

# Request for Participation: PCBs in Caulk Project

## *Implementation Trials Element*

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### INTRODUCTION

Even though most uses of polychlorinated biphenyls (PCBs) were discontinued 30 years ago, PCBs are still getting into urban runoff and San Francisco Bay. Because PCBs present health risks to people who consume fish caught in the Bay, Bay Area municipalities are required to reduce the PCBs in their runoff under a Total Maximum Daily Load (TMDL) cleanup plan.<sup>1</sup> A significant uncontained source of PCBs that can contribute to runoff loads is PCB-containing caulk used in buildings built between 1950 and 1978.

Until the late 1970s, PCBs were added to caulk to improve flexibility, to increase resistance to erosion, and to improve adherence to other building materials. PCBs were also commonly used in other building materials such as fluorescent light ballasts. Caulk and sealants are commonly found in municipal and commercial buildings and their exterior use makes them more likely to affect urban runoff than indoor building materials. Bay Area municipalities' discharge permit for stormwater, known as the MRP,<sup>2</sup> requires municipalities to develop a process to control runoff pollution from PCBs in caulk during building demolition or renovation.

The PCBs in Caulk Project (Project) is a collaboration among the San Francisco Estuary Partnership, the San Francisco Regional Water Quality Control Board, and BASMAA, funded by a federal stimulus grant, to assist municipalities in fulfilling their MRP requirements for managing PCBs in caulk (section C.12.b).

### REQUEST FOR PARTICIPATION

The PCBs in Caulk Project seeks help from building owners and facilities managers who have current demolition projects to refine a new regional model regulatory process being developed to control PCB contamination in urban runoff from building demolition and renovation. In fulfillment of regional stormwater permit requirements, this process would assign municipalities an active role in requiring that construction activities demonstrate control of PCB pollution from caulk and sealants.

The PCBs in Caulk Project contains two elements: the *Implementation Trials Element*, described here, and a *Sampling Element*. **We request that your organization participate in the Project's *Implementation Trials Element*.** We seek five pilot sites for field implementation trials of the Project's Model

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<sup>1</sup> The San Francisco Bay PCBs TMDL was approved by U.S. EPA on March 29, 2010 and requires 90% reductions in PCBs in urban runoff.

<sup>2</sup> Municipal Regional Stormwater NPDES Permit (Order No. R2-2009-0074) issued by the San Francisco Regional Water Quality Control Board applies to municipalities in Alameda, Contra Costa, San Mateo, and Contra Costa Counties, as well as Vallejo and Fairfield-Suisun.

Implementation Process (MIP) and Best Management Practices (BMPs), documents which support incorporating removal of PCB-containing caulk into the planning and execution stages of building demolitions and renovations.

## **DEADLINE**

**Your response is requested by March 31, 2011.** This is a planning rather than the final deadline, but time is of the essence since grant assistance is available to support implementation trial evaluations only through 2011. Please respond regarding your organization's participation to the Project Manager (see Contact Information, below). Participation is possible at a wide variety of levels of involvement; we encourage you to contact us to discuss options. Information provided below will assist you in determining how your organization can participate.

## **FREQUENTLY ASKED QUESTIONS**

### **What is the PCBs in Caulk Project?**

The PCBs in Caulk Project (Project) is designed to help Bay Area municipalities meet their stormwater permit requirements to manage PCBs in caulk. The Project will:

- Evaluate PCB levels in caulk at a minimum of ten Bay Area sites to better understand which types/ages of buildings are most likely to have caulks with PCBs and target management actions effectively. (*Sampling Element, based on completed Sampling and Analysis Plan*)
- Develop Best Management Practices (BMPs) to prevent the release of PCBs from caulks into urban runoff during renovation, maintenance and demolition of Bay Area buildings. The BMPs will include practices to identify, handle, contain, transport, and properly dispose of PCB-containing caulks. (*Completed*)
- Create a Model Implementation Process (MIP) so that cities can integrate requirements to use the BMPs in their municipal demolition and renovation permitting processes. Materials will include model policies/ordinances, checklists, and training materials. (*Completed*)
- Test and evaluate the effectiveness of the proposed BMPs at five sites in the Bay Area and document which methods work best in our region in addition to other lessons learned. (*Implementation Trials Element*)

### **What kind of sites are needed to participate in implementation trials?**

The Project seeks demolition projects scheduled for calendar year 2011 in the San Francisco Bay Area or beyond. Ideal project types are commercial, institutional, or residential high-density (greater than 100 units) structures of masonry or concrete built or renovated between 1950 and 1978 – however, sites outside of this age range are also eligible to participate. Demolition projects with asbestos or other hazardous material abatement plans are especially good candidates for implementation trials.

### **What is expected of organizations that volunteer a pilot site for an implementation trial?**

Project staff will work with participants to determine how to best carry out the implementation trials at their particular site. A full implementation trial would include selecting an applicable structure undergoing demolition, following the draft MIP, testing for PCBs in caulk, and testing the BMPs at the pilot site. It is possible, however, for participants to partially field-test the MIP and BMPs at the site without first testing for PCBs. Participants would then provide feedback to the Project staff and consultants to help refine the current draft process and tools as well as determine their effectiveness, as required by the MRP.

Municipal staff from the permitting jurisdiction would be asked to “walk through” the proposed MIP documentation and checklists with the project managers and provide evaluation comments to the Project consultants who drafted the MIP. The Project Team will also consider partial implementation trials, which test either the MIP and a subset of the BMPs, or which only conduct the MIP “walk through” for a hypothetical site.

### **Why should my organization participate in the *Implementation Trials Element*?**

- Participating in the *Implementation Trials Element* will assist municipalities to comply with stormwater permit (MRP) requirements. We anticipate that successful completion of this Element will result in all Permittees complying with MRP Provision C.12.b.ii(4).
- Participation allows your organization to help shape a new regulatory procedure for managing a common waste that may need management systems comparable to those for lead paint and asbestos. Participation in the project also helps to “reality-check” new tools and management practices as they are developed to ensure a useful end product.

### **Are funds available to assist project proponents and municipal staff participating in implementation trials?**

Grant assistance covers the costs of developing and revising the BMPs and MIP. The Project Team has not identified any sources of supplemental funds for projects that conduct implementation trials.

### **What happens if we do not choose to participate?**

Municipalities must conduct five implementation trials under the municipal stormwater permit (MRP). According to Regional Water Board staff, “Failure to complete implementation trials at five sites will result in non-compliance with the MRP.” Municipal permittees that do not participate may be subject to enforcement action from the Water Board.

## **ABOUT IMPLEMENTATION TRIALS**

### **What is the Model Implementation Process (MIP)?**

The MIP outlines procedures municipalities could use when requiring BMP implementation at projects where PCBs in caulk pose a potential threat to water quality during demolition and renovation activities including window replacement projects. It provides templates, forms, and checklists that municipal staff could incorporate, in whole or part as appropriate, into their municipal planning and permitting processes and to provide guidance to project proponents. The MIP includes a template for a PCB Runoff Prevention Plan, in which project proponents describe how they will meet EPA, DTSC, and other regulatory cleanup requirements and BMPs to be applied to prevent mobilization of PCB-contaminated materials and dust. The model PCB Runoff Prevention Plan applies to commercial, institutional, or residential high-density (greater than 100 units) structures of masonry or concrete built or renovated between 1950 and 1978, where caulk has been tested and found to be  $\geq 50$  parts per million (ppm). Municipalities will have four points of contact with project proponents related to PCB runoff prevention: initial encounter, permit issuance, project implementation/inspection, and permit closeout.

The effectiveness and usefulness of the MIP will be tested and assessed in this *Implementation Trials Element*, and results will be used to inform the development of a draft model ordinance/policy and training program (also required under the MRP). In 2014, an effectiveness evaluation will review these results in conjunction with those from other pilot projects required by the MRP, and recommend whether control measures for PCBs in caulk should be implemented in a more widespread fashion in the next permit term, as part of a plan comprising a cost-effective mix of measures to attain the PCB load reductions in the TMDL.

### **Does the MIP require municipalities to manage or regulate PCB clean-ups?**

The MIP does not ask municipalities to oversee PCB abatement or remediation of materials or lands contaminated by PCBs or to set clean-up standards. Rather, the MIP tools are meant to complement requirements of the U.S. Environmental Protection Agency (EPA) and the California Department of Toxic Substances Control (DTSC) emphasizing the need to protect water quality during abatement and remedial activities. The municipalities would continue to rely on U.S. EPA, DTSC, and, where appropriate, California Unified Program Agencies (CUPA) requirements to ensure appropriate abatement, remediation, and waste disposal.

Municipalities would inform project proponents of the EPA and DTSC requirements and confirm at various stages that the appropriate actions with the EPA and DTSC are completed where these actions are required to protect water quality.

### What do the BMPs involve?

The BMPs are implemented by either ordinary general contractors in the course of demolition/renovation work, or, more likely, by specialist abatement contractors prior to the general contractor's involvement. Implementation would be guided by the PCB Runoff Prevention Plan outlined in the MIP. If test results from an applicable structure show a concentration  $\geq 50$  parts per million (ppm) of PCBs in caulk, the MIP requires the project proponent to develop a PCB Runoff Prevention Plan. The Plan identifies BMPs that will be applied to minimize the exposure of PCB-contaminated materials to wind and water erosion and prevent runoff of PCB-contaminated materials during the demolition or renovation of the structure. The BMPs and MIP are posted on the Project web page for review (see Additional Information/Resources section, below).

### What happens if I find PCBs in my building's caulk?

If a building owner identifies the presence of PCB-containing caulk, regulatory requirements would be triggered for managing that caulk and protecting building occupants. The table below describes three potential scenarios that could occur once results of the PCB test are obtained.

| Result of PCB Test                           | Consequence  |
|--|--|
| No PCBs detected                             | <ul style="list-style-type: none"><li>• Normal remodeling/demolition process and waste disposal practices followed</li></ul>   |
| PCBs detected at <50 parts per million       | <ul style="list-style-type: none"><li>• Caulk does not need to be removed<sup>1</sup></li><li>• Normal remodeling/demolition process followed</li><li>• Characterize waste to determine whether it is considered CA hazardous waste and dispose appropriately</li></ul>  |
| PCBs detected at $\geq 50$ parts per million | <ul style="list-style-type: none"><li>• Caulk must be removed and disposed as hazardous waste</li><li>• Materials contaminated by the caulk must be characterized and removed or addressed as approved by U.S. EPA</li><li>• Characterize waste to determine whether it is considered CA hazardous waste and dispose appropriately</li></ul> |

<sup>1</sup> Other federal or state laws and regulations may require action to protect public or worker health.

If caulk containing PCBs at concentrations  $\geq 50$  parts per million is detected in the pilot structure, it would have to be removed, with U.S. EPA acting as the lead agency for oversight. Materials that have been in contact with caulk and have been contaminated with PCBs at concentrations  $\geq 50$  parts per million (e.g., concrete and mortar or adjacent soil) would also need to be removed or addressed through site-specific means approved by U.S. EPA. Waste must be characterized to determine if it is a California hazardous waste (under California Title 22) and disposed of appropriately. Building occupants may need to be temporarily relocated while the building interior is cleared of PCBs.

## **Do I have to follow the PCB abatement procedure if my site is considered a pilot through this project?**

The U.S. EPA has stated that pilot test sites for the PCBs in Caulk project would be treated like any site that triggers clean-up requirements; no special regulatory waiver has been granted. Since this could raise concerns for a potential pilot project proponent regarding additional costs or liability, the Project team will consider two modified implementation trial options: 1) A structure owner of a planned demolition or renovation could volunteer his/her site as a pilot and test out a modified version of the MIP and BMPs without determining if PCBs exist. 2) Alternatively, municipal staff could volunteer to test only the MIP, by “walking through” the MIP checklists and forms for a hypothetical site in lieu of actual project proponents. Neither of these options would involve PCB testing, and therefore would not trigger cleanup requirements. Both scenarios would still provide needed feedback to refine the MIP and BMPs and evaluate their effectiveness, all of which are required by the MRP.

## **ABOUT THE MUNICIPAL STORMWATER PERMIT AND REQUIREMENTS TO IMPLEMENT PCBs IN CAULK PROJECT**

### **What are municipalities responsible for with regards to PCBs in caulk under the MRP?**

Permittees must develop a sampling and analysis plan for PCBs in building materials (completed by the PCBs in Caulk Project). They must also sample a minimum of ten sites distributed throughout the combined Permittees’ jurisdiction areas<sup>3</sup> (the *Sampling Element*). In addition, Permittees are required to pilot test BMPs at five sites (the *Implementation Trials Element*), the results of which must be reported in March 2014. Participation in the PCBs in Caulk project can fulfill these requirements if the minimum number of participants is met.

### **How long do municipalities have to meet these MRP requirements, and how can the PCBs in Caulk Project help?**

The Municipal Regional Permit’s provision C.12.b specifies several deadlines, some of which may be addressed by the PCBs in Caulk Project:

- 2010 Annual Report: Status report on sampling and analysis completed by the BASMAA Regional Supplement for Pollutants of Concern and Monitoring, including draft Sampling and Analysis Plan.
- 2011 Annual Report: PCBs in Caulk Project technical memos completed or in progress will address the evaluation of current regulations, level of implementation, and regulatory gaps as well as the final sampling and analysis report, a list of appropriate BMPs, BMP training program, and model ordinances or policies to prevent PCB discharges from building demolition and improvement activities.

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<sup>3</sup> *Provision C.12.b Conduct Pilot Projects to Evaluate and Manage PCB-Containing Materials and Wastes during Building Demolition and Renovation (e.g., Window Replacement) Activities*

- March 15, 2014 Integrated Monitoring Report: the required submittal of the results of pilot program effectiveness may be met in part by incorporation of lessons learned during the Implementation Trials Element, for those Implementation Trials completed no later than August 2011.

## GENERAL PCB INFORMATION

### Could PCBs in caulk migrate to other building materials?

Yes, PCBs can migrate into other building materials such as concrete, brick, cinder block, and wood. If exterior caulk is in poor condition (e.g., crumbled), then PCBs may be present in the soil outside the building.

### If PCBs are found, can they be covered rather than removed?

If the caulk has PCBs at concentrations  $\geq 50$  parts per million, then the PCB-containing caulk must be removed, and any surrounding materials found to contain PCBs must also be cleaned up to a specified level. On a site-specific basis, regulators may allow contaminated building materials like brick and concrete to be sealed in place.

### If PCBs are found, will it delay a building remodeling or demolition?

If PCB cleanup was not already part of the initial planning, finding PCBs in caulking may add delays. Finding PCB-containing caulk at concentrations  $\geq 50$  parts per million would require the owner to characterize, remove, and properly dispose of all similar caulk ( $\geq 50$  parts per million), as described above. Project delays may be encountered to allow for sampling, laboratory analyses, and working through the approval processes with the regulatory agencies. The PCBs in Caulk Project team is working with regulatory agencies to streamline the approval process.

### Where can we dispose of PCB-contaminated materials, and how much will it cost?

The table below gives a rough estimate of the cost of disposing of building wastes, including the costs of transport in 2010 dollars.

| PCBs Concentration<br>PCB in Materials                           | Disposal Requirements  | Estimated<br>Costs                     |
|--|--|--|
| Soluble waste <5 ppm and non-soluble waste <50 ppm               | This is considered non-hazardous waste and may be disposed of as Class II non-hazardous building waste at a local waste management facility.   | \$100 / ton                            |
| Soluble wastes $\geq 5$ ppm and non-soluble wastes $\geq 50$ ppm | These materials must be disposed of at a federal hazardous waste facility. <sup>1</sup> The closest landfills accepting these wastes are Chemical Waste Management in Kettleman City (Kings County) and Clean Harbor's | \$150-250 / ton or higher <sup>2</sup> |

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## Buttonwillow landfill (Kern County).

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Notes: ppm = parts per million

<sup>1</sup> The California Department of Toxic Substances Control has compiled a list of commercial offsite hazardous waste facilities on its website at [http://www.envirostor.dtsc.ca.gov/public/commercial\\_offsite.asp](http://www.envirostor.dtsc.ca.gov/public/commercial_offsite.asp).

<sup>2</sup> Cost may be higher, for example, if the PCB-containing caulk is containerized and disposed of in drums. Also, disposal costs may be higher if the caulk contains significantly higher PCB concentrations or other substances regulated by the U.S. EPA.

### **Are there certification requirements for contractors who remove PCBs?**

While the U.S. EPA does not require formal training for the removal of PCB-laden caulk, training is required to handle materials contaminated by that caulk, like adjoining building materials and outdoor soil. Personnel working in the field at hazardous waste abatement projects are required to be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained per Occupational Safety and Health Administration (OSHA) Standard 1910.120.

### **Are there Federal or State funds to pay for cleanup?**

No Federal or State funds for this have been identified at this time.

## **ADDRESSING HEALTH CONCERNS**

### **Do PCBs in building materials present health risks for building occupants?**

PCBs are considered likely human carcinogens and have been demonstrated to cause a variety of adverse health effects. According to the U.S. EPA, "Because of the risks posed by PCBs, they were banned from production by Congress in 1977. However, we all continue to be exposed to PCBs, through eating food and from breathing indoor air and coming into skin contact with dirt and dust. The generally small amounts of PCBs to which we are exposed each day build up over time in our bodies. These small daily increments accumulate over years leading to a long term 'body burden' of PCBs. It is this accumulated body burden of PCBs that is important in understanding potential health effects, rather than individual higher or lower daily doses." For more information, see <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/effects.htm>.

For those concerned about exposure in buildings, U.S. EPA recommends testing indoor air in buildings that may have PCB-containing caulk and provides guidance for interpreting results and for measures to protect building occupants (see <http://www.epa.gov/pcbsincaulk/>).

### **Does the MIP provide guidance to municipalities to address health risks?**

The MIP does not ask municipalities to oversee or enforce human health protection standards. Although there may be some overlap in practices, the MIP does not specifically address or establish practices to protect human health during demolition or renovation projects (e.g. air sampling/air clearance sampling is not part of these tools).



## ADDITIONAL INFORMATION / RESOURCES

- PCBs in Caulk Project:  
<http://www.sfestuary.org/projects/detail.php?projectID=29>
  - *Sampling Element* Request for Participation
- Municipal Regional Stormwater Permit:  
[http://www.swrcb.ca.gov/sanfranciscobay/board\\_decisions/adopted\\_order\\_s/2009/R2-2009-0074.pdf](http://www.swrcb.ca.gov/sanfranciscobay/board_decisions/adopted_order_s/2009/R2-2009-0074.pdf)
- San Francisco Bay PCBs Total Maximum Daily Load (TMDL):  
[http://www.swrcb.ca.gov/sanfranciscobay/water\\_issues/programs/TMDLs/sfbaypcbstmdl.shtml](http://www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/sfbaypcbstmdl.shtml)
- EPA PCBs in Caulk page: <http://www.epa.gov/pcbsincaulk>

## CONTACT INFORMATION

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