



**STONE ENVIRONMENTAL**

100% EMPLOYEE OWNED

# PCB Assessment & Remediation at Brownfields – Regulatory Framework and Case Study

May 18, 2022

Lee Rosberg

Northeast Waste Management Officials' Association

Revitalizing New England: Brownfields Summit 2022

# Common PCB Uses and Occurrence at Brownfields

## Uses:

- Electrical equipment
- Hydraulics and lubricants
- Plasticizers
- Pigments, dyes, inks
- Adhesives, sealants, and caulk

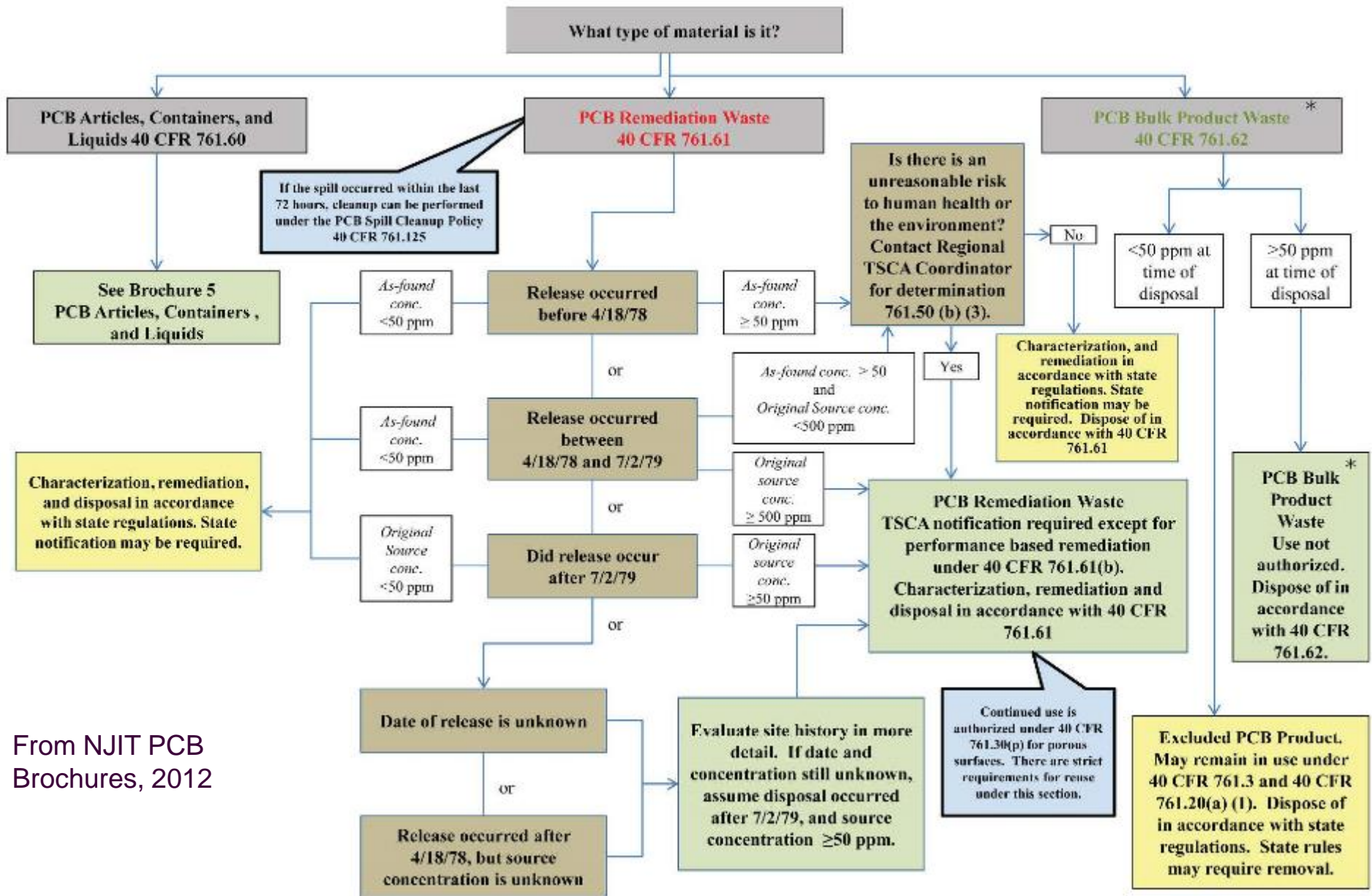
## Occurrence:

- Articles, Containers, and Liquids
- Bulk Products
- Remediation Wastes



# Federal Regulatory Framework – 40 CFR Part 761

Flow Chart for USEPA Involvement in PCB Regulations



From NJIT PCB Brochures, 2012

# PCB Cleanup & Disposal Program Proposed Changes

## Allow additional extraction and analytical methods for PCB analysis

- 3541 – Automated Soxhlet Extraction
  - 3545A – Pressurized Fluid Extraction
  - 3546 – Microwave Extraction
  - 3510C – Separatory Funnel Liquid-Liquid Extraction
  - 3520C – Continuous Liquid-Liquid Extraction
  - 3535A – Solid-Phase Extraction
  - **Remove 3550B – ultrasonic extraction**
  - 8082A – PCBs by Gas Chromatography
  - 8275A – Semivolatile Organic Compounds In Soils/Sludges and Solid Wastes Using TE/GC/MS
  - CWA Method 1668C - Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS
- 
- The diagram uses brackets to group the methods into four categories:
- Solid matrices:** 3541, 3545A, 3546
  - Aqueous matrices:** 3510C, 3520C, 3535A
  - Extraction Methods:** 3541, 3545A, 3546, 3510C, 3520C, 3535A
  - Determinative Methods:** 8082A, 8275A, CWA Method 1668C

## Performance Based Cleanup Amendments

- Record keeping and notification requirements
- RCRA Subtitle C landfills for non-liquid PCB remediation waste

## Removal of §761.62(d)(2) – PCB bulk product roadbed disposal

## Flexibility for spill cleanups

## Harmonizes PCB remediation waste disposal requirements

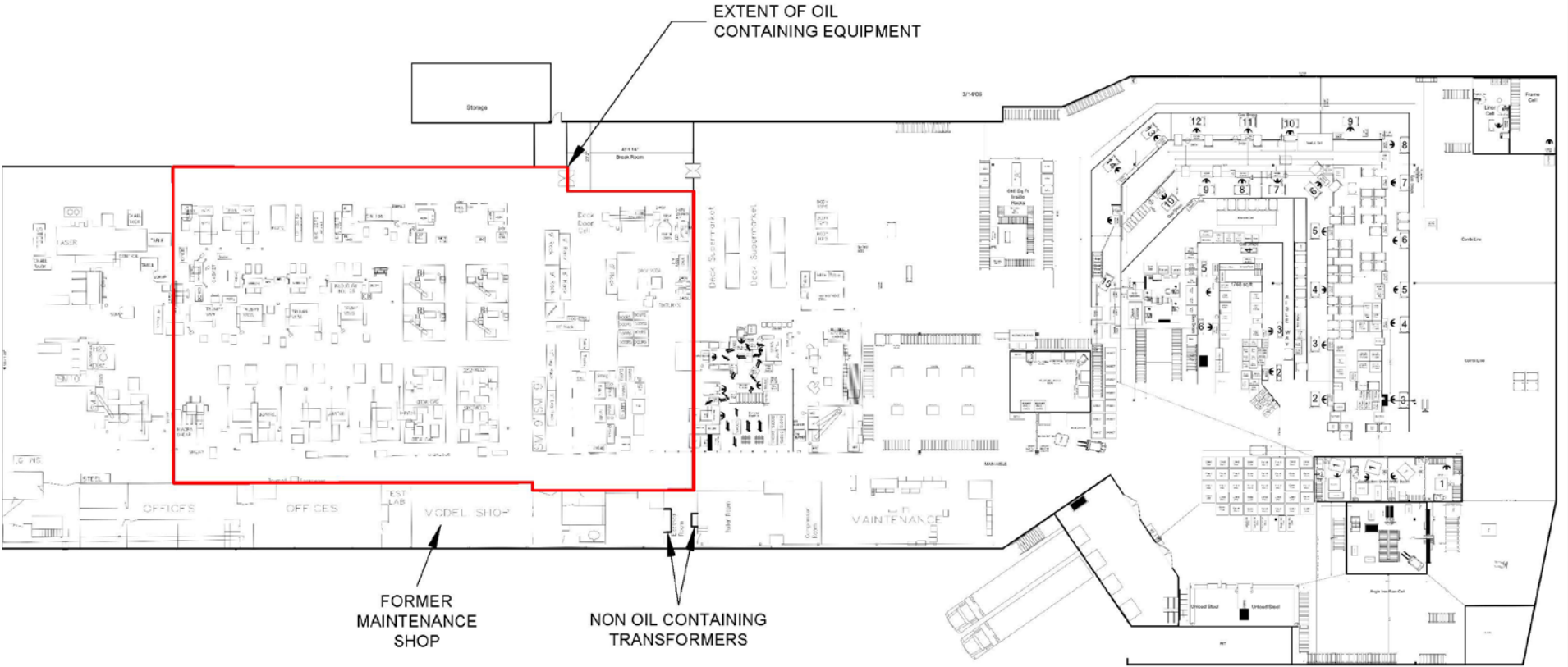
# New Vermont Regulations: Act 74

(3) “Release” means any intentional or unintentional action or omission resulting in the spilling, leaking, pumping, pouring, emitting, emptying, dumping, or disposing of hazardous materials into the surface or groundwaters, or onto the lands in the State, or into waters outside the jurisdiction of the State when damage may result to the public health, lands, waters, or natural resources within the jurisdiction of the State. “Release” also means the intentional or unintentional action or omission resulting in the spilling, leaking, emission, or disposal of polychlorinated biphenyls (PCBs) from building materials in a building or structure.

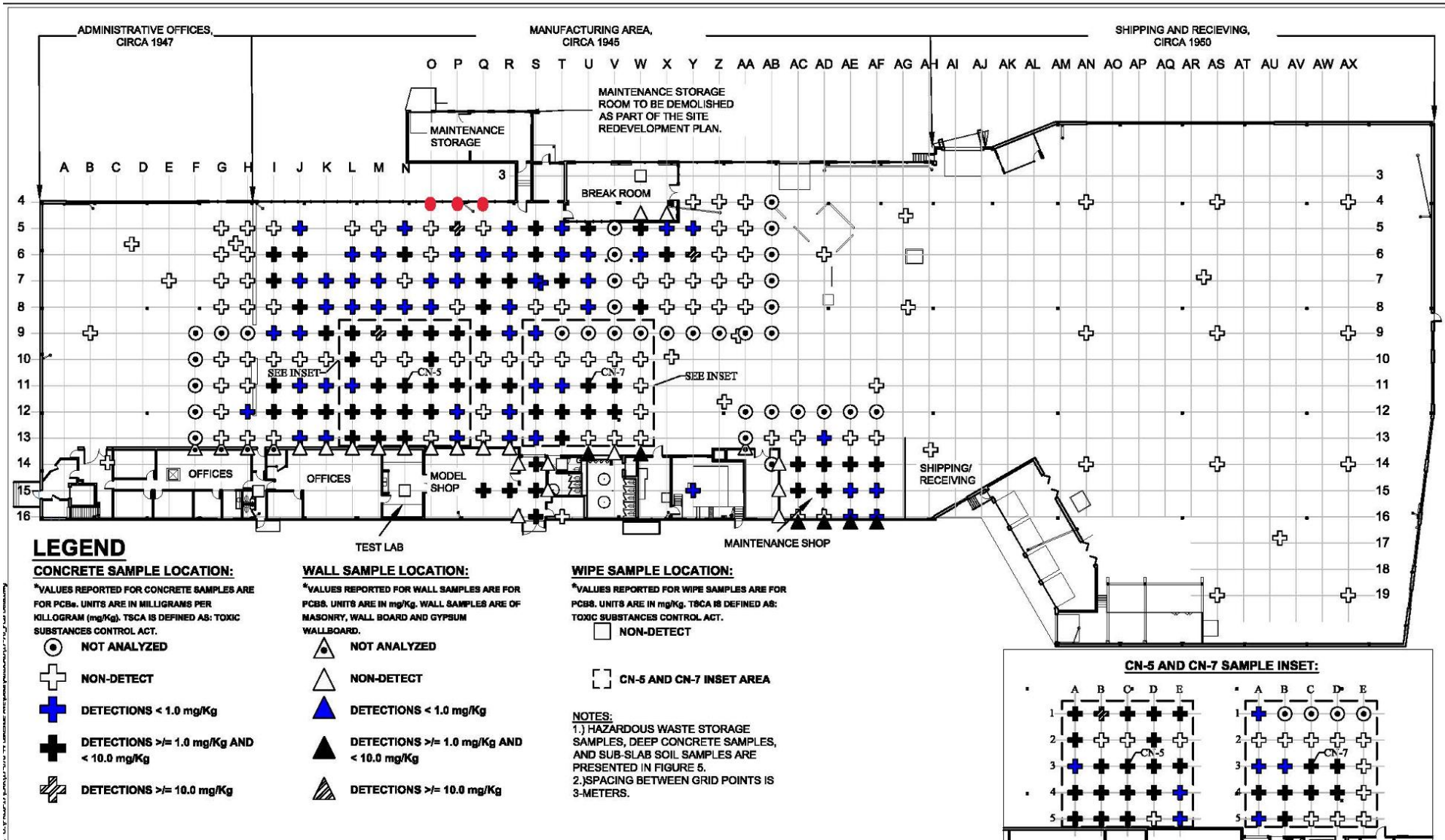
# Case Study: Former Blodgett Ovens Facility – Burlington, VT



# Self-Implementing and Risk-Based Cleanup and Disposal – Former Manufacturing Facility

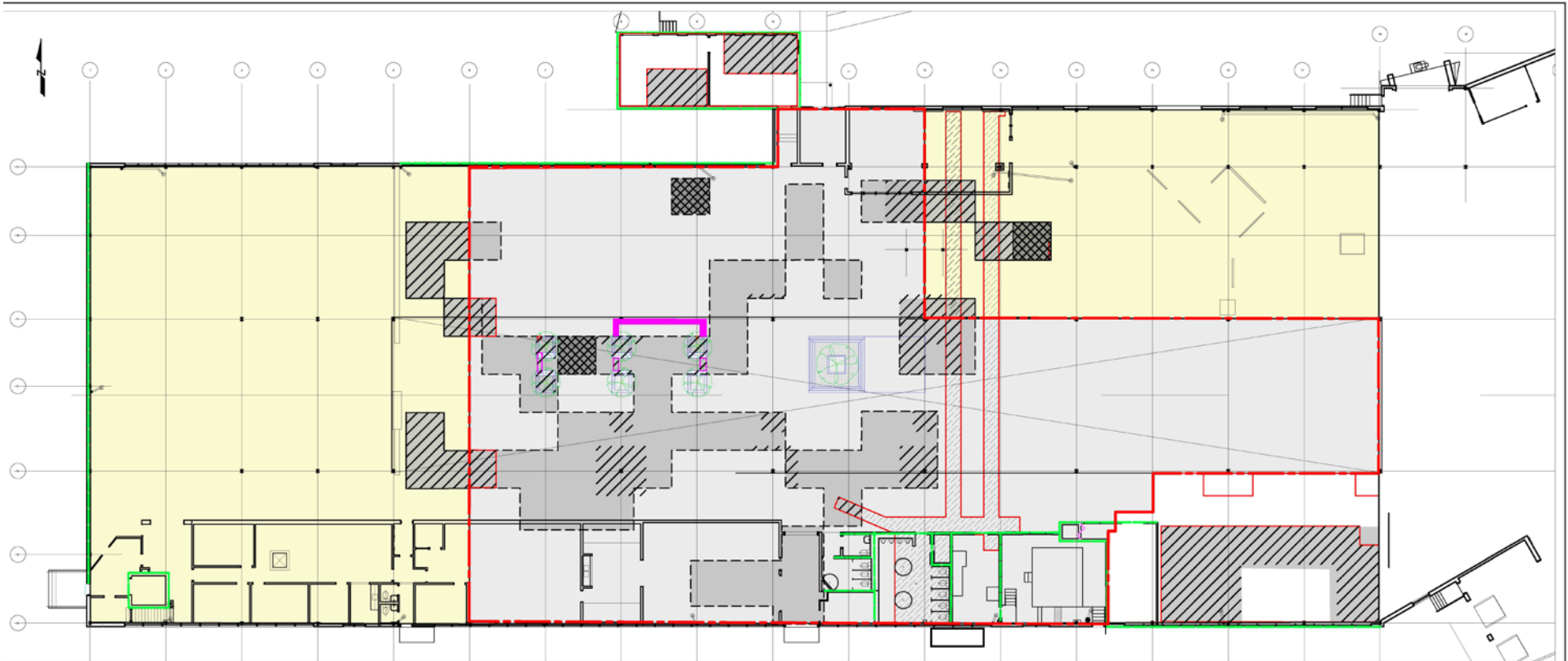


# Porous Material Characterization














# Porous Material Removal and Capping Plan

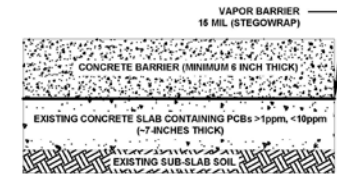


## LEGEND

-  WATER FEATURE
-  TREE PLANTERS
-  ELECTRICAL CONDUIT, RE-ROUTED AND CONCRETE NOT REMOVED
-  APPROXIMATE 21,924-SQUARE FOOT AREA THAT RECEIVED 6" CONCRETE TOPPING SLAB
-  REMOVED STRUCTURE

-  6" RAISED WOOD FLOOR SYSTEM
  - EXISTING CONCRETE SLAB
  - 10 MIL REINFORCED VAPOR BARRIER
  - 2" WOOD SLEEPERS @ 16" O.C.
  - 3/4" T&G ADVANTECH SHEATHING
-  6" CONCRETE TOPPING SLAB SYSTEM
  - EXISTING CONCRETE SLAB
  - 15 MIL STEGOWRAP
  - 4" CONCRETE SLAB, LOW SLUMP
  - W/ #4 BARS @ 12" ENL, GROUND FINISH
-  6" CONCRETE TOPPING SLAB SYSTEM OVER EXISTING CONTAMINATED CONCRETE SLAB. REFER TO BARRIER DETAIL.
-  CONCRETE REMOVED FOR UTILITY TRENCHES

-  CUT AND REMOVE EXISTING CONTAMINATED CONCRETE SLAB. PATCH SLAB WITH REINFORCED CONCRETE SLAB TO MATCH. (4'-3.21'S SF)
-  CONTAMINATED CONCRETE WITH PCB CONCENTRATIONS EQUAL TO OR GREATER THAN TEN. TO BE REMOVED

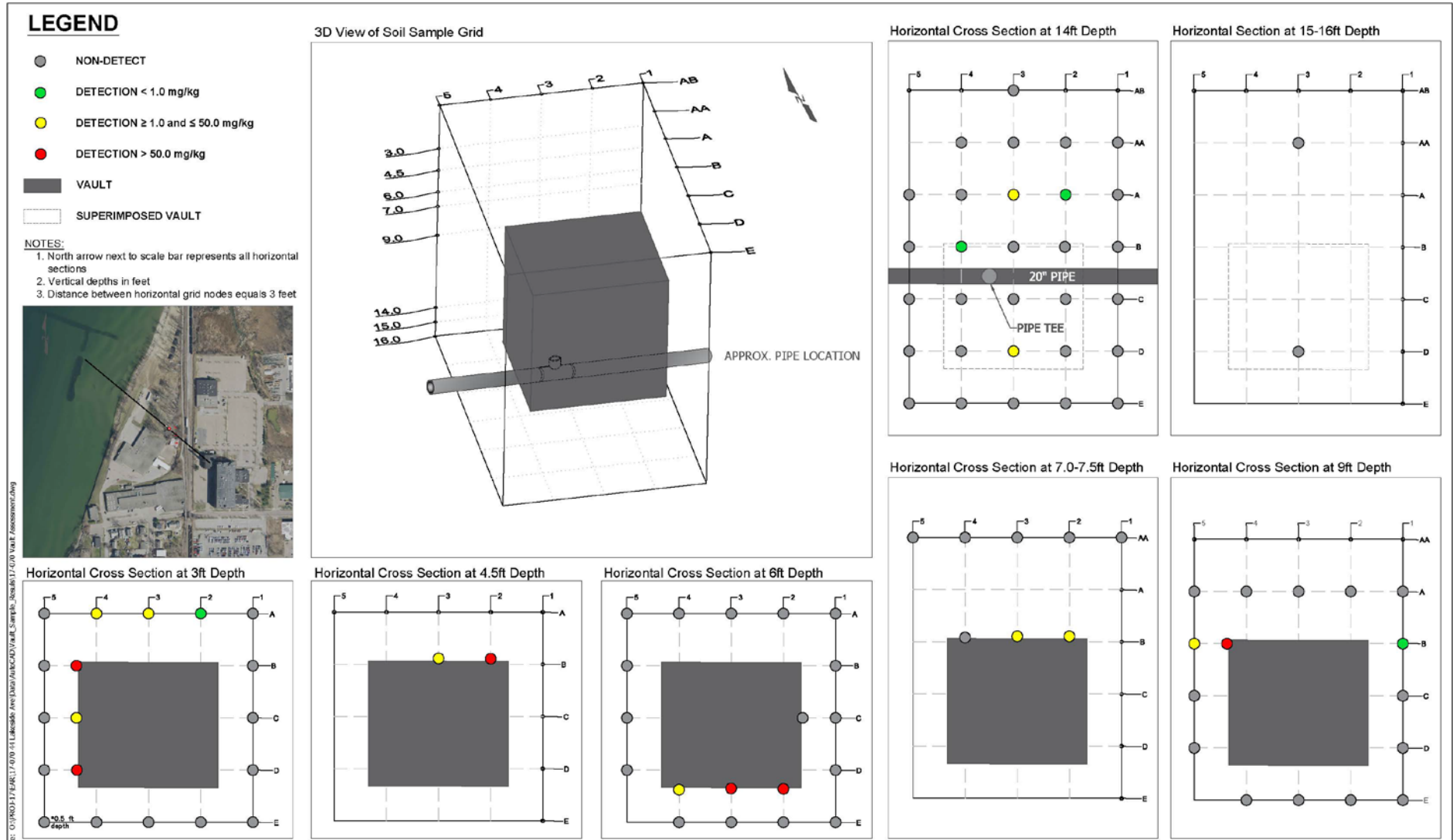


BARRIER DETAIL

# Performance-Based Cleanup & Disposal – Subsurface Structure



# Subsurface Structure Soil Characterization



# Where do scuba divers fit in?



# Current Site Status





# STONE ENVIRONMENTAL

1 0 0 % E M P L O Y E E O W N E D

## Thank you.

References:

Code of Federal Regulations Title 40: Protection of Environment Part 761 – Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions: [https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr761\\_main\\_02.tpl](https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr761_main_02.tpl)

New Jersey Institute of Technology PCB Brochures, September 18, 2012: <https://www.njit.edu/tab/pcb>  
<http://www.hulalakeside.com/>

Questions?

Contact / [Irosberg@stone-env.com](mailto:Irosberg@stone-env.com) / (802) 229-5378