



SANTA MONICA-MALIBU UNIFIED SCHOOL DISTRICT

# Review of PCB Progress and Response Procedures

**February 21, 2018**

**Malibu Facility Advisory Committee**

**Carey Upton, Chief Operations Officer**



# Overview

- **PCB Health and Safety**
  - PCBs and health protective levels
  - Legal Requirements, EPA Regulations, and
- **Progress with Window and Door Caulking**
  - Webster and Point Dume
  - Demo and Modernizations
  - Upcoming challenges
- **Special Ed/Shops Building Walls**
- **PCBs in Flooring Procedures**
  - Main Two Story Building and other buildings
  - Developing Procedures



# PCB Health and Safety

- Polychlorinated Biphenyls (PCBs) were used in fluorescent lighting, electronics, caulk, mastic and paint from the 1950s to the late 1970s.
- The Toxic Substance Control Act (TSCA) banned the commercial production of PCBs. It gives direction on the removal and disposal of PCBs.
- The Environmental Protection Agency oversees the management of PCBs in building materials.

EPA Steps to a Healthier School



# PCB Health and Safety

## PCB Health Fact Sheet

- Health Concerns related to PCB exposure include cancer, reproductive effects, and neurological effects
- Adverse health effects can only occur when there is enough exposure to cause harm
- Effects due to exposure is cumulative
- The typical exposure pathways for PCBs from building materials are inhalation and ingestion

PCB Health Fact Sheet



# PCB Health and Safety

- PCBs have been found in building materials within SMMUSD Facilities
- SMMUSD has conducted extensive air and wipe samples in all major use spaces over the past four years
- The levels of PCBs in air and wipe samples are so low that adverse health effects would not be expected

Summary of Pilot Study



# PCB Health and Safety

*“EPA continues to find that PCB remediation wastes remaining in place at MHS and JCES do not pose an unreasonable risk of injury to health or the environment. Furthermore, based on sampling data, the District has demonstrated that conditions at both schools continue to meet EPA national guidelines to protect public health from PCBs in schools.”*

*Letter from Jeff Scott to Superintendent Lyon, Nov. 2, 2015*

**SMMUSD continues to work closely with the EPA to manage PCBs.**

[EPA Letter to SMMUSD 11/2/2015](#)



# PCB Health and Safety

## Health Protective Levels:

- **Air Samples** (measured in nanograms per meters cubed)

Exposure Levels for Evaluating PCBs in School Indoor Air (ng/m <sup>3</sup> )*						
Age: 1-<2 yr	Age: 2-<3 yr	Age: 3-<6 yr	Age: 6-<12 yr Elem. school	Age: 12-15< yr Middle school	Age: 15-<19 yr High school	Age: 19+ yr adult
100	100	200	300	500	600	500

- **Wipe Samples** (measured in microns per 100 square centimeters)

EPA benchmarks for schools is below 1  $\mu\text{g}/100\text{cm}^2$

Indoor School Air Exposure Levels



# PCB Health and Safety

PCB Source or Bulk samples level for removal:

- When planning modernization or demo, EPA requires sampling the source material to determine the removal method and the waste protocols
- If source materials include PCBs over 50 ppm (measured in parts per million), the source must be encapsulated or removed
- If a source material exceeds 50 ppm, the building materials remaining after abatements must be below 1 ppm.





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# PCB Health and Safety

- The US District Court judgement requires:

*The District is hereby permanently enjoined from using any office, classroom, or other structure at Juan Cabrillo Elementary School (“JCES”) and Malibu Middle and High School (“MHS”) constructed prior to 1979 in which students, teachers, administrators, or staff are regularly present after December 31, 2019, unless all window and door systems and surrounding caulk at any such location has been replaced.*

*District Court Judgement and Permanent Injunction*



# PCB Health and Safety

Balancing:

- Environmental Regulation
- Legal Requirements
- Community Concerns and Goals



# Window and Door Caulking Progress

## General PCB Window and Door Caulking Plan

General PCB Window and Door Caulking Plan



# Window and Door Caulking Progress

**Webster Elementary School** Window, Paint, Floor and Door replacement project:

1. Initially conducted delineation sampling showed no PCBs greater than 1ppm at 1". PCB were detected but in levels less than 1ppm in Building F, room 10,
2. Followed by conducting source sampling, and found PCBs above 50 ppm on one door located on the SE corner of cafeteria building. Two similar doors were remediated and disposed properly during summer 2017.

Webster Elementary School: [Sampling](#); [Removal plan](#); [Clearance](#)



## Window and Door Caulking Progress

**Point Dume Elementary School** Window, Paint, Floor and Door replacement project:

1. Four doorframes will be removed in summer 2018. Delineation sampling showed no PCBs greater than 1ppm at 1".
2. Followed by conducting source sampling on the four doors scheduled for removal. No PCB were detected on any of the door caulking samples. No PCB removal is anticipated.



# Window and Door Caulking Progress

**Cabrillo Elementary School** Window, Paint, Floor and Door replacement project:

1. All windows and frames in Building F were removed along with 1' of adjacent building materials in 2016. All post removal clearances were non-detect.
2. All flooring was replaced in the summer of 2016.
3. Pre-1979 doors and frames will be replaced in the summer of 2019. Delineation samples will be done prior to removal.

Cabrillo Elementary School: Overview; [2016 Pilot](#); [2017 Pilot](#); 2016 [Clearance](#)



# Window and Door Caulking Progress

## Malibu High School:

1. Middle School Building (E) has been demolished and is slated for replacement. The soil beneath the building was tested and all samples were non-detect for PCBs
2. Library (A) and Administration (B/C) buildings are in the process of demolition. All PCB source materials have been abated and removed
  - We are working with the EPA to approve a work plan for the concrete slab to be disposed as <50 ppm PCB remediation waste (non-hazardous waste)



# Window and Door Caulking Progress

## Malibu High School:

3. Music Building (F), Art (I) and Special Education/Shops (G) Buildings had most of their pre-1979 windows and doors replaced in the summer of 2017, the rest will be replaced in the summer of 2018
4. Theater/Kitchen (H) pre-1979 windows and doors will be replaced beginning in the 2018, the remediation plan is still in development
5. Old Gym (J) pre-1979 windows and doors will be replaced beginning in 2018, the remediation plan is still in development





# Window and Door Caulking Progress

## Malibu High School:

6. Main Two Story Building (D) will have it's pre-1979 windows and doors replaced during the next two years
  - *The door caulking was below 50 ppm*
  - *The large window in the teacher's lounge will require extensive structural work*
  - *The caulking around the air grills came in well over 50 ppm. Additional testing is being done to determine limits and removal processes*

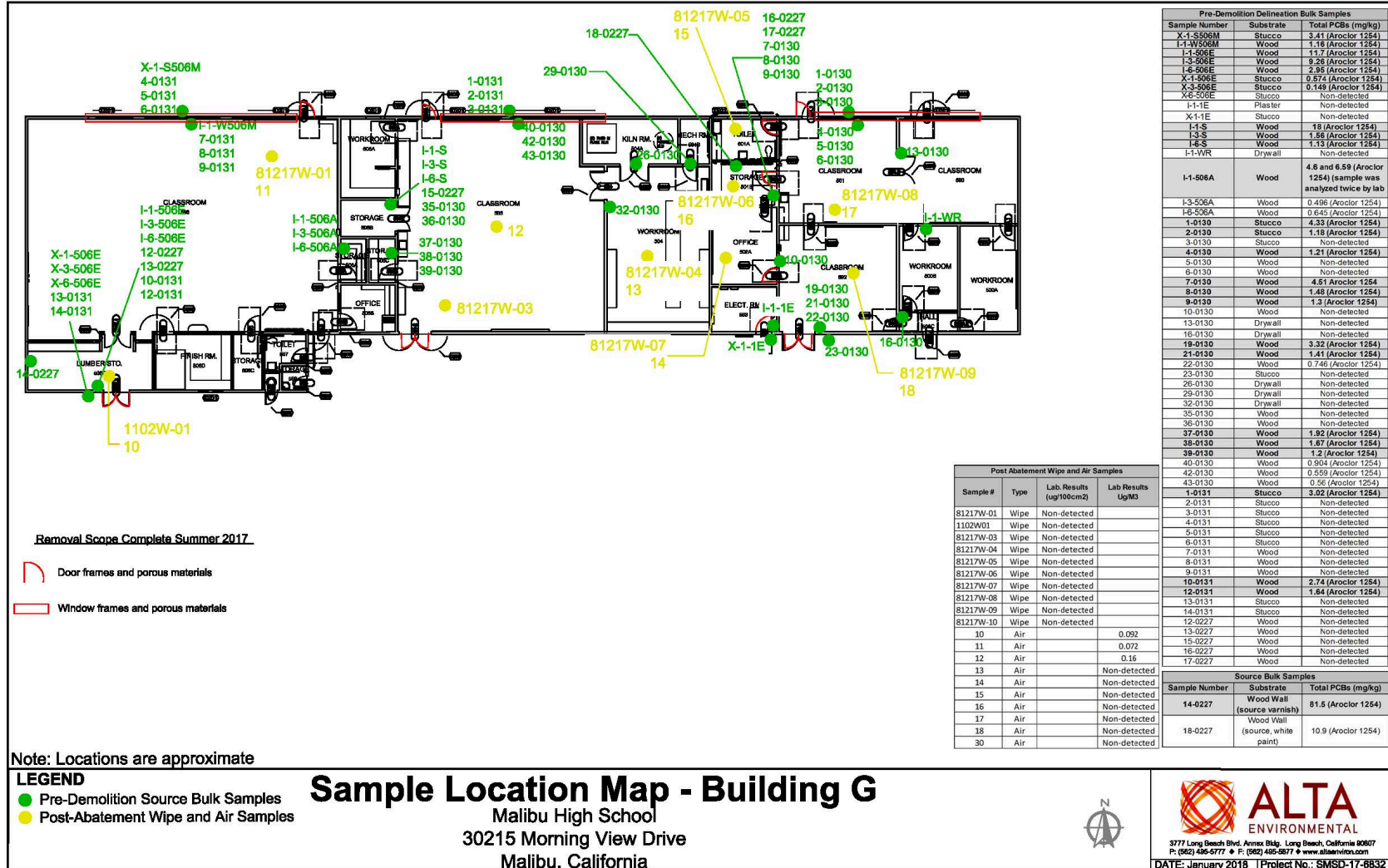


# Special Ed/Shops Building Walls

## Building G

- The exposed plywood walls were originally stained with shellac
  - The shellac in some areas appears to contain PCBs over 50 ppm, most areas the shellac is under 50 ppm.
  - Sampling and discussions between the EPA and environmental consultants have determined that there were two different shellacs with differing levels of PCB source materials, one over 50 ppm and the other under 50 ppm.

# Special Ed/Shops Building Walls



**ALTA ENVIRONMENTAL**  
 3777 Long Beach Blvd, Annex Bldg, Long Beach, California 90807  
 P: (562) 496-5777 ♦ F: (562) 495-9877 ♦ www.altainviron.com  
 DATE: January 2018 | Project No.: SMSD-17-8832



# Special Ed/Shops Building Walls

## Building G

- In the six small rooms where the original source material was over 50 ppm, we are planning to replace the plywood.
- In the other areas where the original source material is under 50 ppm, we plan to encapsulate the exposed plywood, both unpainted and painted. (This is health protective based on reducing direct dermal contact. It is not being required by the EPA.)
- Where there already exists a barrier, such as drywall or tiling, we will not treat these areas.



# PCBs in Flooring Materials Plan

## Building D

- Based on the sampling of tiles and mastic in Buildings A & B/C, we sampled the flooring building D for PCBs.
  - This was due to planned removal/replacement.
  - We found source materials and residual building materials with PCBs
    - *Black mastic on original 9' tile was as high as 5,360 ppm*
    - *“Newer” tile ranged between 30-200 ppm, with one hit at 488 ppm adjacent to the 9' tile*
  - All floor wipe and air samples taken in these areas have been well below health protective levels



## PCBs in Flooring Materials Plan

### Building F and I

- Based on preliminary sample of tiles and mastic in the Music and Art Buildings, there are source materials with PCBs up to 200 ppm.

### Building G

- Samples of black mastic under the wood floor in the ceramics room showed PCBs up to 200 ppm.

### Building J & H

- Samples are being taken in the Old Gym and Theater/Kitchen buildings



## PCBs in Flooring Materials Plan

We are working with the EPA, Ramboll and Alta Environmental to develop a plan manage the PCBs in flooring.

Discussions will result in a

### Flooring Materials Plan

that meets EPA regulations and is health protective.





# PCBs in Flooring Materials Plan

When planning removal or replacement of flooring in a building that was built before 1980:

## Step 1 - Survey

- A. The flooring will be surveyed to determine if the flooring was installed before 1979 or if the flooring might have been installed over residual mastic of older flooring
  - B. If the survey indicates the potential for PCB impacted flooring:
    - 1. Representative areas will be sampled to determine if the flooring materials contain PCBs over 50 ppm for disposal purposes
- OR*
- 2. The flooring materials will be assumed to contain PCBs over 50 ppm for disposal purposes





# PCBs in Flooring Materials Plan

## Step 2 - Removal

- C. If all of the flooring samples are below 1 ppm, we will proceed with planned removal.
- D. If flooring samples are between 1 ppm and 50 ppm, we will proceed with planned removal following appropriate PCB abatement protocols.
- E. If the flooring samples were over 50 ppm or the floor was assumed to contain PCBs over 50 ppm for disposal purposes, an PCB abatement plan will be developed to remove the flooring materials under appropriate PCB abatement protocols and disposed of as PCB Bulk Product Waste.



# PCBs in Flooring Materials Plan

## Step 3 – Concrete Slab

F. If the concrete slab is to be removed and is sampled or assumed to contain over 1 ppm PCBs:

1. And the slab can be removed along with the floor tile/mastic the slab can be disposed of as PCB bulk product waste. This is optimal.

*OR*

2. And the slab can't be removed along with the floor tile/mastic, a PCB Remediation Work Plan must be submitted and approved by EPA for disposal



# PCBs in Flooring Materials Plan

## Step 3 – Concrete Slab

G. If the concrete slab beneath the flooring is not planned for removal, the slab should be assumed to contain PCBs over 1 ppm if flooring contained PCBs over 50 ppm:

1. The slab will need to be properly encapsulated and/or covered with an impermeable barrier using methods consistent with EPA approvals
3. A work plan will need to be submitted to the EPA for review and approval
4. An Operations and Maintenance (O&M) plan, i.e., visual inspections, possibly regular air and wipe sampling) will also likely be required.



*QUESTIONS???*

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