Universal Waste

Special Waste

Don't Forget The Timelines



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

# CASE STUDY 1: HARDESTY FEDERAL COMPLEX

Legacy Residues Triggered by Vandalism: Replay the Model

## *"Closeouts That Survive Turnover"*

- **Immaculate Record Keeping**

*Sampling Data, Summary Tables, OSHA Data, Waste Determinations and Approvals, Deviations and Documentation, All Manifests.....*

- **O&M Plans Appropriate for Future Use**

*Institutional or Engineering Controls, Management Frequency*

- **Clear Communication on Closure Conditions**

*Transfer Details Pertinent to The Site and Ensure the Remedy is Appropriate*

***"If The Building Changes Hands, The Closeout Still Stands"***

Stabilize

Bucket

Rout It

Segregate Waste

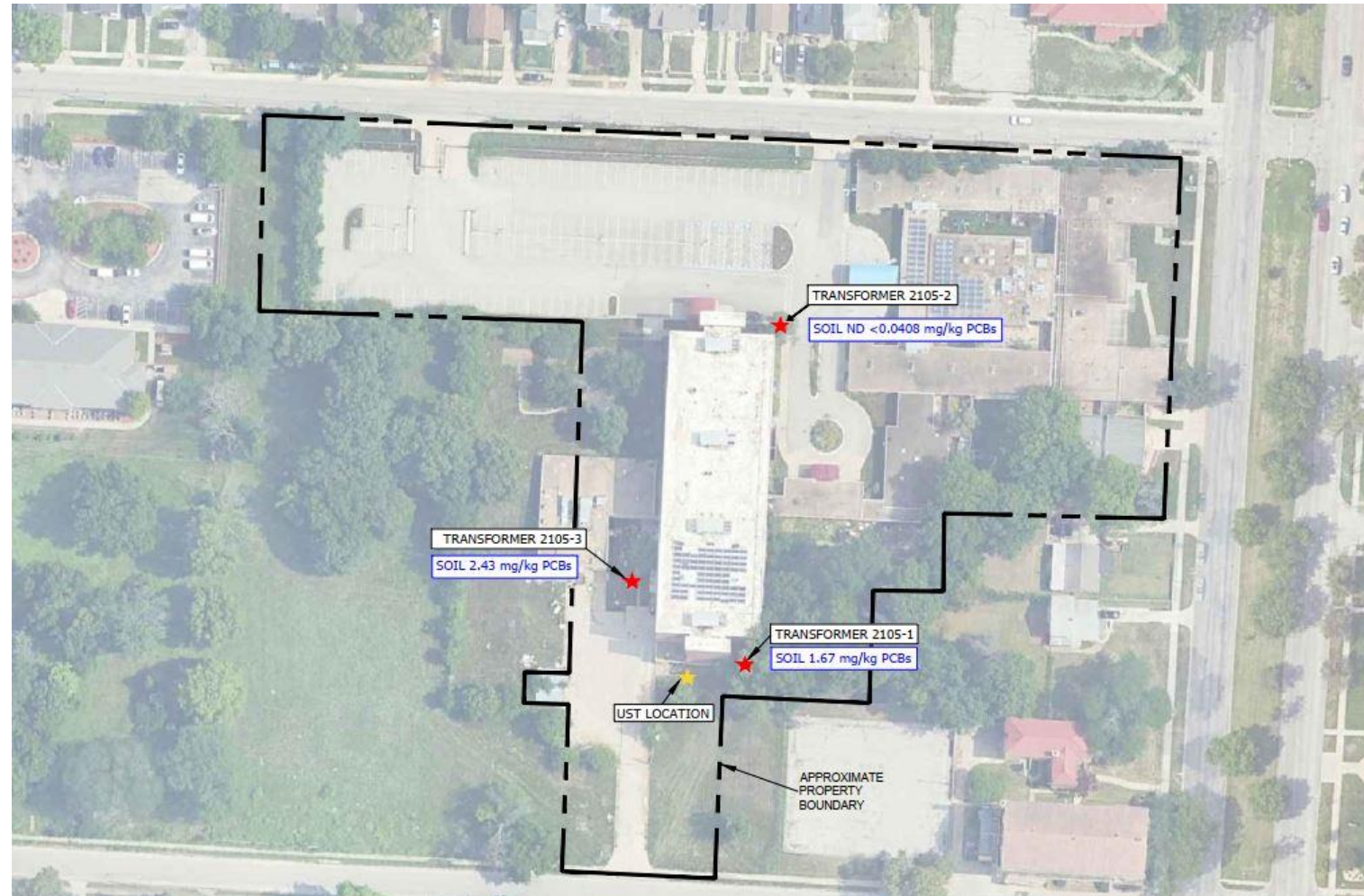
Verify + Closeout

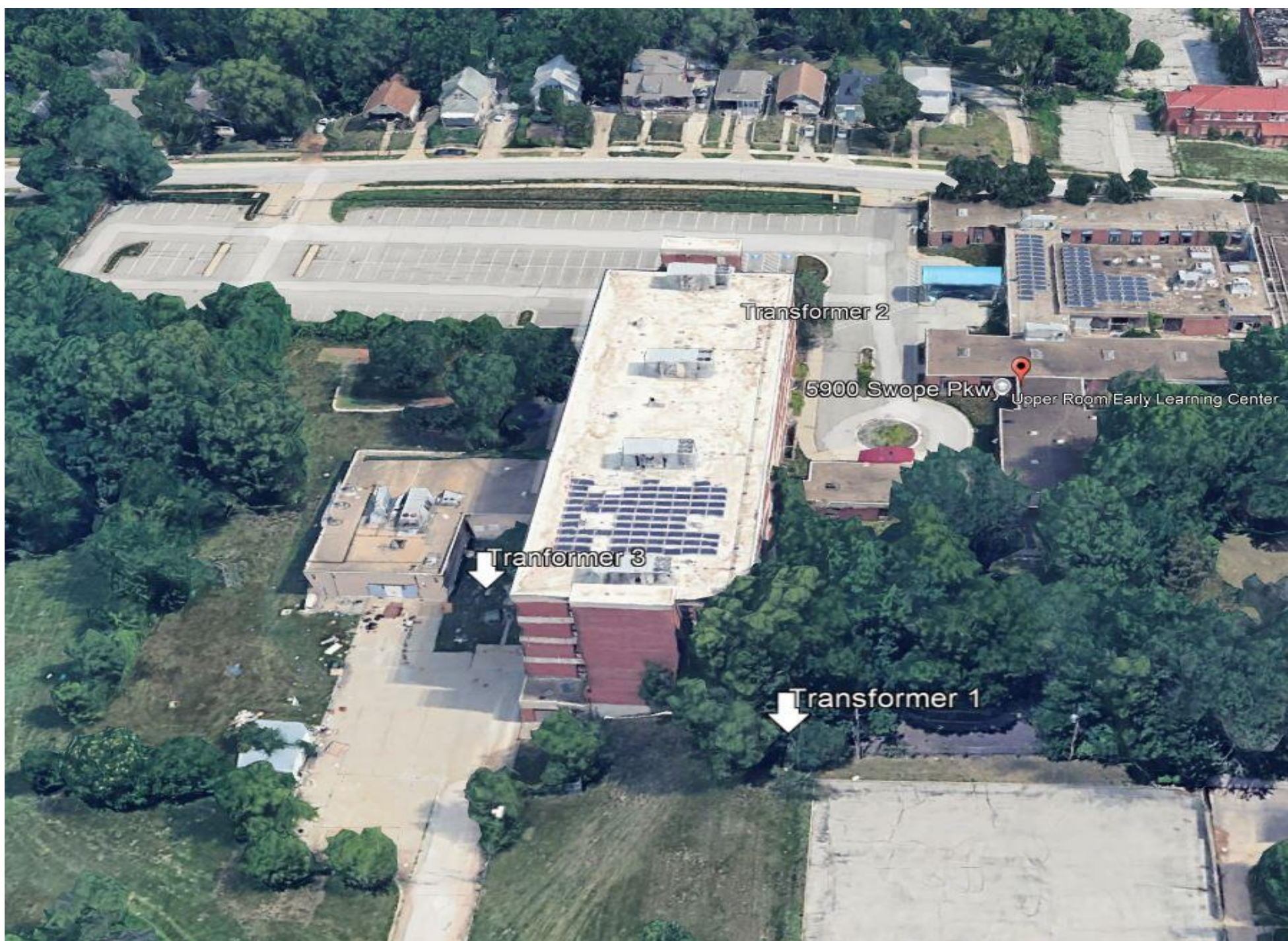
# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

## History and Site Features

- 1957-2022 Intergenerational Geriatric Center
- ~95,000 SF Building
- 3 Unlabeled Transformers On Property (#2105-1-3) One Non-Claimed Transformer
- Extensive Vandalism of Transformers
- Utility Provider Removes 3 Transformers
- Provider Notes Spill of Dielectric Fluid in #3 Transformer and Notifies City of KCMO
- February-March 24 Sampling Begins Including Soil, Wipe and Product Samples









April 2024











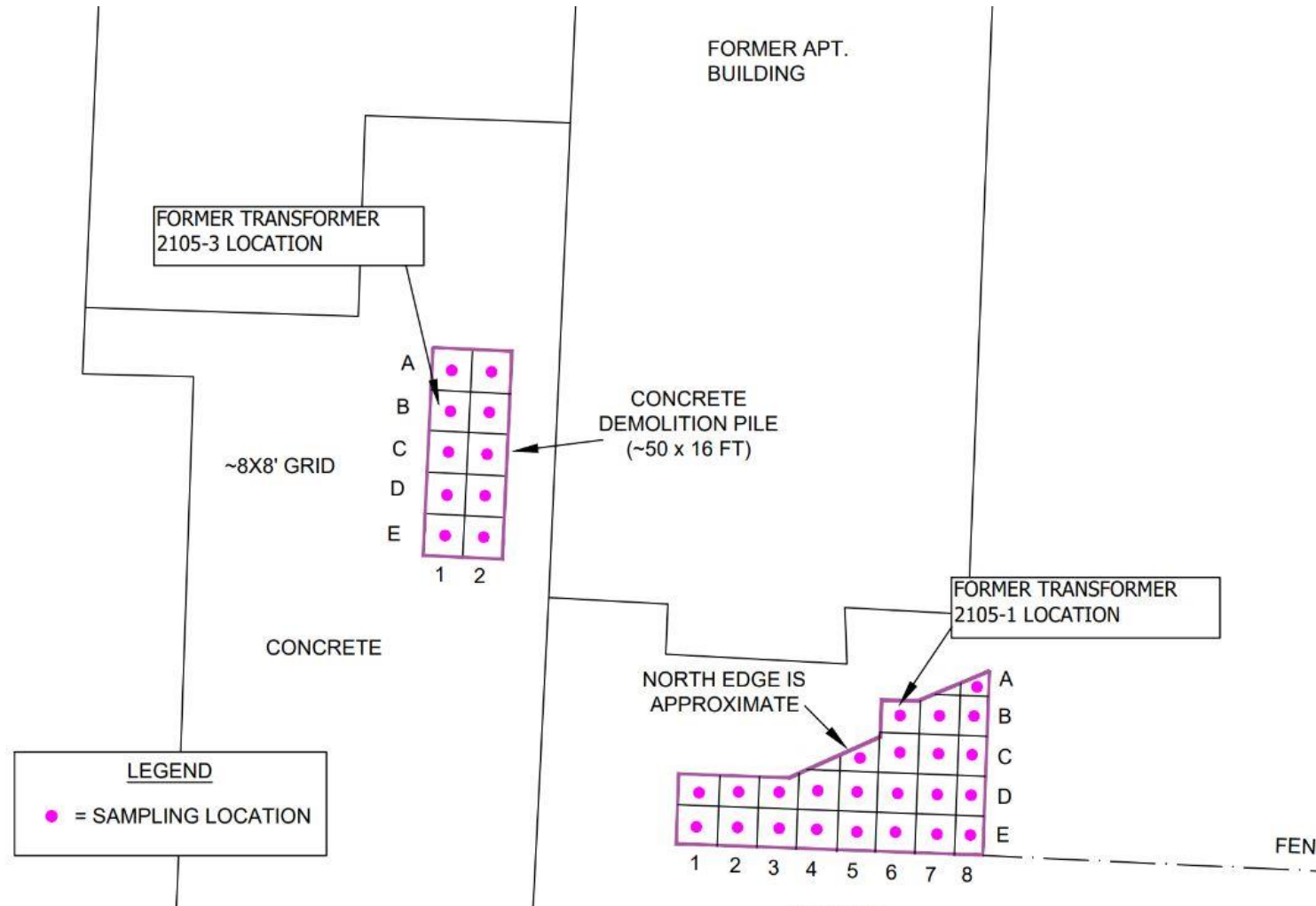






# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model





## Post Remedial Summary

- Bulk Soil, Sediment  
Concrete Sampling
- Waste Profile Sampling  
Soil, Building Media
- Sewer Sampling
- Site-Wide Cleanup  
Confirmation Report
- No Institutional or  
Engineering Controls  
Warranted

# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

**Notification-** Stakeholders,  
Property Managers, Owner

**Security-** Take Security Serious

**Control Site Conditions-** Cross-  
Contamination Control

**Notify Agency-** 24 hrs

**Be Prepared to Mix and  
Repeat!!**



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

## What Physically *Holds or Carries* the PCB Product

- Transformers- Intact or Not Intact
- Transformer Movement
- Soil Movement
- Aggregate Movement
- Liquid Accumulation and Management
- PCB Remediation Waste
- Use CFR 761.60 Disposal to Guide



Stabilize

Bucket

Route It

Segregate Waste

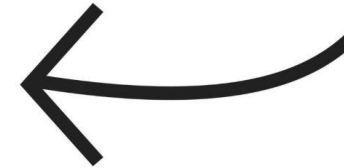
Verify + Closeout

# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

- **Self-Implementing Cleanup & Disposal 761.61(a)**

*Highly prescriptive, limited media  
Notification and Standards Apply*



- **Performance-Based Disposal**

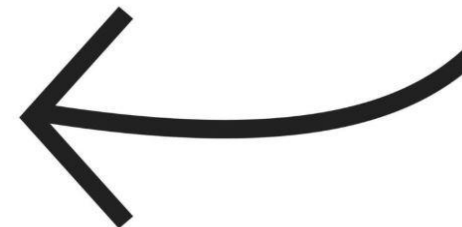
**761.61(b)**

*(b)(1): Limited situational/media applicability  
(b)(2): Used for disposal only situations*

- **Risk-Based Disposal**

**761.61(c)**

*Broad media applicability; EPA approval required*



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

- **PCB Product Waste**
- **PCB Remediation Waste**
- **Universal Waste**
- **Special Waste Negotiations**



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

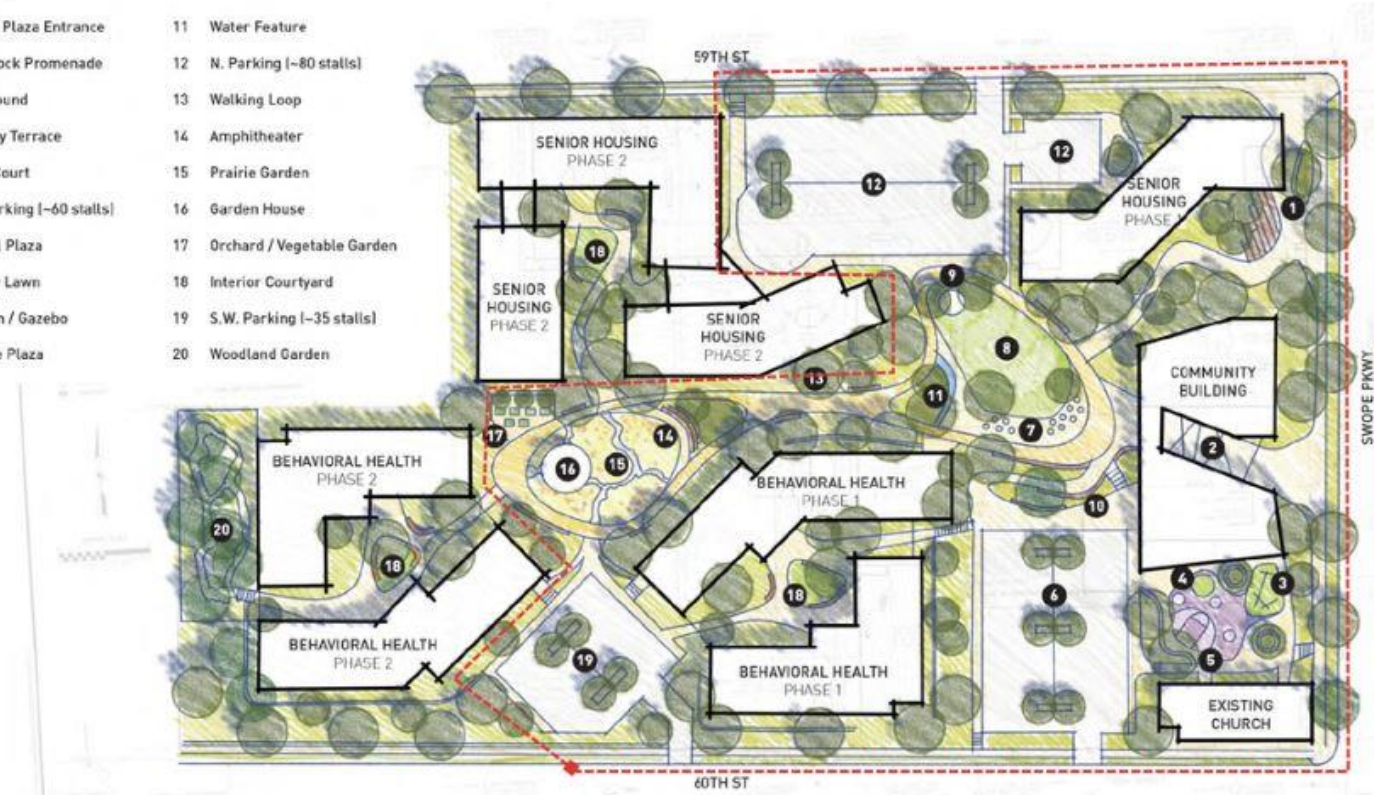
# CASE STUDY 2: SWOPE PARK

Vandalism, Utility Provider, Demolition Contractor: Replay the Model

- Grid Soils Data Meet Unrestricted Criteria
- Sewer Water and Sediment Meet Criteria
- No Controls
- Closeout Supports Redevelopment

SITE: Proposed Plan

- |    |                           |    |                            |
|----|---------------------------|----|----------------------------|
| 1  | 59th St Plaza Entrance    | 11 | Water Feature              |
| 2  | Mid-Block Promenade       | 12 | N. Parking (~80 stalls)    |
| 3  | Playground                | 13 | Walking Loop               |
| 4  | Therapy Terrace           | 14 | Amphitheater               |
| 5  | Sport Court               | 15 | Prairie Garden             |
| 6  | S.E. Parking (~60 stalls) | 16 | Garden House               |
| 7  | Central Plaza             | 17 | Orchard / Vegetable Garden |
| 8  | Activity Lawn             | 18 | Interior Courtyard         |
| 9  | Pavilion / Gazebo         | 19 | S.W. Parking (~35 stalls)  |
| 10 | Terrace Plaza             | 20 | Woodland Garden            |



Stabilize

Bucket

Route It

Segregate Waste

Verify + Closeout

# FIVE MOVES YOU CAN USE TOMORROW

Stabilize & Bucket • Lane • Waste Separation • Clocks • Record

## Stabilize + Bucket

1

Secure area

Stop spread

Bucket the  
wastes

## Choose route

2

761.61(a)

761.61(b)

761.61(c)

## Separate waste

3

No mixing  
wastes

Preserve disposal  
options

## Calendar deadlines

4

Pre-cleanup  
notice

Completion  
notice

Storage limit

Spill start

## Defensible record

5

Photos +  
locations

Waste tags

Decisions

*Result: protected occupants, protected owners, protected schedule.*

# CLOSEOUT & TAKEAWAYS

## The Anatomy of Poor Outcomes:

- Slow response and decisions
- Mixed waste streams
- Late regulatory route choice
- Little or no collaboration with EPA PCB Regional Coordinator
- No documentation trail

## The Anatomy of Success:

- Timely & decisive response
- Separate at generation
- Route decided early
- Working with EPA on key decisions
- Turnover-proof closeout

## Questions?



**Environmental  
Works, Inc.**

[www.environmentalworks.com](http://www.environmentalworks.com)

**Nick Godfrey**

[ngodfrey@environmentalworks.c](mailto:ngodfrey@environmentalworks.com)

[om](mailto:ngodfrey@environmentalworks.com)

**816.285.8432**