



PCB REMOVAL/REMEDICATION PROCEDURES

John Adams Middle School
Building J (Music)
2425 16th Street
Santa Monica, California 90405

Prepared for:

Santa Monica-Malibu Unified School District
Facilities Improvements Projects
2828 4th Street
Santa Monica, California 90405

Project No.: SMSD-18-7612

Date: May 11, 2018 (Draft)

Alta Environmental

3777 Long Beach Boulevard Annex Building
Long Beach CA 90807 United States of America
T 562 495 5777 F 562 495 5877
Toll-free (US only) 800 777-0605 altaenviron.com

TABLE OF CONTENTS

SECTION	PAGE
1 INTRODUCTION	1
2 BACKGROUND	1
3 PCB REMOVAL/REMEDICATION PROCEDURES	2
3.1 Scope of Work	2
3.2 Waste Characterization	2
3.3 Engineering Controls	3
3.4 Air Monitoring	3
3.5 Worker Protection	4
3.6 Worker Decontamination Systems	4
3.7 Equipment Decontamination	5
3.8 Door and Vent Caulking and Adjacent Porous Materials Removal	5
4 POST-REMEDICATION/CONTAINMENT AREA CLEARANCE REQUIREMENTS	5
4.1 Confirmation final visual inspection	6
4.2 Nonporous Building Materials	6
4.3 Wipe Sampling	6
5 POST-REMEDICATION CONFIRMATORY AIR AND WIPE SAMPLING PRIOR TO RE-OCCUPANCY	6
5.1 Air Sampling	6
5.2 Wipe Sampling	7
6 CONTINGENCY PLAN	7
7 QUALITY CONTROL	8
8 WASTE MANAGEMENT AND DISPOSAL	8
9 RECORDKEEPING AND DOCUMENTATION	9
10 CERTIFICATION	9

1 INTRODUCTION

The Santa Monica-Malibu Unified School District (District) will undertake project to remove and replace door frames and windows from Building J (Music) at John Adams Middle School located at 2425 16th Street, Santa Monica, California 90405. Caulking associated with the double doors were found to contain regulated concentrations of polychlorinated biphenyl (PCBs).

The procedures included in this Plan shall be completed by a remediation contractor (Remediation Contractor) qualified to perform PCB removal/remediation work using Hazardous Waste Operations and Emergency Response (HAZWOPER) trained workers. Further, it should be noted that asbestos containing materials (ACM) and lead based paints (LBP) have also been identified within the limits of the PCB related work. Requirements for ACM and LBP remediation work are not included in this Plan. The remediation contractor should consult with the District to obtain the ACM and LBP abatement work plan.

The PCB removal work may be completed concurrently and in conjunction the ACM and LBP removal work where necessary and if feasible and cost effective. All PCB related work shall be completed using proper worker protection including air purifying respirators, disposable clothing, hand, foot, eye and head protection as required.

If a specified minimum procedure described in this document cannot be utilized, a request shall be made in writing to Districts authorized representative providing details of the issues encountered and recommended alternatives.

The Remediation Contractor will be required to comply with all applicable regulatory requirements including but not limited to worker training, personal protection equipment and waste disposal. The selected Remediation Contractor will be required to provide a written work plan specifically addressing conditions specific to the Site including compliance with this Plan.

By submitting a bid, the Remediation Contractor warrants its intent to conduct said work properly using qualified personnel.

The Remediation Contractor shall furnish all labor, materials, services, insurance specifically covering the handling and transportation of PCBs, and equipment which is specified, shown or reasonably implied for the removal, transport, and disposal of PCBs identified in the Table 1 Section 2.1 below.

2 BACKGROUND

The District recently completed source bulk sampling and delineation sampling and laboratory analysis in Building J (PCB Delineation and Source Bulk Sampling Report, Alta, #SMSD-18-7612).

The intent of this document is to be used in conjunction with the PCB Delineation and Source Sampling report, and the DSA approved drawings to complete the project.

3 PCB REMOVAL/REMEDATION PROCEDURES

3.1 Scope of Work

Based on the source sample and delineation sample results, the PCB scope of work included in this Plan includes the removal of door caulking and surrounding porous materials in Building J as listed in Table 1 below:

Table 1 Summary of PCB Scope of Work

Building	Component/Description	Scope of Impact	Current Classification
J	Double doors with metal casing/door caulking	Full removal of door caulking and 3 inches of surrounding interior wall drywall/wood and exterior stucco.	PCB Bulk Product Waste

⁽¹⁾ According to Environmental Protection Agency (EPA), Memorandum, “PCB Bulk Product Waste Reinterpretation” dated October 24, 2012, building materials “Coated or serviced” with PCB bulk product waste (e.g., caulk, paint, mastic, sealants) at the time of designation for disposal to be manage as a PCB bulk product waste. The reinterpretation document allows for disposal of both PCB Bulk Product Waste and PCB Remediation Waste together as a single waste stream (PCB Bulk Product Waste) (<https://www.epa.gov/pcbs/polychlorinated-biphenyl-pcb-guidance-reinterpretation>).

3.2 Waste Characterization

Waste generated during this project should be sorted and classified in the following categories as outlined in 40 CFR 761.3. Refer to Table 2 below.

Table 2-PCB Waste Categories

Waste Category	Materials
PCB Bulk Product Waste	Door caulking and adjacent porous materials at a minimum three inches (3”) away
PCB Remediation Waste	Personal protection equipment and polyethylene sheeting

3.3 Engineering Controls

The abatement contractor will be required to build a containment area at each location where removal/remediation work is completed in a manner to minimize airborne dust from migrating outside the abatement area. The containment area(s) will be maintained under constant negative air pressure by installing localized fan equipment equipped with a high efficiency particulate air filters (HEPA). The filtered exhaust from the fans will be routed outside the containment area and vented outside of the building. A minimum pressure differential of 0.02 inches water column shall be maintained at all times during the work and documented using a recording manometer.

The containment should include the following:

1. All polyethylene sheeting, spray-on strippable coatings and structural materials used shall be UL-certified as fire retardant or non-combustible.
2. A three-stage worker decontamination facility shall be provided to the containment work area.
3. Warning signs shall be posted at all entrances to the containment.
4. A sufficient quantity of HEPA vacuums and/or differential pressure air filtration devices equipped with HEPA filtration shall be used to during the removal/remediation work activities.

To calculate total air flow requirement:

$$\frac{\text{Total ft}^3/\text{min} = \text{Vol. of work area (in ft}^3\text{)}}{15 \text{ min}}$$

To calculate the number of units needed for the abatement:

$$\frac{\text{Number of units needed} = \text{[total ft}^3/\text{min]}}{\text{[capacity of unit in ft}^3/\text{min]}}$$

Additionally, all powered tools should be equipped with appropriate tool guards and dust/debris collection point of captures HEPA filtration systems.

3.4 Air Monitoring

To verify the effectiveness of dust minimization and engineering controls, air monitoring for respirable airborne particulates will be conducted using data-logging, real-time monitors. The Remediation Contractor is required to document compliance with California Division of Occupational Safety and Health (Cal-OSHA) permissible exposure limits (PELs).

A total airborne particulate action limit for the areas outside of the exclusion zone has been established for the PCB remediation work to be conducted at the Site with consideration of the specific receptors, PCB concentrations, and work activities. The action limit applies only to air monitoring at the perimeter of the work zone; an action has not been set for the active work zones (exclusion zones) as engineering controls will be used within these zones.

An action limit of 0.1 milligrams per cubic meter (mg/m³) above background will be maintained during site work. Air monitoring at a location representative of background air conducted (i.e. a location upwind of the work area) will be conducted at the same frequency as the monitoring to obtain data representative of real-time background conditions. The action limit will be used to determine when additional engineering controls and/or work stoppages will be necessary.

Should the action level be exceeded during remediation, work procedures will be evaluated for recommendations for possible additional engineering controls or modified work practices to control dust generations. Any recommended changes to work practices will be documented.

Air monitoring stations will be established at the work area perimeter in upwind and downwind locations, and within, the designated work area, if feasible. Air monitoring will be conducted at all times during demolition activities. Alta will review monitoring data a minimum of once per hour during the work. The logged data will be continuously reviewed daily so that changes to the work practices can be recommended based on observable trends in airborne dust concentrations. Logged data will be downloaded on a regular basis and archived.

If monitoring indicates that particulate matter concentrations are not maintained below the action level, remediation activities shall cease until work practices can be evaluated and adjusted.

Air monitoring equipment will be calibrated per manufacturer's specifications.

3.5 Worker Protection

The Remediation Contractor shall select the most appropriate respirators for tasks being performed. At a minimum, the workers should wear an air purifying respirator equipped with High Efficiently Particulate Air (HEPA) P100 filter. Disposable Tyvek suits (non-porous full-body), and appropriate hand (chemical resistant), foot, eye and hear protection should be worn at all times. Based on the Remediation Contractor's air sampling data PPE should be evaluated.

3.6 Worker Decontamination Systems

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit PCBs impacted work areas.

Worker decontamination enclosure systems constructed at the Project site shall utilize six-mil, fire-retardant polyethylene sheeting, or other approved materials for privacy.

Personnel Decontamination Units shall not be located inside the work area(s) unless specifically authorized by the Project Environmental Consultant.

Alternate methods of providing Decontamination facilities may be submitted to the Project Environmental Consultant for approval. Do not proceed with any such method(s) without the written authorization.

The worker decontamination enclosure system shall consist of at least a cleansing station in accordance with the requirements of 8 CCR 1527, equipped with adequate water, towels and cleansing agents to accommodate the entire crew and visitors.

3.7 Equipment Decontamination

Equipment used for the removal/remediation of PCB Bulk Product Waste materials included in this work plan must be properly decontaminated by wet-wiping and HEPA vacuuming techniques.

Prior to removing equipment from the impacted work area, the HEPA filters should be removed and disposed of in accordance all applicable regulations at an approved licensed to accept PCB waste facility. The filter compartment should be thoroughly wet-wiped and HEPA vacuums.

3.8 Door and Adjacent Porous Materials Removal

The removal/remediation scope of work included in this section includes the removal and off-site disposal of materials identified in Table 1, Section 3.1 of this report. The work should be completed as follows:

- Pre-clean all surfaces within the proposed work area by HEPA vacuuming and wet-wiping.
- Establish a containment work area including negative pressure enclosure as described in Section 3.3 above.
- At locations where caulking will be removed, polyethylene sheeting will be placed on the ground surface and removal will be conducted using hand tools to achieve removal to the maximum extent practicable while minimizing dust or other airborne particulates generated from the removal of caulking, glazing, or adjacent materials. No mechanical grinding or saw cutting performed directly in contact with the caulking or glazing will be allowed.
- Surface preparation for removal will include surficial wetting of visibly dry and/or deterioration material to minimized dust generation.
- During the project, equipment and tools used in the process will be decontaminated through spraying and wet wiping. At the completion of the project, any non-disposable equipment and tools that handled PCBs material will be decontaminated following the procedures described in 40 CFR 761.79.
- Door caulking, and adjacent porous materials waste generated during this project will be immediately collected in waste bags or similar container and stored in a labeled PCB Bulk Product Waste container at the end of each work shift. Waste shall be disposed of according to all applicable regulatory requirements.
- After used, disposable PPE and polyethylene sheering generated during this project will be collected and stored in a labeled PCB Remediation Waste container. Waste shall be disposed of according to all applicable regulatory requirements.
- All removed waste materials will be stored on site in lined, marked, and covered roll-off containers (or similar containers) or Department of Transportation (DOT) 55-gallon drums prior to off-site.

4 POST-REMEDIATION/CONTAINMENT AREA CLEARANCE REQUIREMENTS

Each work area must meet the following requirements prior to removal of the containment.

1. Contractor has completed full removal of identified PCB Bulk Product Waste itemized in, Section 3.1, Table 1;
2. The containment work area has passed a through visual inspection completed as required in section 4.1 below; and

3. Wipe sample laboratory analysis have satisfactory passed the recommended clearance levels state in Sections 4.3 below.

4.1 Confirmation final visual inspection

Upon completion of the PCB related work in each containment work area, the Project Environmental Consultant and the Remediation Contractor will conduct a post-remediation visual inspection. If any material designated for removal, including loose dust and debris, is observed, the Contractor will be required to re-clean the area until the area is deemed to be acceptably clean.

4.2 Nonporous Building Materials

For nonporous surfaces that are decontaminated, surface wipe samples will be collected in accordance with Section 4.3 of this document from location on the material formerly in contact with the PCBs. If results indicate that results is less than one microgram per 100 square centimeters ($1\mu\text{g}/100\text{ cm}^2$), then no additional clean-up is required. If a verification sample is reported with PCB concentrations above 1 ppm, this surface will be cleaned again.

4.3 Wipe Sampling

Wipe samples will be collected on gauze pads (or similar sampling media) using the Standard Wipe Test described in 40 CFR 761.123 and will be analysed using USEPA Method 8082 for Aroclors.

In containment work area, at least two PCB wipe samples will be collected, one from a window sill (if feasible) and one from an interior smooth floor.

A comparison threshold of 1 microgram per 100 square centimeters ($1\mu\text{g}/100\text{ cm}^2$) must be met for wipe samples collected at the Site. Clearance will be issued when all samples results have met these levels.

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

The contractor is advised that wipe sample analysis may be delayed as long as 48 hours. The containment areas must be maintained until the samples are received from the laboratory.

5 POST-REMEDATION CONFIRMATORY AIR AND WIPE SAMPLING PRIOR TO RE-OCCUPANCY

Following the completion of the project, after the containment has been removed, and the areas have been restored for normal occupancy, additional air and wipe samples will be collected from the renovated rooms.

5.1 Air Sampling

Air samples will be collected prior to re-occupancy.

The air samples will be collected without a pre-filter and will be analysed for Aroclors using USEPA Method TO-10A. Each air sample will be collected on a polyurethane foam cartridge with a constant flow rate of approximately 5 liters per minute.

In each room, one air sample will be collected over 24 hours with the doors and windows closed, the HVAC system turned off, and the lights turned on.

Air sample results shall meet the criteria as outlined in the USEPA's document Exposure Levels for Evaluating Polychlorinated Biphenyls (PCBs) in Indoor School Air . <https://www.epa.gov/pcbs/exposure-levels-evaluating-polychlorinated-biphenyls-pcbs-indoor-school-air>. The criteria are as follows:

Age in Years Range	1 to <2	2 to <3	3 to <6	6 to <12	12 to <15	15to <19	19 +
PCBs ng/m ³	100	100	200	300	500	600	500

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

The contractor is advised that air sample analysis may be delayed as long as two weeks. The containment areas must be maintained until the samples are received from the laboratory.

5.2 Wipe Sampling

Wipe samples will be collected prior to re-occupancy.

Wipe samples will be collected on gauze pads (or similar sampling media) using the Standard Wipe Test described in 40 CFR 761.123 and will be analysed using USEPA Method 8082 for Aroclors.

Also, in each room, at least two PCB wipe samples will be collected, one from a window sill and one from an interior floor tile.

A comparison threshold of 1 microgram per 100 square centimeters (1 μ g/100 cm²) must be met for wipe samples collected at the Site.

If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

6 CONTINGENCY PLAN

If unanticipated higher PCB concentrations or wider distribution of PCB impacted materials are found, or other obstacles force changes in the clean-up approach, remediation contingencies will be developed in and included in the remediation Plan.

7 QUALITY CONTROL

A quality control (QC) assessment of all samples will be completed. This assessment will include a complete check of field documentation including sample collection and preservation methods, a completeness check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedure and results including surrogate recoveries, MS/MSD results, blank results, and laboratory control standard results, and an evaluation of sample holding times, and field duplicate results, as necessary.

8 WASTE MANAGEMENT AND DISPOSAL

Waste management and disposal includes on-site handling, accumulation, containerizing, and labelling, and off-site transporting (including providing and preparing manifest, bills of lading, etc.) and disposing of PCB waste streams. The PCB waste streams will be transported by a licensed waste hauler to a permitted hazardous waste disposal facility.

Secured, lined, and covered waste containers (roll-off containers or equivalent) or 55-gallon DOT-approved containers will be staged for the collection of PCB wastes generated during the work activities in accordance with applicable requirements in 40 CFR 761.65 and 40 CFR 761, Subpart K. All containers will be properly labelled and marked in accordance with 40 CFR 761.40 and 22 CCR 66262.34.

The Remediation Contractor will be required to develop and submit for review a Waste Sampling and Management Plan to the Owner and the Project Environmental Consultant for review and approval prior to commencement of the project. At a minimum, this plan shall include: name, location and contact information for the Disposal Facility, Certification by the Disposal Facility that the PCB waste will be accepted, approved hazardous waste transporter information, a plan for disposal of PCB waste streams, a description of the sampling procedures and sample frequencies, etc. for acceptance by the Disposal Facility.

Upon completion of waste profiling and acceptance at the respective facilities, PCB waste will be loaded in to transportation vehicles for shipment to the disposal facility.

PCB Bulk Product Waste caulking and adjacent porous materials impacted by, or assumed to be impacted by the PCB source will be segregated for disposal and transported under a manifest to a disposal facility in accordance with 40 CFR 761.62 and 22 CCR 66262.23.

PCB Remediation Waste (PPE, polyethylene sheeting) will be segregated for disposal and transported under a hazardous waste manifest to a hazardous waste landfill in accordance with 40 CFR 761.61 and 22 CCR 66262.23.

Water generated during decontamination activities (or as part of dust suppression) that is collected on polyethylene sheeting will be containerized onsite, sampled for PCBs other potential constituents, and designated for off-site disposal in accordance with 40 CFR 761.79 and/or California hazardous waste regulations, as applicable. Polyethylene sheering, PPE, and non-liquid cleaning materials will be managed and disposed of offsite in accordance with 40 CFR 761.61 (a)(5)(v).

Note-Wastes generated as a result of the renovation work as described herein may also be considered a mixed hazardous waste due to regulated concentrations of asbestos and lead being present.

9 RECORDKEEPING AND DOCUMENTATION

Following completion of the work activities, applicable records and documents will be generated and maintained at one location. A post-remediation report will be prepared which will contain a detailed description of the remediation activities, post clean up samples, appropriate figures and drawings, and analytical data tables presenting results and post-cleanup samples. In addition, the report will include volumes and disposed materials, and all waste disposal records. The post-remediation report will be prepared to provide a full accounting of all activities performed and documentation necessary to support the conclusion that the remedial activities met the objective of the project.

10 CERTIFICATION

As required by 40 CFR 761.61 (a)(3)(i), a written certification is provided as an attachment to this workplan. This certification is signed by both the owner of the property where the cleanup site is located, and the party conducting the cleanup, and states 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 a location designated in the certificate, and are available for USEPA inspection.